

PUBLIC REVIEW DRAFT

**CEQA INITIAL STUDY/MITIGATED
NEGATIVE DECLARATION**

**MARTINEZ WATERFRONT PARK RENOVATION PROJECT
MARTINEZ, CALIFORNIA**

Prepared for:

City of Martinez
525 Henrietta Street
Martinez, California 94553

Prepared by:

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Project No. RDL1301

LSA

August 2016

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MITIGATED NEGATIVE DECLARATION

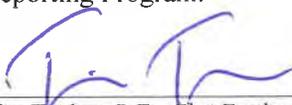
Project Name. Martinez Waterfront Park Improvements Project

Project Location. Proposed improvements would be located within the existing Martinez Waterfront Park at North Court Street, Martinez, Contra Costa County, California. The existing park is located state land granted via lease to the City of Martinez, through the East Bay Regional Park District for use as a waterfront park.

Project Description. The City of Martinez proposes improvements to the existing Martinez Waterfront Park. With the exception of the existing skate park, shade structure, bocce ball courts, and newly renovated restroom building, most of the 31-acre park site would be renovated. Proposed improvements include: Americans with Disabilities Act (ADA) accessible paths, addition of a new ADA accessible playground restroom, renovation of existing ball fields, improvements to the concession area, path lighting and electrical improvements, field lighting, parking and playground improvements and improvements to the existing group picnic area and the events meadow .

Findings. It is hereby determined that, based on the information contained in the attached Initial Study, the project would not have a significant adverse effect on the environment.

Mitigation measures necessary to avoid the potentially significant effects on the environment are included in the attached Initial Study, which is hereby incorporated and fully made part of this Mitigated Negative Declaration. The City of Martinez has hereby agreed to implement each of the identified mitigation measures, which would be adopted as part of the Mitigation Monitoring and Reporting Program.



Tim Tucker, P.E., City Engineer
City of Martinez

09/13/2016

Date

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INITIAL STUDY

PROJECT INFORMATION

1. **Project title:** Martinez Waterfront Park Improvements Project
2. **Lead agency name and address:** City of Martinez
525 Henrietta Street
Martinez, CA 94553
3. **Contact person and phone number:** Tim Tucker, P.E., City Engineer
Phone: (925) 372-3562
E-mail: ttucker@cityofmartinez.org
4. **Project location:** The Martinez Waterfront Park is located on North Court Street, Martinez, Contra Costa County, California. The park is accessed via Ferry Street and Joe Dimaggio Drive.
5. **Project sponsor's name and address:** City of Martinez
525 Henrietta Street
Martinez, CA 94553
6. **General plan designation:** The Martinez Waterfront Park is located on state land granted via lease to the City through the East Bay Regional Parks District. Therefore, it has no land use designation in the City's General Plan.
7. **Zoning:** M-OS/RF (Mixed Use District – Open Space/Recreation Facilities)
8. **Description of project:**

The City of Martinez (City) is proposing improvements to the existing Martinez Waterfront Park, located north of Joe DiMaggio Drive and east of North Court Street. The project site consists of four baseball and softball fields, one multi-use field with a combined soccer/baseball-softball field, a concession building with restrooms and storage, a multi-purpose lawn area, a skate park, a shade structure, a tot lot, a bocce ball area consisting of 15 courts, a restroom building, a group picnic area and some separate family picnic pods, and five parking lots around the perimeter of the park. A drainage ditch runs north-south between the multi-purpose lawn area and the baseball-softball fields. This ditch drains from unknown areas south of the railroad tracks.

Except for the existing skate park, shade structure, the drainage ditch, the bocce courts, and the newly renovated restroom building next to the bocce court, the majority of the 31-acre park area would be renovated. Specific elements of the proposed renovation would include the following:

ADA Accessibility. Many portions of the existing paths are cracked or damaged by tree roots and vehicular traffic. Most of the existing asphalt paths would be replaced with reinforced concrete paving and new asphalt paving in conformance with codes related to the Americans with Disabilities Act (ADA).

Renovation of Fields 1 through 4. The proposed improvements for all four baseball-softball fields include: irrigation system replacement, turf replacement, drainage improvements, new sports lighting, better spectator seating, safety netting along portions of the sidelines subject to foul balls, fencing improvements, and backstop improvements. Additional improvements for all fields would include: grading to improve sight lines to and from the outfield. Field 3 would be re-oriented to allow for additional spectator seating space, better circulation, and a minimum 300-foot field distance from home plate to outfield.

Lighting would be installed to accommodate evening use of all four baseball fields. Lights would be used between mid-March and mid-November, until 11:00 P.M. A total of 18 lights ranging in height from 70 to 80 feet would be installed. Two shared light poles would be installed between each adjacent two fields and two lights would be installed along each outfield. Two additional outfield lights are also proposed for Field 3 in order to minimize trespass glare. Lights would be placed on a timed controller and would not be used past the hour of 11:00 P.M.

Concession Area. The concession/restroom area improvements would include various modifications for ADA compliance, including those affecting restroom areas, built-in benches, concession building counter height, and path of travel improvements to these facilities. Other improvements would include: new paint, new accessories in the restrooms, and a new electrical hand dryer to replace use of paper towels. A shade covered picnic area, an ADA-compliant high-low drinking fountain, and new concrete paving would be installed through the concession area. In addition, new landscaping (tree planting) with associated irrigation would be installed to provide more shade.

Renovation of Field 5 Softball/Soccer Field. During the current phase of work, proposed field renovations would include backstop fabric replacement. A new designated concrete pathway and accessible path from the North Parking Area and some new picnic tables would also be provided.

North Parking Area by Field 5. New asphalt paving at ADA accessible parking stalls would be provided. In addition, a concrete pedestrian pathway connection between parking and the adjacent field, drought-tolerant ground coverings, shade trees and irrigation would be installed. The North Parking Area would also receive a cape seal treatment and new striping.

Path Lighting and Electrical Improvements. New LED pathway safety lighting, fixtures, and poles would be installed along pathways for security lighting. A security camera would also be installed. Additional light at the field parking lot along Joe DiMaggio would also be installed to accommodate night use of the sports fields.

Group Picnic Area. Shade elements and new furniture such as picnic tables, prep tables, BBQ grills, and trash receptacles would be provided in the group picnic areas. Half of the existing crushed rock paving would be replaced with concrete paving.

Tot Lot Improvements. A new accessible picnic area with two tables and concrete paving would be provided. Accessible concrete paving would also be provided at the sand table play area for ADA compliance. Additional shade trees and irrigation would be installed. An approximately 210-square foot ADA accessible restroom building with two fixtures would be located near the existing Tot Lot Play Area.

Maintenance Yard. The park maintenance area, located to the west of the soccer field, would be secured by screened fencing and re-graded for better access and operation. An approximately 7,500-square foot concrete pad and gravel surfacing would be installed. An electrical stub out would also be provided for future use.

Multi-Purpose Lawns/Events Meadow. The existing events meadow, used for large public fairs and events, would be improved. Circulation around the meadow would be redesigned to allow large vehicles to stay on the perimeter path while maintaining the turf or servicing special events. The irrigation system would be replaced and the existing turf would be renovated. Adjacent to the Events Meadow along North Court Drive, designated parallel parking with asphalt concrete (AC) paving and one drop-off area would be provided.

Parking Improvements near Bocce Courts. The parking lot adjacent to the Bocce Courts is the most heavily utilized parking lot at Waterfront Park. The asphalt surface is currently in need of extensive repair. In order to overcome the shortage of parking spaces, a parking lot expansion to the west, partially on top of the existing small entry parking lot, would increase capacity by thirty-five cars. The existing parking lot would receive new striping, paving repair, and a layer of new asphalt.

Signage Improvement. New park entry sign and a new directional sign at the park entry at the intersection of Joe DiMaggio Drive and North Court Street would be installed.

9. Surrounding land uses and setting:

The project area consists of the existing Martinez Waterfront Park, a 31-acre park in northern Martinez. The existing park is located on state land granted via lease to the City via the East Bay Regional Parks District. The project site is bordered to the north by the Martinez Marina and the Carquinez Strait, to the west by Martinez Regional Shoreline and light industrial uses, to the south by Joe DiMaggio Drive and the railroad tracks and to the east by heavy industrial uses. A variety of land uses are located further south of Joe DiMaggio Drive including commercial, residential, and heavy industrial uses.

The entire project site is on filled land and supports few natural plant communities. The majority of the acreage within the site is irrigated turf and unpaved recreational areas, mixed with substantial developed areas and stands of ornamental trees. Developed areas include structures, pavement, and barren or graveled lots. Landscaped margins, medians and fringes within the park lands are well-mulched or ivy-covered when well-maintained but support weedy non-native grassland cover in areas that are not maintained.

The most common ornamental trees in the project site are acacia and eucalyptus, as well as myoporum, palm, pepper, redwood, poplar, Canary pine, and Chinese pistachio. All these trees are planted. One native tree, a sapling coast live oak (*Quercus agrifolia*) was identified during

the biological reconnaissance survey of the project area. The wooded parts of the site are often underlain by Canary ivy (*Hedera canariensis*).

A thin margin of brackish marsh and riparian herbaceous cover occurs along both banks of the tidal ditch. The most common species in this cover include salt grass (*Distichlis spicata*), marsh gumplant, (*Grindelia stricta*) Himalayan blackberry (*Rubus discolor*), wild oats (*Avena* sp.), and dallis grass (*Paspalum dilatatum*), along with a mix of less numerous grasses and herbs. One or two small, sparsely distributed patches of bulrush (*Scheonoplectus* sp.) are present on the banks, but there is otherwise little emergent marsh cover. No pickleweed (*Salicornia pacifica*), an important component of salt marsh harvest mouse (*Reithrodontomys raviventris*) habitat, is present in the ditch or elsewhere on site.

10. Other public agencies with approval authority:

- California Department of Fish and Wildlife
- Regional Water Quality Control Board
- East Bay Regional Parks District

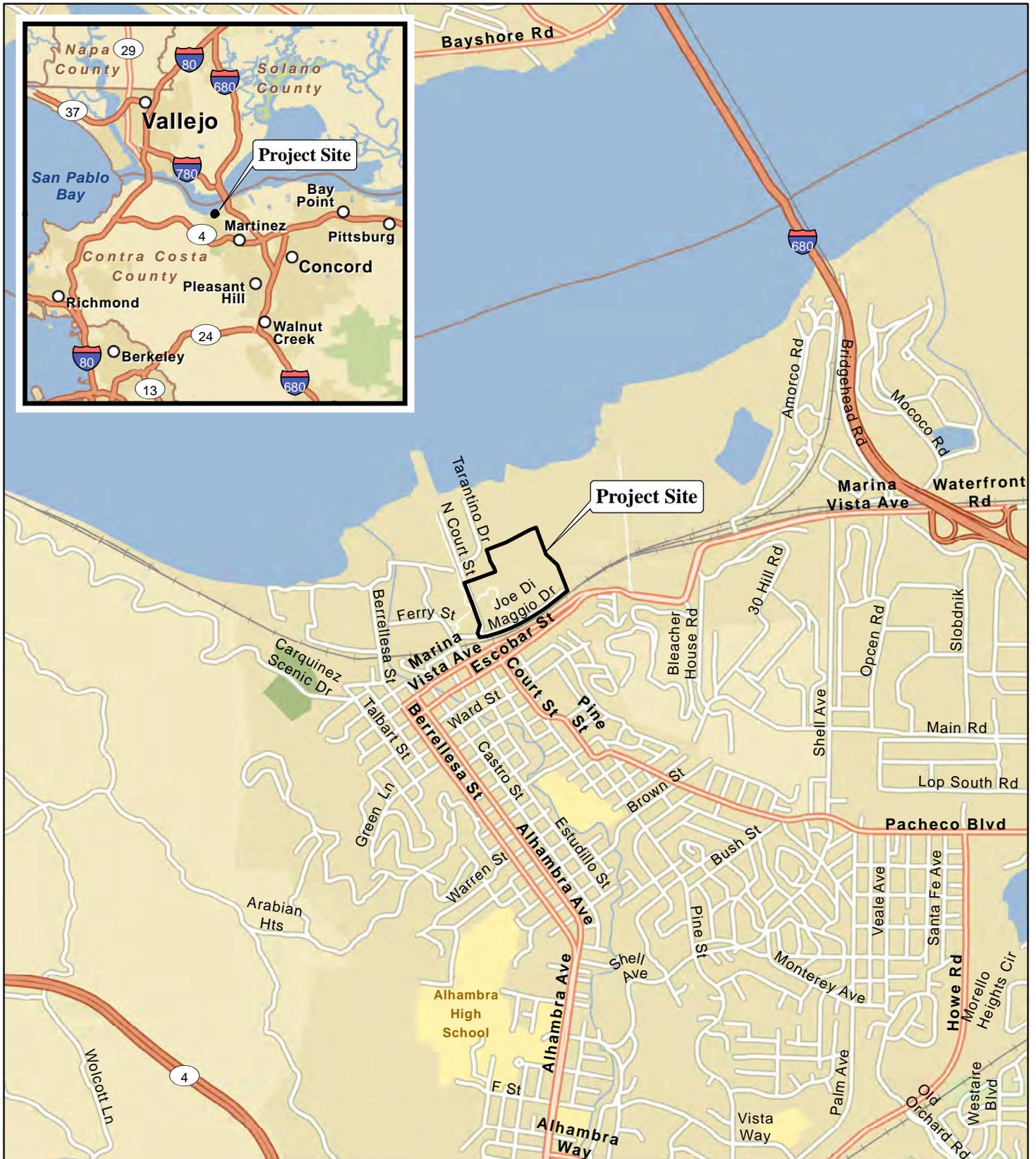
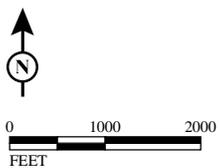


FIGURE 1

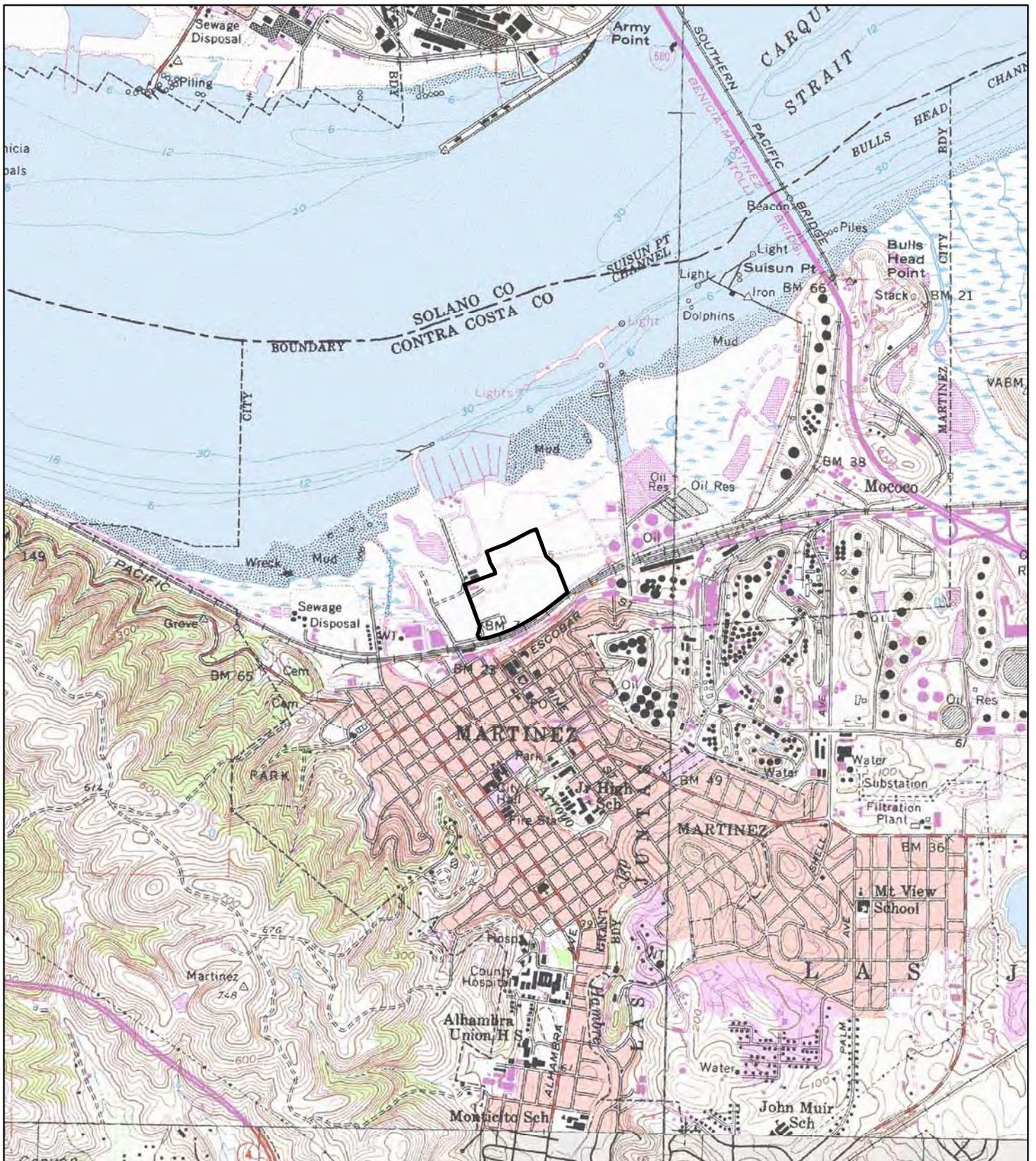
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SOURCE: ESRI StreetMap North America (2012).
 I:\RDL1301\GIS\Maps\CEQA\Figure 1_Regional Location.mxd (7/8/2016)

Waterfront Park, City of Martinez
 Contra Costa County, California
 Regional Location

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LEGEND

 Project Site



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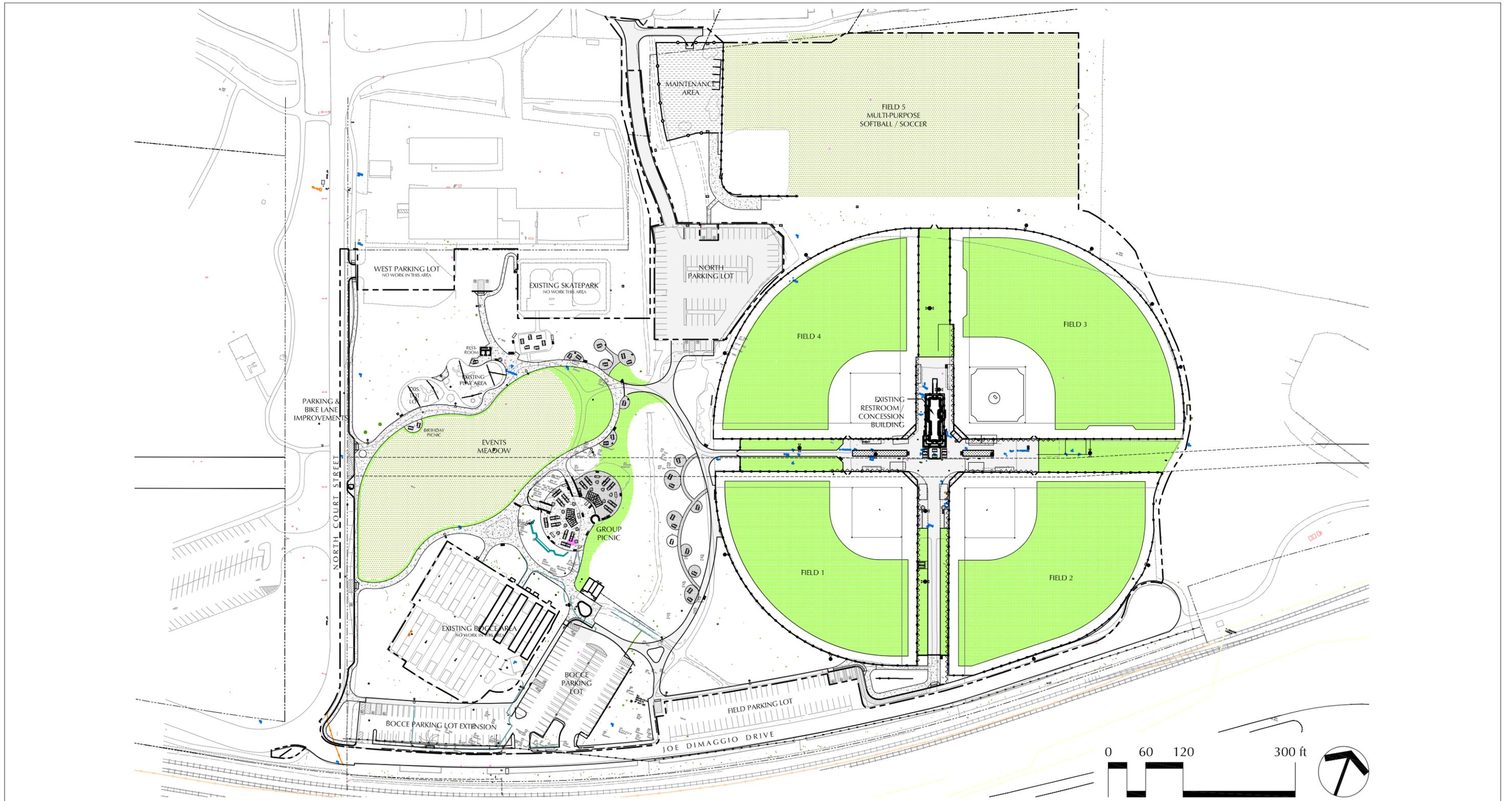
FIGURE 2

Waterfront Park, City of Martinez
Contra Costa County, California
Site Location

SOURCE: 7.5-minute Quads: Benicia, Calif. (1980), Vine Hill, Calif. (1980), Briones Valley, Calif. (1968), and Walnut Creek, Calif. (1980)

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ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

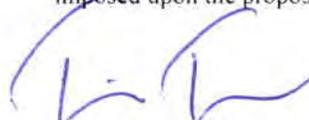
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural & Forest Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials | <input checked="" 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 checked="" type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities/Service Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

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.



 Tim Tucker, P.E., City Engineer
 City of Martinez

09/13/2016

 Date

EVALUATION OF ENVIRONMENTAL IMPACTS

This section identifies the environmental impacts of this project by answering questions from Appendix G of the CEQA Guidelines, the Environmental Checklist Form. The environmental issues evaluated in this chapter include:

- Aesthetics
- Agricultural & Forest Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology/Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Services Systems
- Mandatory Findings of Significance

All analyses take into account the entire 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. Impacts are categorized as follows:

Potentially Significant Impact is appropriate if there is substantial evidence that an effect is significant, or where the established threshold has been exceeded. If there are one or more “Potentially Significant Impact” entries when the determination is made, an Environmental Impact Report (EIR) may be required.

Less Than Significant with Mitigation Incorporated applies where the incorporation of mitigation measures would reduce an effect from Potentially Significant Impact to a Less Than Significant Impact. Mitigation measures are prescribed to reduce the effect to a less than significant level.

Less Than Significant applies when the project will affect or is affected by the environment, but based on sources cited in the report, the impact will not have an adverse effect. For the purpose of this report, beneficial impacts are also identified as less than significant. The benefit is identified in the discussion of impacts, which follows each checklist category.

A No Impact answer is adequately supported if referenced information sources show that the impact simply does not apply to projects like the one involved. A No Impact Answer is explained where it is based on project-specific factors as well as general standards.

I. AESTHETICS.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Affected Environment

The proposed improvements would be located within the existing Martinez Waterfront Park, which is developed for active and passive recreation uses. The project site consists of four softball fields, one multi-use field with combined soccer/baseball field, a concession building with restrooms and storage, a multi-purpose lawn area, a skate park, a shade structure, a tot lot, a bocce ball area consisting of 15 courts, a restroom building, a group picnic area and some family picnic pods, and five parking lots around the perimeter of the park. A drainage ditch runs north-south between the multi-purpose lawn area and the softball fields. This ditch drains unknown areas to the south of the railroad tracks.

The project site is bordered to the north by the Martinez Marina and the Carquinez Strait, to the west by Martinez Regional Shoreline and light industrial uses, to the south by Joe DiMaggio Drive and the railroad tracks and to the east by heavy industrial uses. A variety of land uses are located further south of Joe DiMaggio Drive including commercial, residential, and heavy industrial uses.

The proposed project includes the renovation of existing facilities as well as associated drainage and landscaping improvements. As part of the proposed project, new LED pathway lights, fixtures and poles would be installed along pathways for security lighting. Parking lot lights will be added to new and existing parking lots near the bocce courts and Fields 1 through 5. Sports lights ranging from 70 to 80 feet high are proposed for evening use of the four baseball fields. The proposed project would result in modification of existing structures and the addition of new structures within the existing developed portion of the park, resulting in changes to the existing visual character of the site.

Discussion

a) *Have a substantial adverse effect on a scenic vista?*

Less Than Significant Impact. The park site is located in a relatively flat area along the Martinez Waterfront. This flat area extends south through Downtown Martinez. Views from within the park are currently constrained by surrounding development and existing mature trees. The park is bounded to the southeast (across Joe DiMaggio Drive) by upland areas consisting of moderate to steeply sloping hills. Uses in these hillside areas have intermittent views into the park area.

The Martinez Waterfront Park is a scenic resource in the City of Martinez, along with the Martinez Regional Shoreline, Martinez City Park, Historic Downtown Martinez, Carquinez Strait Shoreline Park, and Carquinez Scenic Drive. The City of Martinez General Plan¹ includes specific open space “policy zones” to address preservation of scenic areas. The policy regarding the waterfront area states:

The North Contra Costa Waterfront Zone should remain essentially unimproved and devoted to open space land use. Most of this area is comprised of the marshes and mudflats of the waterfront area that have high value as natural habitats and as scenic and recreational areas.

None of the visual changes that would result from implementation of the proposed park improvements would have a substantial adverse effect on a scenic vista. Proposed improvements (including new landscaping, field and pathway improvements, and concession upgrades) would be generally low profile and would not block views. The most evident new feature within the viewshed would be the proposed field lights, which would extend approximately 70-80 feet high. These poles would be readily visible around the perimeter of the fields during daytime hours. However, due to their slender, vertical appearance, they would not be of such physical prominence that their presence would significantly affect a scenic vista.

During the construction period, additional vehicles, workers, and materials coming to and from the site, and site preparation activities would be visible from travelers along adjacent roadways and from residences to the southeast. However, construction activities would occur within an already existing facility and would be of relatively short duration, intermittent and largely screened.

Proposed improvements would not include any tall structures or landscaping that would reduce, obstruct or degrade scenic vistas. Therefore, the proposed project would have a less than significant impact on scenic vistas.

- b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?*

No Impact. The project site is not located within the vicinity of a State Scenic Highway² and, therefore, no impacts to scenic resources within a State Scenic Highway would occur with implementation of the proposed project.

- c) *Substantially degrade the existing visual character or quality of the site and its surroundings?*

Less Than Significant Impact. Implementation of the proposed project would result in the following visual changes to the project site:

¹ City of Martinez, 1973 (as amended 2010). Martinez General Plan. Available online at: <http://www.cityofmartinez.org/civicax/filebank/blobdload.aspx?BlobID=7569> (Accessed May 19, 2015).

² California Department of Transportation, 2015. California Scenic Highway Program website: http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm (Accessed July 29, 2015).

- Construction of new structures and recreational facilities, including new picnic tables, concession area improvements, ADA-compliant pathways and other ADA improvements, and realignment of the sports fields and related improvements (e.g., fencing, spectator seating, safety netting, benches).
- Installation of new pathway, parking lot and security lighting, as well as 18 light standards up to 80 feet high for the sports fields.
- Landscape changes to the site, including renovation of existing turf, removal of approximately 144 trees (most of which are myoporum and in poor condition) to accommodate proposed improvements, and planting of new landscaping and shade trees.

Located in a developed area of Martinez within an existing park, the proposed improvements are appropriate for this location and would be visually compatible with the character of the park and its surroundings. Therefore, the visual character of the site would not be degraded because the site would maintain its existing character as a park with active recreation facilities (e.g., sports fields).

Changes to the site that would occur as a result of project implementation are expected to result in an overall benefit to the visual quality of the site. Removal of diseased trees and the planting of new trees and other landscaping is intended to retain and improve the natural appeal of the area. As described further in Response IV.d., approximately 260 new trees would be planted as part of the proposed project, including 50 oaks that would be planted along the existing ditch and among the family picnic areas. Modifications for ADA-compliance would improve the accessibility of the entire park. Pavement that is currently cracked or damaged would be replaced with reinforced concrete paving and other facilities (e.g. fields and concession area) would be renovated and improved.

Residences located on the hillsides south of the sports fields would be able to view the light fixtures, and poles from their yards and/or windows. Due to the site topography, mature vegetation on the site provides little screening of proposed improvements for these residences. However, no unique visual features are associated with the existing park and surrounding area, proposed improvements would be consistent with the existing visual character of the park and adjacent development, proposed improvements would not block any protected or natural scenic view (as described above in Response I(a)). Therefore, the proposed project would not substantially degrade the existing visual character of the site or the surrounding area.

- d) *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Potentially Significant Unless Mitigation Incorporated. The project site is located in a developed area. Streetlights, vehicle head and tail lights on area roadways, and lighting associated with adjacent development are the existing sources of light and glare in the project area. The project site is currently developed as a City park and would continue to be used as such. Existing light sources within the project site include street lights along Joe DiMaggio Drive and North Court Street and lights within the existing parking area. As described in the lighting study³ prepared for the proposed project (Appendix A), due to its suburban character, the natural ambient nighttime conditions are similar to bright moonlight.

³ Zeiger Engineers, Inc., 2016. Martinez Waterfront Park Sports Lighting. 7 July.

As part of the proposed project, pathway and parking lot lighting would be provided at low lighting levels in an evenly distributed pattern. Existing lights at the small parking lot and the bocce parking area would be replaced. Additional lights would be installed at the field parking lot along the pedestrian path and three additional street lights would be mounted on existing utility poles along Joe DiMaggio Drive. These lights would be full cutoff light-emitting diode (LED) type lighting and all lights mounted higher than 24 feet would have motion sensor/automatic dimming controls. Proposed lighting would be consistent with existing lighting in the project area and would blend in with surrounding urban development.

Eighteen sports lights ranging in height from 70 to 80 feet would be installed to accommodate evening use of all four baseball fields. Two shared light poles would be installed between adjacent fields and two lights would be installed in each outfield. Field 3 would have two additional outfield lights. These light fixtures and poles would be visible during the daytime and during their use at nighttime and would generate additional nighttime lighting in the project vicinity.

The proposed light pole locations and the orientation of the light fixtures are designed to minimize potential spill light beyond the perimeter of the sports field.⁴ Design features for light beam control on the lamp fixture include aluminum housings with glare control shields, aiming, external louvers and shields, beam control, and appropriate light levels recommended by the Illuminating Engineering Society of North America (IESNA) RP-6 *Current Recommended Practice for Sports Lighting*. The proposed light fixtures would incorporate these design elements to better direct the light beam inward and toward the ground and to reduce spill light and glare. The proposed mounting height of 70 to 80 feet would allow for steep downward positioning of the light fixture for better light beam control. The ability to precisely position and focus the fixtures in addition to their shielding design would minimize potential glare impacts. Using the IESNA criteria, the proposed lighting would provide an average constant illumination of approximately 50 footcandles⁵ (fc) within the infield and approximately 30 fc in the outfield.

During evening hours of lighting operation (up to 10:30 pm), the four fields would be visible as a prominent feature in a previously existing area that would be dark other than light from existing sources (e.g., street lamps along Joe DiMaggio Drive and North Court Street and existing parking lot lighting) for those with an unobstructed view of the existing fields. As these fields constitute an existing use that is currently visible during the day, this change (e.g., visibility of fields at night) to the existing view would not be substantial.

The City of Martinez does not have specific environmental thresholds for spillover light. Examples of commonly experienced light levels in other settings are shown below:

- Full moonlit night: approximately 0.01 fc

⁴ Spill light is light that illuminates surfaces beyond the area intended to be illuminated.

⁵ A footcandle is a common unit of measurement used to calculate adequate lighting levels of workspaces in buildings or outdoor space. It is used to describe the light level that a lamp is expected to provide over the long-term. A horizontal footcandle is the amount of light striking horizontal plane and a vertical footcandle is the amount of light striking vertical plane.

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

For the purposes of this IS/MND, the City has selected a very conservative significance threshold of spill light over 0.2 fc on adjacent properties. Because most of the existing nighttime light in the vicinity of the site consists of street lighting, the 0.2 fc threshold would represent spillover light less than that of neighborhood street lighting (which ranges from 1 to 5 fc).

As described in the lighting study⁶ prepared for the proposed project (Appendix A), the nearest houses to the project site are located from 250 to 600 feet from the outfield fence. Due to site topography, these houses are located at elevations ranging from 20 to 78 feet above field level. Computer-predicted spill light values (maximum vertical footcandles⁷) were analyzed at various distances and elevations to take into consideration the hillside residences to the south of the fields. Values ranged from less than 0.58 fc along Marina Vista Avenue to 0.25 fc along Escobar Street, to less than 0.05 fc along Lafayette Street. The values along Marina Vista Avenue and Escobar Street exceed the proposed maximum limit of 0.2 fc. Therefore, the proposed project would produce light that could adversely affect hillside residents living to the south of the fields. Implementation of Mitigation Measures AES-1 and AES-2 would reduce potential impacts related to light spillover to a less than significant level.

Mitigation Measure AES-1: Fixtures shall be equipped with special internal optical reflectors and external visors to effectively control trespass light. The proposed field lights shall be provided with automatic time switch controls to turn OFF the lights at a pre-set time. The controls shall provide only for manually switching ON the lights.

Mitigation Measure AES-2: Field testing of the system performance shall be conducted using a standard handheld illumination meter to ensure that the maximum spill light on residences at the identified hillside streets remains at or below 0.2 fc. As needed, luminaires shall be re-aimed or adjusted during initial nighttime testing of the field lights. Lights shall be tested and adjusted on an annual basis for the first three years following installation and whenever light fixtures are replaced.

Although not defined as trespass light, there will be indirect skylight, or a corona effect, due to reflected light off the fields into the atmosphere. This effect could be visible for some great distance from the fields. However, its magnitude is unpredictable, as it is dependent on weather conditions. Residents would be aware of the indirect skylight when the sports lights are in operation. However, the amount of indirect skylight produced would not be of a magnitude to

⁶ Ibid.

⁷ Maximum vertical footcandles is a measurement which represents the illumination on a vertical surface (such as the side of a house).

disturb residents and would be generally consistent with existing nighttime ambient light levels. Therefore, the impact of indirect skylight on nighttime views would be less than significant.

No glare-inducing materials (i.e., glass, metal) would be used in proposed improvements. Therefore, the proposed project would not create a new source of substantial glare which would adversely affect daytime views in the project area.

II. AGRICULTURAL AND FOREST RESOURCES.

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 Dept. 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 forest land, 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:

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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 a non-agricultural 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, forest land (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 forest land or conversion of forest land 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 non-agricultural use or conversion of forestland to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Affected Environment

The project site is mapped as “Other Land” by the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP).⁸ Other Land is not included in any other mapping category. Common examples include: low density, rural residential development; brush, timber, wetland and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40 acres. The project site is zoned as Mixed Use District – Open Space/Recreation Facilities (M-OS/RF).⁹

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting

⁸ California Department of Conservation, Division of Land Resource Protection, 2011. Contra Costa County Important Farmland 2010. July. Available online at: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/con10.pdf> (Accessed May 21, 2015).

⁹ City of Martinez, 2011. City of Martinez Community View Maps. Available online at: <http://maps.digitalmapcentral.com/production/vecommunityview/cities/Martinez/index.aspx> (Accessed May 18, 2015).

specific parcels of land to agricultural or related open space use. The project site is not under a Williamson Act contract.¹⁰

No forest land or timberland is identified on or near the project site, and the project site is not zoned for forest or timber uses.

Discussion

- 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 a non-agricultural use?*

No Impact. No Farmland is mapped on or near the project site. Therefore, the proposed project would not convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance to a non-agricultural use.

- b) *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*

No Impact. The site is not zoned for agricultural use, and is not regulated by the Williamson Act. The project area is located within an existing City park and would not conflict with land zoned for agricultural use or Williamson Act contract.

- c) *Conflict with existing zoning for, or cause rezoning of, forest land (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))?*

No Impact. The project area contains no forest or timberland and is not zoned for forest land, timberland, or timberland production.

- d) *Result in the loss of forest land or conversion of forest land to non-forest use?*

No Impact. See response II(c) above.

- e) *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?*

No Impact. See responses II (a) and II(c) above.

¹⁰ California Department of Conservation, Division of Land Resource Protection, 2013. Contra Costa County Williamson Act FY 2012/2013. Available online at: http://ftp.consrv.ca.gov/pub/dlrp/wa/contra_costa_12_13_WA.pdf (Accessed May 21, 2015).

III. AIR QUALITY.

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:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Affected Environment

The proposed project is located in the City of Martinez in Contra Costa County within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which regulates air quality in the San Francisco Bay Area. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen substantially. In Martinez and the rest of the air basin, exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

The Air Monitoring Program of the BAAQMD operates a 28-station monitoring network which provides the data required to determine whether the Bay Area is in compliance with State and federal air quality standards. One monitoring station in Martinez, located at 521 Jones Street, monitors SO₂ and toxics..

Ozone levels, as measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the BAAQMD and other regional, State and federal agencies. The reduction of peak concentrations represents progress in improving public health; however the Bay Area still exceeds the State standard for 1-hour and 8-hour ozone levels. In addition, the Bay Area was designated as a nonattainment area for the federal 8-hour ozone level.

National and State standards have also been established for fine particulate matter (diameter 2.5 microns or less, PM_{2.5}), over 24-hour and yearly averaging periods. Fine particulate matter, because of the small size of individual particles, can be especially harmful to human health. Fine particulate matter is emitted by common combustion sources such as cars, trucks, buses and power plants, in addition to ground-disturbing activities. The Bay Area is an unclassified area for the federal PM₁₀

standard and a nonattainment area at the State level. An “unclassified” designation signifies that data does not support either an attainment or nonattainment status.

Discussion

a) *Conflict with or obstruct implementation of the applicable air quality plan?*

Less Than Significant Impact. The applicable air quality plan is the Bay Area Air Quality Management District’s (BAAQMD) 2010 Clean Air Plan, which was adopted on September 15, 2010. The Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defines control strategies to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce greenhouse gas emissions to protect the climate. Consistency with the Clean Air Plan can be determined if the project does the following: 1) supports the goals of the Clean Air Plan; 2) includes applicable control measures from the Clean Air Plan; and 3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan.

Clean Air Plan Goals. The primary goals of the 2010 Bay Area Clean Air Plan are to: attain air quality standards; reduce population exposure to air pollutants and protect public health in the Bay Area; and reduce greenhouse gas emissions and protect the climate. As indicated in the analysis discussion that follows below, the proposed project would not exceed the BAAQMD’s significance criteria for air pollutants or greenhouse gas emissions. The proposed project would not hinder the region from attainment of the goals outlined in the 2010 Clean Air Plan.

Clean Air Plan Control Measures. The BAAQMD identifies control measures as part of the Clean Air Plan to reduce ozone precursor emissions from stationary, area, mobile, and transportation sources. The transportation control measures are designed to reduce emissions from motor vehicles by reducing vehicle trips and vehicle miles traveled (VMT) in addition to vehicle idling and traffic congestion. The proposed project would not conflict with the identified transportation and mobile source control measures of the Clean Air Plan. The proposed project would improve park facilities and would not substantially increase vehicle use. The BAAQMD’s 2010 Clean Air Plan also includes Land Use and Local Impacts Measures (LUMs) to achieve the following: promote mixed-use, compact development to reduce motor vehicle travel and emissions; and ensure that planned growth is focused in a way that protects people from exposure to air pollution from stationary and mobile sources of emissions. The LUMs identified by the BAAQMD are not specifically applicable to the proposed project. The project consists of re-development of the existing park and therefore would not conflict with local land use measures.

Energy and Climate Control Measures (ECM), which are designed to reduce ambient concentrations of criteria pollutants and reduce emissions of CO₂ are included in the 2010 Clean Air plan. Implementation of these measures is intended to promote energy conservation and efficiency in buildings throughout the community, promote renewable forms of energy production, reduce the “urban heat island” effect by increasing reflectivity of roofs and parking lots, and promote the planting of (low-VOC-emitting) trees to reduce biogenic emissions, lower air temperatures, provide shade, and absorb air pollutants. The project application has specified the use of LED lighting on proposed pathways that would reduce overall energy consumption and

therefore reduce GHG emissions. The proposed project would also include construction of shade structures and additional trees. Additionally, in some places, existing asphalt will be replaced with crushed rock paving which could be attributable to reducing the heat island effect in that area. Therefore the project would not conflict with the Clean Air Plan's energy measures.

Clean Air Plan Implementation. The project would redevelop an existing park which is consistent with the vision of the Clean Air Plan. Control measures included in the plan include stationary source measures, transportation control measures, mobile source measures, land use and local impact measures, and energy and climate measures. The stationary source measures are not applicable to the proposed project as the measures are related to activities such as metal-melting facilities, open burning, livestock waste, and refineries which are not included as part of the project. Therefore, the project would not hinder implementation of these measures. As discussed above, the project would implement the applicable transportation, mobile source, land use and local impact, and energy measures and would not hinder implementation of these measures. Therefore, the proposed project would not hinder or disrupt implementation of any control measures from the Clean Air Plan.

b) *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

Potentially Significant Unless Mitigation Incorporated. According to the BAAQMD's CEQA Guidelines, to meet air quality standards for operational-related criteria air pollutant and air precursor impacts, the project must not:

- Generate construction emissions of ROG, NO_x or PM_{2.5} greater than 54 pounds per day or PM₁₀ exhaust emissions greater than 82 pounds per day.
- Contribute to CO concentrations exceeding the State ambient air quality standards; or
- Generate operation emissions of ROG, NO_x or PM_{2.5} of greater than 10 tons per year or 54 pounds per day or PM₁₀ emissions greater than 15 tons per year or 82 pounds per day.

The following section describes the project's construction impacts, CO impacts, and operation-related air quality impacts.

Construction Emissions. During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by excavation, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, ROG, directly-emitted particulate matter (PM_{2.5} and PM₁₀), and TACs such as diesel exhaust particulate matter.

The proposed construction schedule for all improvements would be approximately 9 months. The BAAQMD has developed screening criteria to provide a conservative indication of whether a project could result in a potentially significant impact. If the screening criteria are met, then a project would not have to do a detailed analysis of air pollutant impacts. The screening size for a City park is 65 acres. The proposed project is 31 acres; therefore it would be below the screening size and would not have significant construction emissions.

The effects of construction activities would be increased dustfall and locally elevated levels of PM₁₀ downwind of construction activity. Construction dust would be generated at levels that

could create an annoyance to occupants of nearby properties. Although exhaust emissions would not exceed the established thresholds, the BAAQMD requires the implementation of Best Management Practices to ensure construction dust impacts are reduced to a less than significant level. Implementation of Mitigation Measure AIR-1 would require implementation of the BAAQMD's Best Management Practices and would reduce diesel PM exhaust and ROG emissions as well as construction dust PM₁₀ and PM_{2.5} impacts to less than significant.

Mitigation Measure AIR-1: Consistent with the Best Management Practices required by the BAAQMD and to reduce construction-related ROG emissions, the following actions shall be incorporated into construction contracts and specifications for the project:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly visible sign shall be posted with the telephone number and contact information for the designated on-site construction manager available to receive and respond to dust complaints. This person shall report all complaints to the City of Martinez and take immediate corrective action as soon as practical but not more than 48 hours after the complaint is received. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.
- The project contractor shall use low volatile organic compound (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
- All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NO_x and PM.
- All contractors shall use equipment that meets California ARB's most recent certification standard for off-road heavy duty diesel engines.

Localized CO Impacts. The BAAQMD has established a screening methodology that provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD's *CEQA Air Quality Guidelines*, a proposed project would result in a less than significant impact to localized CO concentrations if the following screening criteria are met:

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

The proposed project would not conflict with the Contra Costa Transportation Authority's Countywide Transportation Plan¹¹ for designated roads or highways, a regional transportation plan, or other agency plans. Therefore, the proposed project would not result in localized CO concentrations that exceed State or federal standards. Tournaments are expected to have approximately 700 spectators which would generate approximately 100 peak hour trips. The proposed project would not be expected to increase traffic volumes to more than 24,000 vehicles per hour.

Operational Emissions – Regional Emissions Analysis. In addition to short-term construction emissions, the project would generate long-term operation air emissions. These long-term emissions are primarily area source emissions that would result from landscaping equipment used to maintain the proposed project. CalEEMod was used to calculate long-term mobile and area source emissions. CalEEMod output sheets are included in Appendix B of this Initial Study.

The primary emissions associated with the project are regional in nature, meaning that air pollutants are rapidly dispersed on emission or, in the case of vehicle emissions associated with the project; emissions are released in other areas of the Air Basin. The daily emissions associated with project operational trip generation and area sources are identified in Table A for ROG, NO_x, PM₁₀, and PM_{2.5}. The results indicate the project would not exceed the criteria for any of the four regional emissions types; therefore the proposed project would not have a significant effect on regional air quality.

¹¹ Contra Costa Transportation Authority, 2014. *County Wide Transportation Plan*. August.

Table A: Project Regional Emissions

Emissions in Pounds Per Day				
	ROG	NO_x	PM₁₀	PM_{2.5}
Area Source Emissions	30.6	0.0	0.0	0.0
Energy Source	0.0	0.0	0.0	0.0
Mobile Source Emissions	0.16	0.36	0.21	0.06
Total Emissions	30.8	0.36	0.21	0.06
BAAQMD Significance Threshold	54.0	54.0	82.0	54.0
Exceed?	No	No	No	No
Emissions in Tons Per Year				
Area Source Emissions	5.6	0.0	0.0	0.0
Energy Source	0.0	0.0	0.0	0.0
Mobile Source Emissions	0.0	0.1	0.0	0.0
Total Emissions	5.6	0.1	0.0	0.0
BAAQMD Significance Threshold	10.0	10.0	15.0	10.0
Exceed?	No	No	No	No

Source: LSA Associates, Inc., 2015.

- c) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

Potentially Significant Unless Mitigation Incorporated. CEQA defines a cumulative impact as two or more individual effects, which when considered together, are considerable or which compound or increase other environmental impacts. According to the BAAQMD, air pollution is largely a cumulative impact and no single project is sufficient in size to itself result in nonattainment of ambient air quality standards. In developing the thresholds of significance for air pollutants used in the analysis above, BAAQMD considered the emission levels for which a project’s individual emissions would be cumulatively considerable. The BAAQMD *CEQA Air Quality Guidelines* indicate that if a project exceeds the identified significance thresholds, it’s emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region’s existing air quality conditions. If daily average or annual emissions of operational-related criteria air pollutants exceed any applicable threshold established by the BAAQMD, the proposed project would result in a cumulatively significant impact.

As described under section b), above, implementation of the proposed project, with implementation of Mitigation Measure AIR-1, would generate less than significant regional emissions. Additionally, other proposed projects within the Air Basin would also be required to implement the BAAQMD’s Best Management Construction Practices as outlined in Mitigation Measure AIR-1. The proposed project would not result in individually significant impacts and therefore would also not make a cumulatively considerable contribution to regional air quality impacts.

- d) *Expose sensitive receptors to substantial pollutant concentrations?*

Less Than Significant Impact. According to the BAAQMD, a project would result in a significant impact if it would: individually expose sensitive receptors to toxic air contaminants resulting in an increased cancer risk greater than 10.0 in one million, increased non-cancer risk of greater than 1.0 on the non-hazard index (chronic or acute), or an annual average ambient PM_{2.5} increase greater than 0.3 µg/m³. A significant cumulative impact would occur if the project in combination with other projects located within a 1,000 foot radius of the project site would expose sensitive receptors to toxic air contaminants resulting in an increased cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the non-hazard index (chronic or acute), or an ambient PM_{2.5} increase greater than 0.8 µg/m³ on an annual average basis. This section describes the potential impact on sensitive receptors from construction and operation of the proposed project.

During construction, various diesel-powered vehicles and equipment would be in use. In 1998, the ARB identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). The California Air Resources Board (ARB) has completed a risk management process that identifies potential cancer risks for a range of activities using diesel-fueled engines.¹² High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and truck stops) were identified as having the highest associated risk.

Health risks from TACs are a function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of days or perhaps weeks. Additionally, construction-related sources are mobile and transient in nature, and the emissions occur within the project site.

The project construction duration would be 9 months which is relatively short when compared to the lifetime exposure risk of 70-years. Additionally, because the project is a renovation project, it would require limited equipment usage during project construction. Therefore, construction of the project is not expected to result in the exposure of sensitive receptors to substantial pollutant concentrations. Operation of the project would not be a source of substantial pollutant concentrations.

- e) *Create objectionable odors affecting a substantial number of people?*

Less Than Significant Impact. Odors, in contrast to other pollutants, are generally regarded as a nuisance, not a health hazard. Odor impacts arise from siting a new odor source near an existing sensitive receptor (e.g., hospital or residential uses) or siting a new sensitive receptor near an existing odor source. Additionally, construction activity may generate temporary odor impacts. The ability to detect odors depends on the following factors: nature of the odor source (e.g., wastewater treatment plant), frequency of odor generation and intensity of odor, distance of odor source to sensitive receptors, wind direction, and sensitivity of the receptor (e.g., Hospital). The project site would not be considered a sensitive receptor.

¹² California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October.

The project is not located in an area with multiple confirmed odor complaints and once operational, the project itself is not expected to be a source of odors. Therefore, the project would not create objectionable odors affecting a substantial number of people.

IV. BIOLOGICAL RESOURCES.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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 U.S. 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, regulations, or by the California Department of Fish and Wildlife or U.S. 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, etc.) Through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>

Affected Environment

Plant Communities. The entire project site is on filled land and supports no natural plant communities. The majority of the acreage within the site is irrigated turf and unpaved recreational areas, mixed with substantial developed areas and stands of ornamental trees. Developed areas include structures, pavement, and barren or graveled lots. Landscaped margins, medians and fringes within the park lands are well-mulched or ivy-covered when well-maintained but support weedy non-native grassland cover in areas that are not maintained. A map showing vegetation cover types and potential wetland resources on the project site is attached (see Figure 4) and Table B provides a breakdown of plant community acreage in the project area.

Table B: Acreage of Cover Types in the Project Area

Cover Type	Area (acres)
Developed/Hardscape	6.85
Ornamental Trees and Shrubs	5.69
Ruderal/Barren	3.66
Turf and Playfield	16.20
Total	32.40

The most common ornamental trees in the project site are blackwood acacia (*Acacia melanoxylon*) and several species of eucalyptus (*Eucalyptus* spp.). Other trees found on the site include myoporum (*Myoporum laetum*), paperbark melaleuca (*Melaleuca linariifolia*), Canary Island palm (*Phoenix canariensis*), pepper tree (*Schinus molle*), Coast redwood (*Sequoia sempervirens*), poplar, Canary Island pine (*Pinus canariensis*), fruitless mulberry (*Morus alba*), and Chinese pistache (*Pistacia chinensis*). All these trees are planted or are naturalized. LSA found just one native tree, a sapling coast live oak (*Quercus agrifolia*). The wooded parts of the site are often underlain by Himalayan blackberry (*Rubus armeniacus*) and Canary ivy (*Hedera canariensis*). Blackwood acacia, myoporum, Canary ivy, and some species of eucalyptus are considered to be invasive non-native plants that threaten wildlands by the California Invasive Plant Council (CALIPC 2006)¹³.

A thin margin of brackish marsh and riparian herbaceous cover occurs along both banks of the tidal ditch. The most common species in this cover include salt grass (*Distichlis spicata*), marsh gumplant (*Grindelia stricta*), Himalayan blackberry, wild oats (*Avena* sp.), and dallis grass (*Paspalum dilatatum*), along with a mix of less numerous grasses and herbs. One or two small, sparsely distributed patches of bulrush (*Scheonoplectus* sp.) are present on the banks, but there is otherwise little emergent marsh cover. No pickleweed (*Salicornia pacifica*), an important component of salt marsh harvest mouse (*Reithrodontomys raviventris*) habitat, is present in the ditch or elsewhere on site.

Wildlife Use and Habitat Character. The most conspicuous wildlife that use the park are various species of birds. Species that LSA has previously observed on the Martinez shoreline, including in the adjacent brackish marshes and along Alhambra Creek, are mallard (*Anas platyrhynchos*), snowy egret (*Egretta thula*), marsh wren (*Cistothorus palustris*), common yellowthroat (*Geothlypis trichas*), and song sparrow (*Melospiza melodia*). Birds observed in upland areas supporting low ruderal vegetation included various songbirds typical of open disturbed habitats. LSA saw yellow-rumped warbler (*Setophaga coronata*), California towhee (*Melospiza crissalis*), Lincoln's sparrow (*Melospiza lincolnii*), white-crowned sparrow (*Zonotrichia leucophrys*), golden-crowned sparrow (*Z. atricapilla*), and house finch (*Haemorhous mexicanus*). Birds observed in and around the ornamental trees and associated vegetation in Waterfront Park included Nuttall's woodpecker (*Picoides nuttallii*), western scrub jay (*Aphelocoma californica*), oak titmouse (*Baeolophus inornatus*), ruby-crowned kinglet (*Regulus calendula*), western bluebird (*Sialia mexicana*), and northern mockingbird (*Mimus polyglottos*). Eastern fox squirrels (*Sciurus niger*), a non-native mammal, were seen in Waterfront Park and the tracks of northern raccoon (*Procyon lotor*) were seen in the mud along Alhambra Creek. In addition, a number of other wildlife species that inhabit brackish marsh, ruderal habitats, and ornamental planting in Contra Costa County are expected to occasionally occur on the project site.

¹³ Cal-IPC. 2006. California Invasive Plant Inventory. Cal-IPC Publication 2006-02. California Invasive Plant Council: Berkeley, CA. Available: www.cal-ipc.org.



LSA

LEGEND

Study Area

Drainage Swales

Land Cover

Ornamental Trees and Shrubs

Ruderal/Barren

Turf and Playfield

Developed/Hardscape

Tidal Ditch (Regulated Water of the United States)



SOURCE: Aerial Imagery from Contra Costa County (2008).

I:\RDL1301\GIS\Maps\CEQA\Figure 4_Land Cover.mxd (7/12/2016)

FIGURE 4

Waterfront Park, City of Martinez
Contra Costa County, California

Land Cover

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Regulated Waters. The project site consists of developed parkland and recreational facilities that have been constructed on a level fill surface over historic brackish marshes. There are no unfilled marshes within the project site, but such marshes occur within 500 feet of the north and west edges of the project site. The park is not itself subject to tidal flooding, and rainfall is drained by a number of drop inlets and storm sewers, many of which drain to a tidal drainage ditch that crosses the western half of the site. This drainage system has prevented the development of seasonal wetlands within the project boundary. The only components of the drainage system potentially regulated under the Clean Water Act are the drainage ditch and two indistinct drainage swales. These features are depicted on Figure 4.

LSA does not believe the swales would meet federal wetland criteria, nor do they have a bed and bank, so they are unlikely to be regulated under federal or state law.

The drainage ditch begins at a culvert outfall in the southern part of the park and flows straight north across the site. After exiting the northern boundary of the project area the ditch turns sharply westward and is eventually tributary to Alhambra Creek. It is a tidal ditch subject to Clean Water Act regulation as a Water of the United States and to regulation as a tidal channel under Section 10 of the Rivers and Harbors Act. The ditch is also a Water of the State and is subject to California Department of Fish and Wildlife jurisdiction under the California Fish and Game Code.

For federal CWA purposes the width of the ditch is measured at the high tide line and varies from 10 to 12 feet. California Department of Fish and Wildlife jurisdiction under the Fish and Game Code is measured from bank-top to bank-top and varies from 15 to 20 feet wide. The ditch supports only a narrow band of brackish marsh cover on the ditch bank and would therefore be regulated as a non-wetland water.

Occurrence of Special-status Species. Based on, a search of the most recent version of the California Natural Diversity Database (CNDDDB, 2015), and LSA's review of the online database of the Sacramento Office of the U. S. Fish and Wildlife Service (USFWS), LSA's previous surveys in the Martinez area, and on direct surveys of the project area and vicinity by LSA biologists, the following threatened and endangered species do occur or may occur along the Martinez shoreline, in the Martinez marshes, or in Carquinez Strait:

Plants

- Soft bird's-beak (*Chloropyron molle* var. *molle* [*Cordylanthus mollis* ssp. *mollis*])(Federal Endangered, State Rare)
- Delta Tule-Pea (*Lathyrus jepsonii*)(State Rare)

Wildlife

- Ridgway's rail (*Rallus longirostris obsoletus*)(Federal and State Endangered)
- Black rail (*Laterallus jamaicensis coturniculus*)(State Threatened, State Fully-Protected)
- Suisun song sparrow (*Melospiza melodia* ssp. *maxillaris*)(State species of special concern)
- Salt-marsh harvest mouse (*Reithrodontomys raviventris*)(Federal and State Endangered, State Fully-Protected)

- Delta smelt (*Hypomesus transpacificus*)(Federal Threatened, State Endangered)
- Steelhead-Central Valley DPS (*Oncorhynchus mykiss*)(Federal Threatened)
- Steelhead-Central California coast DPS (*Oncorhynchus mykiss irideus*)(Federal Threatened)

All other species identified on the USFWS database or on the CNDDDB were excluded from further analysis by LSA either because their core habitats are not present (e.g., vernal pools, tidal marsh, serpentine grasslands) or the project area is remote from the known ranges for the species.

While all of the species listed above may be found along the Martinez shoreline or in Carquinez Strait, no suitable habitat for any of them exists in the project area. Rails prefer salt marshes dominated by reeds and rushes where there is ample cover and little human disturbance, the Suisun song sparrow is a marsh species, salt marsh harvest mice prefer open expanses of pickleweed dominated salt marsh, Delta smelt prefer the open river and only occasionally venture into tributaries, and the ditch is too shallow and too short to provide meaningful habitat for steelhead. As for plants, soft-bird's beak and Delta tule pea occur in open brackish marshes and would not be found under tree canopy in the largely unvegetated bed of a tidal channel.

Salt Marsh Harvest Mouse Habitat Adjacent to Project Area. Several dredge spoil detention ponds lie immediately to the northeast of the project area, as shown on Figure 4. These ponds generally have little wetland plant cover due to periodic placement of new spoils and therefore have little habitat value for marsh wildlife. The USFWS determined in 2012 however that there was sufficient contiguous pickleweed cover in Pond 2 for that pond to serve as potential salt marsh harvest mouse habitat (USFWS, 2012). This habitat could potentially be affected by light spill from the proposed softball field lighting improvements. The other nearby spoils ponds (Ponds 1a, 1b, and 1c) were not determined by USFWS to be potential SMHM habitat.

Salt-marsh Harvest Mouse Species Account. The salt-marsh harvest mouse (SMHM) inhabits mid- to upper elevations of tidal and diked salt marshes dominated by dense pickleweed. The mice are seldom found in cordgrass, alkali bulrush, or pure stands of salt grass (Shellhammer et al. 1982). Vegetated levees and other grassy upland habitats adjacent to pickleweed marshes are also critical as they provide shelter from predators during high tides and flooding. Salt-marsh harvest mice build nests on the ground among the marsh vegetation or use old nests from ground-nesting birds.

Salt Marsh Harvest Mouse Distribution and Occurrence in the Project Vicinity. The SMHM is endemic to salt-marsh habitats around the San Francisco Estuary (Goals Project 2000; Reid 2006). The *Draft Initial Study and Proposed Mitigated Negative Declaration Martinez Intermodal Project Phase 3: Parking Expansion* (Carter & Burgess 2007) stated that a 1997 study found salt-marsh harvest mice in the marsh north of the park in Martinez Regional Park, but did not provide a citation for the study. There are no CNDDDB occurrences in or adjacent to the park; the closest occurrence (CNDDDB #62) is 1.4 miles to the northeast.

Status of Pond 2. USFWS issued a Biological Opinion in 2012 authorizing the City of Martinez (City) to use Pond 2 for immediate spoils deposit, then issued a revised Biological Opinion in 2014 (2014 BO) allowing for on-going use of Pond 2 for this purpose. The 2014 BO determined that if the City continued to use Pond 2 for spoils deposit as proposed, then SMHM habitat in Pond 2 would be permanently lost:

“If the marina remains open, the City will excavate within all of the upland ponds, including Pond 2, to provide sufficient holding capacity for future maintenance dredging episodes. If excavation in Pond 2 occurs, the 3.8 acres of impact in Pond 2 would constitute a permanent adverse effect on SMHM, and therefore the City proposes to mitigate at a 3:1 ratio resulting in a total of 11.4 acres of restored SMHM habitat.

Assuming the marina remains open, the excavation activities described above would result in the permanent removal of any pickleweed present in Pond 2.”(pg. 3, 2014 BO)

As of August 2015 the City intends to keep the marina open and is proceeding with preliminary drafting of a Martinez Waterfront Master Plan update under the assumption that the marina will remain. As a consequence, the City is presently moving forward with plans to complete the full mitigation requirement specified in the 2014 BO (Joe Enke, City of Martinez, Pers. Comm.).

Discussion

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

Potentially Significant Unless Mitigation Incorporated. Potential impacts to special-status plant and wildlife species are described below.

Special-status Plants. The project will have no effect on soft bird’s-beak or Delta tule pea because there is no suitable habitat for this species in or directly adjacent to the project area. Both species occur in brackish tidal marshes and the only tidal habitat in the project area is the drainage ditch, which has a bed of unvegetated mudflat with only a few scattered marsh plants growing at the high water line. This ditch does not provide suitable habitat for either species.

Special-status Wildlife. There is no habitat in the project area for any of the special-status wildlife species that are known to occur along the Martinez shoreline.

The USFWS has determined that pickleweed cover growing in Spoil Pond 2 to the north of the project area is potential SMHM habitat (USFWS, 2012). Spoil Pond 2 is not in the project area, but lies adjacent to the project area on the north and is near enough to the proposed light standards to be affected by light spillover. This impact is not expected to be significant because the USFWS subsequently approved continued use of Pond 2 for dredge spoils on a schedule that renders the pond of little or no value to SMHM. In 2014 USFWS issued a Biological Opinion authorizing the City to use the spoil ponds north of Waterfront Park to discharge spoils dredged from the Martinez Marina every 3 to 5 years until the year 2032. This usage will render the ponds as unsuitable habitat for SMHM in the future due to periodic removal of plant cover following discharge, drying, and removal of marina spoils. As specified by USFWS in the 2014 BO, the City of Martinez will complete 11.4 acres of salt marsh enhancement within the Martinez marshes as mitigation for disturbance and loss of this habitat.

In addition to the periodic use of Pond 2 rendering the pond unsuitable as habitat for SMHM, several other factors also minimize the potential for degradation of potential SMHM habitat in Pond 2 due to lighting spillover:

- *Low Quality Habitat.* Due to the historic periodic disturbance the pickleweed cover in Pond 2 tends to be young, sparsely distributed, and bordered either by open spoil surface or by levees covered by paths and low profile grasslands. The cumulative effect is that there is very little of the thick marsh cover that the shy SMHM strongly prefers.
- *Short Duration of Lighting.* The lighting is only proposed to allow for use of the softball fields during early evening. All games are scheduled to end before 10:30 pm each night. Sundown is already later in the summer, so in general the lights will only increase daily illumination by 1 to 2 hours.
- *Existing Screening.* Two rows of existing trees are in place between the softball field and Pond #2. These trees would provide only partial screening of Pond #2 from the proposed lighting because the trees are only 20 to 30 feet high and are not planted in a continuous screen.
- *Minimization of Light Spillover.* The City has tasked their lighting contractor with developing a lighting plan that minimizes light spillover from the softball fields to nearby roadways and residential properties, as well as to the adjacent ponds. The final lighting plan would reduce the height of light standards as much as possible and would incorporate lights that can be both focused and shielded to minimize incidental illumination in directions other than directly at the fields.

For these reasons there will be no significant impact to SMHM habitat as a consequence of light spillover from the softball fields into Pond 2.

The marshes north of the spoil disposal ponds are far enough from the softball lighting improvements that light spillover effects would not be substantial in relation to that coming from extant and nearer light sources at the Martinez Marina and at the Amorco Wharf facility to the east. Similarly, the marshes around the mouth of Alhambra Creek would be affected more by existing marina lights, Amtrak Station parking lot lighting, and other surrounding light sources than by the more remote softball fields.

Fish and Game Code and Migratory Bird Treaty Act. Native or migratory birds and other wildlife not protected under the state or federal Endangered Species Acts are still protected under the California Fish and Game Code and under the federal Migratory Bird Treaty Act. The project area provides habitat for few species, but nesting birds could be affected by the planned removal of trees on the project site.

Mitigation Measure BIO-1: A qualified biologist shall conduct a nesting survey of all trees scheduled for removal within the nesting season (generally recognized by the California Department of Fish and Wildlife as falling between February 15 and September 15) prior to tree removal. If active nests are located within trees scheduled for removal, tree felling or pruning will be postponed until the young have fledged and are capable of flight or until felling has been approved by the California Department of Fish and Wildlife.

- b) *Would the project 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 Game or U.S. Fish and Wildlife Service?*

Potentially Significant Unless Mitigation Incorporated. With the exception of the riparian habitat along the central drainage ditch, no sensitive communities occur in the project area. The project does not propose to remove any riparian cover *in toto* but will remove five individual riparian trees to accommodate proposed improvements. These trees are all non-natives and include two eucalyptus, two myoporum, and one black acacia. Among these trees the eucalyptus are large enough to have canopy that overhang the edge of the bank.

Mitigation Measure BIO-2: Any tree of greater than 6 inches diameter at breast height whose canopy overhangs the drainage ditch limits will be considered riparian, regardless of species or condition. The ditch limits are defined as the top-of-bank on each side of the ditch. The City will re-plant all removed riparian trees with native oak, bay, willow, poplar, elder or sycamore at a 1:1 ratio. All re-planted riparian trees will be placed within 20 feet of top of bank of the ditch.

- c) *Would the project have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Potentially Significant Unless Mitigation Incorporated. The project will involve re-surfacing of a path that crosses the central drainage ditch over an existing culvert. This work can be completed without any intrusion into Waters of the United States or Waters of the State.

Mitigation Measure BIO-3: A qualified biologist will mark the top of bank in the vicinity of the path re-surfacing. This limit will be delimited with silt fabric fencing. The fencing will be intended to both prevent construction related contaminants from entering the ditch and to provide a visual reminder to contractors of the prohibition from encroaching in regulated waters

- d) *Would the project 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?*

No Impact. The proposed project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or migratory wildlife corridors, or impede the use of wildlife nursery sites. Impacts to the one drainage on the project site are avoided, and no native resident or migratory wildlife species use the park either as a dispersal corridor or nursery site.

- e) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

No Impact. The proposed project would not conflict with local policies or ordinances protecting biological resources. The City's municipal code includes a tree ordinance that only governs trees on private property¹⁴. There is no City ordinance or policy that governs city-owned trees.

As part of the proposed project, 144 trees would be removed with a diameter at breast height (DBH) of at least four inches. Approximately 43 of these trees are diseased, unhealthy, or have poor structure. The majority of trees to be removed are non-native species, including myoporum, eucalyptus, and black acacia. A total of three oak trees would be removed ranging in diameter from 3 inches to 12 inches. As part of the proposed project, approximately 260 new trees would be planted. Proposed trees would be drought and salt-tolerant native and non-native species, including sugar gum (*Eucalyptus cladocalyx*), raywood ash (*Fraxinus angustifolia*), paperbark (*Melaleuca quinquenervia*), New Zealand Christmas tree (*Metrosideros excelsus*), fruitless olive (*Olea europaea*), Aleppo pine (*Pinus halepensis*), Chinese pistache (*Pistacia chinensis*), Nevada fruitless cottonwood (*Populus fremontii*), black poplar (*Populus nigra*), California live oak (*Quercus agrifolia*), and Peruvian pepper (*Schinus molle*). Among the proposed new trees, 50 oaks would be planted along the existing ditch and among the family picnic areas.

As the City's tree ordinance does not apply and replacement trees would be planted as part of the proposed project, the proposed project would not conflict with any local policies or ordinances protecting biological resources.

- f) *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan?*

No Impact. 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.

¹⁴ Chapter 8.12 of the Martinez Municipal Code, Preservation of Trees on Private Property – Preservation, Protection and Removal.

V. CULTURAL RESOURCES.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Affected Environment

LSA conducted background research, a brief pedestrian field review, and a preliminary paleontological sensitivity assessment to identify potential cultural resource constraints for the Waterfront Park Renovation Master Plan. The study area for this summary includes most of the approximately 31-acre Waterfront Park, Martinez, Contra Costa County, California. This summary was prepared by LSA Associate/Archaeologist and Architectural Historian Neal Kaptain, M.A., RPA. This summary does not include an evaluation of the eligibility of Waterfront Park or any of its elements for inclusion in the California Register of Historical Resources pursuant to California Environmental Quality Act (CEQA) Guidelines §15064.5. It is based on archival research and qualitative observations.

Background Research. Background research consisted of a records search and a review of materials provided by the City of Martinez. In addition, the Native American Heritage Commission (NAHC) in Sacramento was requested to review their Sacred Lands File for any cultural resources that might be listed within Waterfront Park. In a fax to LSA dated November 12, 2013, the NAHC stated that “A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area.”

On November 4, 2013, LSA conducted a records search of the park at the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park. The NWIC is the official state repository of cultural resource records and reports for Contra Costa County.

As part of the records search, the following federal and state inventories were reviewed:

- *California Inventory of Historic Resources* (California Department of Parks and Recreation 1976);
- *Five Views: An Ethnic Historic Site Survey for California* (California Office of Historic Preservation 1988);
- *California Points of Historical Interest* (California Office of Historic Preservation 1992);
- *California Historical Landmarks* (California Office of Historic Preservation 1996);

- *Directory of Properties in the Historic Property Data File* (California Office of Historic Preservation, April 5, 2012). The directory, updated quarterly, includes the listings of the National Register of Historic Places, National Historic Landmarks, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest.

The records search and inventory review did not identify any previously recorded cultural resources in the park.

Preliminary Paleontological Sensitivity Assessment. Geologically, the study area is mapped as “Quaternary Holocene Bay Mud” (Helley and LaJoie 1979). Sediments of the Holocene Epoch (11,500 year ago to present) are too young to contain fossil resources. The study area is not paleontologically sensitive.

Field Review. On November 1, 2013, LSA Archaeologist and Architectural Historian Neal Kaptain, M.A., RPA, conducted a pedestrian field review of the study area to identify landscape and built environment elements that are integral to the park’s original design and aesthetic, as well as its current use. The review was documented with field notes and photographs.

Built Environment Park Features. Waterfront Park consists of reclaimed land adjacent to downtown Martinez and the Union Pacific railroad right-of-way to the south. The Sacramento River is to the north. Review of topographic maps indicates that fill was imported to the property starting in the early 1950s and that the levees visible in the park today were constructed during the 1960s and later. According to Richard Patchin, Contra Costa County Historical Society member, construction of the park began in the 1970s, the Bocce Courts were constructed in the 1980s and 1990s, and the playground was constructed in 2003 (Patchin 2013).

The following categories reflect the elements that traditionally convey a sense of order, design, and spatial organization to designed landscapes such as Waterfront Park:

Existing Topography and Grading

- Bayshore marshlands built up with imported fill
- Levees in and around the study area
- Channelized creek flowing northerly through the center of the study area

Natural Features

- The study area is a man-made landscape

Land Uses

- Picnic areas
- Playground
- Bocce courts
- Multi-use/practice ball fields
- Open grassy areas for recreation, repose, open space

- Baseball/softball diamond complex
- Horseshoe pits
- Skateboarding facility (not within the study area)

Circulation

- Entry is along southern and western perimeter of study area
- Asphalt sidewalks throughout study area
- Parking lots

Views and Vistas

- Hills surrounding Martinez
- Martinez downtown

Vegetation

- Eucalyptus trees and other ornamental trees and shrubs
- Turf lawns

Landscape Dividers

- Channelized creek with associated trees and shrubs
- Fence around baseball/softball complex
- Raised berms
- Hedges

Site Furnishings

- Picnic tables
- Shade structures
- Playground equipment (swing sets, slides, etc.)
- Baseball/softball diamonds with fences, bleachers, and concession/restroom
- Bocce complex
- Restroom near Bocce complex
- Multi-use/practice ball fields
- Horseshoe pits
- Parking lots
- Skateboarding facility (not within the study area)

Lighting

- The foundations for the proposed baseball field lights may extend into undisturbed soils beneath imported fill. Undisturbed soils along San Francisco Bay and the Carquinez Straits may contain

buried pre-historic archaeological cultural resources. Excavation for the foundations may impact such cultural resources.

Buildings

- Baseball/softball concession /restrooms
- Restroom
- Tot play area
- Bocce complex restrooms
- Bocce complex concession stand

Signs

- Conventional park signage regarding rules and regulations

Bodies of Water

- Channelized creek

Discussion

- a) *Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?*

Potentially Significant Unless Mitigation Incorporated. The Martinez Waterfront Park has not been previously identified as a historical resource as defined in California Public Resources Code Section 21084.1. The landscape elements identified above were observed during the field review and appear to comprise the public space, facilities, and appurtenances that define the form, function, and appearance of the park. The proposed improvements would not result in a change to the character of the Martinez Waterfront Park, the way it is perceived by its visitors, and the means by which it is utilized as a recreational amenity.

Excavation for the light foundations may impact buried prehistoric archaeological cultural resources, which have been recorded in near-bayshore locations around the San Francisco Bay, Suisun Bay, and portions of the Carquinez Strait. Additionally, project activities during phases of the project that *are not* monitored may encounter archaeological deposits. Based on the significance criteria identified above, the project would have a significant impact on the environment if these ground-disturbing activities cause a substantial adverse change in the significance of an archaeological cultural resource that qualifies as a historical resource. A substantial adverse change in the significance of an archaeological deposit that qualifies as such would occur from its demolition, destruction, relocation, or alteration such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5(b)(1)). Implementation of the following mitigation measures will reduce the level of this potential impact to less than significant due to the scientific recovery of data consequential to the understanding of the history and prehistory of the Martinez area.

Mitigation Measure CULT-1: During excavation of the light foundations, a qualified archaeologist shall monitor project ground-disturbing activities to identify potential impacts to intact archaeological deposits. The monitor shall be empowered to halt excavation at the

location of a discovery to review possible archaeological material and to protect the resource while the finds are being evaluated. Monitoring shall continue until, in the archaeologist's judgment, cultural resources are not likely to be encountered. Should archaeological deposits be identified during monitoring, the archaeological monitor shall, in consultation with the City, evaluate the deposits for their eligibility for listing in the California Register of Historical Resources. If the deposits are not eligible, mitigation is not necessary. If the deposits are eligible, adverse effects on the deposits shall be mitigated. Mitigation may include excavation of the archaeological deposit in accordance with a data recovery plan (see *CEQA Guidelines* Section 15126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; preparation of a report detailing the methods, findings, and significance of the archaeological site and associated materials; and accessioning of archaeological materials and a technical data recovery report at a curation facility.

Upon completion of the assessment, the archaeologist shall prepare a report to document the methods and results of the assessment. The report shall be submitted to the City and the Northwest Information Center at Sonoma State University upon completion of the resource assessment.

Mitigation Measure CULT-2: If archaeological materials are encountered during project activities that *are not* archaeologically monitored, all work within 25 feet of the discovery shall be redirected until the archaeologist assesses the finds, consults with the City, and makes recommendations for the treatment of the discovery. If avoidance of the archaeological deposit is not feasible, the archaeological deposits shall be evaluated for their eligibility for listing in the California Register of Historical Resources. If the deposits are not eligible, mitigation is not necessary. If the deposits are eligible, adverse effects on the deposits shall be mitigated. Mitigation may include excavation of the archaeological deposit in accordance with a data recovery plan (see *CEQA Guidelines* Section 15126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; preparation of a report detailing the methods, findings, and significance of the archaeological site and associated materials; and accessioning of archaeological materials and a technical data recovery report at a curation facility.

Upon completion of the assessment, the archaeologist shall prepare a report to document the methods and results of the assessment. The report shall be submitted to the City, and the Northwest Information Center at Sonoma State University upon completion of the resource assessment.

- b) *Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

Potentially Significant Unless Mitigation Incorporated. Excavation for the light foundations may impact buried prehistoric archaeological cultural resources, which have been recorded in near-bayshore locations around the San Francisco Bay, Suisun Bay, and portions of the Carquinez Strait. Based on the significance criteria identified above, the project would have a significant impact on the environment if these ground-disturbing activities cause a substantial adverse change in the significance of an archaeological cultural resource that qualifies as a unique

archaeological resource. A substantial adverse change in the significance of a unique archaeological resource would occur from its demolition, destruction, relocation, or alteration such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5(b)(1)).

The implementation of **Mitigation Measures CULT-1 and -2**, described previously, will reduce the level of this potential impact to less than significant due to the scientific recovery of data consequential to the understanding of the history and prehistory of the Martinez area.

- c) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

No Impact. Geologically, the study area is mapped as “Quaternary Holocene Bay Mud” (Helley and LaJoie 1979). Sediments of the Holocene Epoch (11,500 year ago to present) are too young to contain fossil resources. The study area is not paleontologically sensitive. Therefore, implementation of the proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

- d) *Disturb any human remains, including those interred outside of formal cemeteries?*

Potentially Significant Unless Mitigation Incorporated. Excavation for the light foundations may impact buried prehistoric archaeological cultural resources, which have been recorded in near-bayshore locations around the San Francisco Bay, Suisun Bay, and portions of the Carquinez Strait. Prehistoric archaeological sites in this area are known to contain Native American skeletal remains. Although no such remains have been identified within the project sites, there is a possibility of encountering such remains, either in isolation or with prehistoric archaeological deposits. Such remains could be uncovered during project ground-disturbing activities. Based on the significance criteria identified above, the project would have a significant effect on the environment if it would disturb human remains, including those interred outside of formal cemeteries. Implementation of the following mitigation measure would reduce the level of this potential impact to less than significant through the respectful and statutorily defined procedures intended to treat the remains of Native American extraction with regard to the sensibilities and input of descendant communities.

Mitigation Measure CULT-3: Any human remains encountered during project ground-disturbing activities shall be treated in accordance with California Health and Safety Code Section 7050.5. The City shall inform its contractor(s) of the sensitivity of the project sites for human remains by including the following directive in contract documents:

“If human remains are uncovered, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted (if one is not already on site) to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains or associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.”

VI. GEOLOGY AND SOILS.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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 waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Affected Environment

A geotechnical investigation¹⁵ was conducted, which included a geologic reconnaissance of the project site, review of soil and geologic maps of the area, drilling and sampling of geotechnical borings, laboratory testing of selected samples, and development of geotechnical design parameters for the foundation system for proposed light standards and concrete flatwork. The following summarizes the results of the geotechnical investigation.

The project site is located within the Diablo Range of the Coast Ranges Geomorphic Province. The portion of Contra Costa County in which the project site is located is comprised of a complex sequence of Mesozoic and Cenozoic age sedimentary and volcanic rocks. The bedrock materials comprising this portion of the Diablo Range have been extensively folded and faulted as a result of regional tectonic forces. As a consequence, geological relationships are often complex, and individual bedrock units are locally tightly folded, faulted, sheared, and overturned.

¹⁵ Cal Engineering & Geology (CE&G), 2014. Subsurface Exploration for Martinez Waterfront Park Improvements, APN 373040006, Court (N) Street, Martinez, California. 7 January.

The generalized bedrock geology of the greater Martinez area has been mapped by a number of geologists, which indicate that the project site is underlain by deposits of younger Bay Mud.

Borings conducted as part of the geotechnical investigation revealed that the project site is underlain by a few feet of manmade undocumented artificial fill, consisting of a variable mixture of lean clay, silty clay, gravely peat, and clayey silt. The undocumented fill is underlain by alluvial soils (younger bay mud). These soil materials are composed of an interbedded sequence of soft fat clay, elastic silt, silty sand, and lean clay. The thickness of the younger Bay Mud deposits increases to the north toward the river margin. The younger Bay Mud is underlain by older alluvial deposits locally called older Bay Mud. The older Bay Mud deposits consist of an interbedded sequence of firm to hard, lean clay, sandy silt, silty sand, and elastic silt.

Surficial soils in the project area have been mapped as the Clear Lake Clay series in the northwestern portion of the project site and the Alo Clay series for 15 to 30 percent slopes in the southeastern portion of the project site. These soils are found in coastal valleys and form in fine-textured alluvium. The soils of the Clear Lake Clay series and Alo Clay series classify as clays of medium plasticity (CL), which have a high shrink-swell potential.

Groundwater was encountered in soil borings at depths ranging between 2.5 and 12.5 feet.

Discussion

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.*

No Impact. Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. The location of surface rupture generally can be assumed to be along an active or potentially active major fault trace. The project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone; the potential for fault rupture at the site is low. Therefore, the proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving the rupture of a known earthquake fault.

ii) *Strong seismic ground shaking?*

Less Than Significant Impact. The project site and the entire San Francisco Bay Area is in a seismically active region subject to strong seismic ground shaking. Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground-shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The Concord-Green Valley fault system has been mapped approximately 5 kilometers (km) (3 miles) from the project site. Other nearby active fault systems, which could induce strong ground shaking at the site include: the

Hayward (18 km west), Calaveras (20.5 km southeast), West Napa (18 km northwest), and Rodgers Creek (19.5 km northwest) faults. A large magnitude earthquake on any of these fault systems has the potential to cause significant ground shaking at the site.

The most significant adverse impact associated with strong seismic shaking is potential damage to structures and improvements. No habitable structures would be constructed as part of the proposed project; however, implementation of proposed improvements could increase the use of the project site. The geotechnical investigation includes recommendations for seismic design parameters, light standard foundations, concrete slabs on-grade, site grading, excavation and trenches, subsurface drainage, and geotechnical design review. In addition, the proposed project would be designed and constructed consistent with the most current version of the California Building Code (CBC), which includes specifications for site preparation such as compaction requirements for foundations. Therefore, with incorporation of geotechnical recommendations, compliance with building code requirements, and oversight by a California licensed engineer, the potential impacts associated with ground shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction is the transformation of saturated, loose, fine-grained sediment to a fluid-like state because of earthquake shaking or other rapid loading. Soils most susceptible to liquefaction are loose to medium dense, saturated sands, silty sands, sandy silts, non-plastic silts and gravels with poor drainage, or those capped by or containing seams of impermeable sediment. The five deep borings revealed the presence of about 2 feet of poorly graded sand and poorly graded sand with silt in two of the five borings. These discontinuous layers were located at the transition between the young Bay Mud deposit and older bay deposits. As these deposits are below the groundwater level and have moderately low blow counts,¹⁶ the potential for liquefaction of the discontinuous sand deposits underlying the site is moderate.

As described above, no habitable structures would be constructed as part of the proposed project; however, proposed improvements (e.g., light standards, concession improvements) could be at risk from seismic-related ground failure. According to the geotechnical investigation, potentially liquefiable material was only encountered in two of the five bore holes and was limited to a zone roughly 2 feet thick. Additionally, the only structures being constructed are the light standards, which would be supported on piles embedded in non-liquefiable material. The geotechnical investigation recommends that light standards be supported on piles embedded in non-liquefiable material, in order to reduce the potential for damage as a result of liquefaction-related phenomena. Recommendations for concrete slabs-on-grade and other project features are also included in the geotechnical investigation. With implementation of the recommendations included in the geotechnical investigation and compliance with CBC requirements, impacts associated with liquefaction would be less than significant.

¹⁶ The blow count provides an indication of the density of the ground. Low blow counts indicate loose, weak soils, and a weak foundation may be assumed.

iv) Landslides?

No Impact. The project site is essentially flat; therefore, the potential for landslide is low. The project would not result in any new habitable structures and therefore would not expose people or structures to potential substantial adverse effects from landslides.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. As described above, the erosion potential of the soils at the project site is low. However, construction activities have the potential to disrupt soil and cause erosion. Construction specifications require the preparation of a Stormwater Pollution and Prevention Plan (SWPPP) prior to any ground disturbance activities as required by the National Pollutant Discharge Elimination System (NPDES) General Permit (GP) for Construction (Order 2009-009-DWQ). The SWPPP will provide the details of the erosion control measures to be applied on the project site during the construction period, including Best Management Practices (BMPs) for erosion control that are recognized by the Regional Water Quality Control Board (RWQCB). Implementation of a SWPPP would reduce potential impacts to soil erosion or the loss of topsoil to a less than significant level.

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?

Less Than Significant Impact. As described above, the potential for hazard from landslide is low, but the potential for liquefaction is moderate. Lateral spreading is a type of ground instability that results in ground displacements that occur when liquefaction of a soil layer causes insufficient strength for lateral stability. This phenomenon can occur when either the ground surface or the soil layer subject to liquefaction is sloped, or when there is an open slope face or stream channel adjacent to a potentially liquefiable soil layer. On the north side of the project site, the softball/soccer field is at a higher elevation than the other four fields. A drainage ditch runs north-south through the park. At these locations, it is possible that liquefaction could result in some observable distress due to earthquake.

Seismically-induced ground shaking can cause vertical subsidence of specific types of soils. Seismically-related settlement generally results from the densification of loose sand and sandy silts due to vibrations or liquefaction. Due to the nature of the majority of the soils on the project site, the potential for seismically-induced subsidence is low.

The project site is not located on Karst formations and has not been subjected to mining activities; thus, the risk of subsidence or collapse is expected to be low. The proposed project would be designed and constructed with adequate foundations and bedding in accordance with the CBC and standard engineering practices to address the possible effects of unstable soils. No significant geologic hazards to the proposed project from landslide, lateral spreading, subsidence, liquefaction, or collapse would occur. This impact would be less than significant.

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?

Less Than Significant Impact. Expansion and contraction of volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. Expansive soils are common throughout California and can cause damage to foundations and slabs unless properly treated during construction. Standard construction methods would be employed including appropriate selection of backfill materials that do not exhibit expansive behavior. Therefore, impacts associated with expansive soils would be less than significant.

- e) *Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

No Impact. No septic tanks or alternative wastewater disposal systems are proposed as part of the park renovation project. Therefore, implementation of the proposed project would not result in impacts to soils associated with the use of such wastewater treatment systems. This impact would be less than significant.

VII. GREENHOUSE GAS EMISSIONS.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Affected Environment

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of greenhouse gases (GHGs) that contribute to global climate change have a broader global impact. Global climate change is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere. The principal GHGs contributing to global climate change are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated compounds. These gases allow visible and ultraviolet light from the sun to pass through the atmosphere, but they prevent heat from escaping back out into space. Among the potential implications of global climate change are rising sea levels, and adverse impacts to water supply, water quality, agriculture, forestry, and habitats. In addition, global warming may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health. Like most criteria and toxic air pollutants, much of the GHG production comes from motor vehicles. GHG emissions can be reduced to some degree by improved coordination of land use and transportation planning on the city, county and subregional level, and other measures to reduce automobile use. Energy conservation measures can also contribute to reductions in GHG emissions.

The *BAAQMD CEQA Guidelines*, recommend that all GHG emissions from a project be estimated, including a project's direct and indirect GHG emissions from operations. As described further below, Long-term operation of the proposed project would generate GHG emissions from area and mobile sources, and indirect emissions from sources associated with energy consumption. Mobile-source emitters of GHGs would include project-generated vehicle trips associated with visitor trips to the project site. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site, and other sources. The project applicant proposed to use LED lighting on pathways that would contribute to a reduction in energy-related GHG emissions.

The BAAQMD does not have an adopted Threshold of Significance for construction-related GHG emissions. However, BAAQMD recommends that the Lead Agency quantify and disclose GHG emissions that would occur during construction, and make a determination on the significance of these construction generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals. The Lead Agency is encouraged to incorporate best management practices, such as recycling at least 50 percent of construction waste or demolition materials, to reduce GHG emissions during construction, as applicable.

The primary existing sources of human-caused GHGs in the project area are vehicle emissions.

Discussion

- a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?*

Less Than Significant Impact. The following section describes the proposed project's operational and construction related greenhouse gas (GHG) emissions and contribution to global climate change. While, as stated above, the BAAQMD has not addressed emission thresholds for construction, the District encourages quantification and disclosure. Thus, construction emissions are discussed in this section.

Construction Activities. Construction activities, such as site preparation, site grading, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting the construction crew would produce combustion emissions from various sources. During construction of the project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄, and N₂O. Furthermore, CH₄ is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

The project would renovate the existing park, which would require much less equipment usage than building a new park. Renovation includes replacing existing paths for ADA accessibility, improvements to field drainage by grading and soil improvement, new turf, modifications to the existing concession area for ADA compliance, improved irrigation at the soccer fields, and new asphalt pavement in the parking area, among other improvements. Therefore, construction emissions would not be considered significant.

Operational Emissions. Long-term operation of the proposed project would generate GHG emissions from area and mobile sources, and indirect emissions from sources associated with energy consumption. Mobile-source emitters of GHGs would include project-generated vehicle trips associated with visitor trips to the project site. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site, and other sources. The project applicant proposes to use LED lighting on pathways that would contribute to a reduction in energy-related GHG emissions.

Following guidance from the BAAQMD, GHG emissions were estimated using CalEEMod. Table C shows the calculated GHG emissions for the existing uses on the site and for the proposed project. Motor vehicle emissions are the largest source of GHG emissions for the project at approximately 71 percent of the total. Combined water use is the next largest category at nearly 27 percent of CO₂e emissions. Solid waste is about 2 percent of the total emissions. Additional calculation details are provided in Appendix B. Other area sources, including landscape equipment, and energy use are the remaining source of GHG emissions and would comprise less than 1 percent of the total emissions for the project.

Table C: GHG Emissions in Metric Tons Per Year

Emissions Source	Project Operational Emissions				Percent of Total
	CO ₂	CH ₄	N ₂ O	CO ₂ e	
Mobile	41.8	0.0	0.0	41.9	71
Area Sources	0.0	0.0	0.0	0.0	0
Energy	0.0	0.0	0.0	0.0	0
Waste	0.5	0.0	0.0	1.1	2
Water	15.9	0.0	0.0	16.0	27
Total Project Emissions				59.0	100

Note: Column totals may vary slightly due to independent rounding of input data.

Source: LSA Associates, Inc., 2015.

Model results indicate the project would generate approximately 59.0 metric tons per year CO₂e. The GHG emissions would not exceed the BAAQMD significance criteria of 1,100 metric tons CO₂e per year. Therefore, the project would not generate GHG emissions that would have a significant effect on the environment.

- b) *Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?*

Less Than Significant Impact. The California Climate Action Team (CAT) and the California Air Resources Board (ARB) have developed several reports to achieve the State’s GHG targets that rely on voluntary actions of California businesses, local government and community groups, and State incentive and regulatory programs. These include the CAT’s 2006 “*Report to Governor Schwarzenegger and the Legislature,*” ARB’s 2007 “*Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California,*” and ARB’s “*Climate Change Scoping Plan: a Framework for Change.*” The reports identify strategies to reduce California’s emissions to the levels proposed in Executive Order S-3-05 and AB 32.

The adopted Scoping Plan includes proposed GHG reductions from direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as cap-and-trade systems.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed ARB to identify a list of “discrete early action GHG reduction measures” that can be adopted and made enforceable by January 1, 2010. In June 2007 ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on High Global Warming Potential Refrigerants, and Landfill Methane Capture). Discrete early action measures are measures that are required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code (HSC) Section 38560.5. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures.

ARB’s focus in identifying the 44 early action items was to recommend measures that ARB staff concluded were “expected to yield significant GHG emission reductions, are likely to be cost-effective and technologically feasible.” The combination of early action measures is estimated to reduce Statewide GHG emissions by nearly 16 million metric tons (MMT). Accordingly, the 44

early action items focus on industrial production processes, agriculture, and transportation sectors. Early action items associated with industrial production and agriculture do not apply to the proposed project. The transportation sector early action items such as truck efficiency, low carbon fuel standard, proper tire inflation, truck stop electrification and strengthening light duty vehicle standards are either not specifically applicable to the proposed project or would result in a reduction of GHG emissions associated with the project. State measures include emission reductions assumed as part of the Scoping Plan, including light-duty vehicle GHG standards (“Pavley standards”), low carbon fuel standard, and energy efficiency measures. Both the AB 32 Scoping Plan and the City of Martinez’s Climate Action Plan (CAP) relate to actions that the State and City will take, like proposing new regulations, or actions that the State and City will encourage on a voluntary basis. Thus, the AB 32 Scoping Plan and CAP are not directly applicable to the proposed project and the proposed project would not conflict in any way. Moreover, the project is consistent with and would further the goals of reducing GHG emissions.

The project reorganizes existing fields and improves parking and lighting. The park is located approximately 0.4 miles from the Martinez Amtrak station and approximately 0.4 miles from the Country Connection bus station located on Marina Vista Avenue and Court Street. The proposed project is located within 1.0 mile of restaurants and shops located on Main Street in Martinez which would be consistent with the Climate Action Plan to reduce vehicle miles traveled and promote alternative modes of transportation.

Additionally, in developing the threshold of significance for GHG emissions, the BAAQMD identified the emissions level for which a project would conflict with existing California legislation adopted to reduce Statewide GHG emissions. As indicated in the analysis presented above, the proposed project would not exceed the project level significance criteria established by the BAAQMD and, therefore, the proposed project would not conflict with plans adopted for the purpose of reducing GHG emissions.

VIII. HAZARDS.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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 1/4 mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>

Affected Environment

The project area consists of the existing Martinez Waterfront Park, a 31-acre park in northern Martinez. The existing park is located on state land granted via lease to the City via the East Bay Regional Parks District. The project site is bordered to the north by the Martinez Marina and the Carquinez Strait, to the west by Martinez Regional Shoreline and light industrial uses, to the south by Joe DiMaggio Drive and the railroad tracks and to the east by heavy industrial uses. A variety of land uses are located further south of Joe DiMaggio Drive including commercial, residential, and heavy industrial uses.

The project site is not on a state-listed hazardous materials clean-up site. According to the California State Water Resources Control Board (SWRCB) Geotracker website¹⁷, no state-listed hazardous materials clean-up sites are located within 1,000 feet of the project site. According to the California

¹⁷ State Water Resources Control Board, 2015. Geotracker website. Available at: <http://geotracker.waterboards.ca.gov/> (Accessed July 22, 2015).

Department of Toxic Substances Control (DTSC) EnviroStor website,¹⁸ no listed hazardous sites are within 1,000 feet of the project site.

Groundwater flow in this area is generally north-northeast toward San Francisco Bay. All of these open sites are located east of the project site. The proposed project is not located down gradient from these hazardous materials sites; therefore, these hazardous sites are not expected to impact the proposed project.

Discussion

- a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Less Than Significant Impact. The proposed project would improve an existing park. After project construction, no routine transport or disposal of hazardous materials would be associated with the proposed project.

While gas and diesel fuel would typically be used by construction vehicles, Best Management Practices (BMPs) would be utilized to ensure that no construction-related fuel hazards occur. Use, storage, transport and disposal of hazardous materials (including any hazardous wastes) during construction activities would be performed in accordance with existing local, state, and federal hazardous materials regulations. Therefore, implementation of the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. This impact is considered less than significant.

- 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?*

Less Than Significant Impact. As described in Section VII(a) above, operation of the project would not require routine use of hazardous materials; therefore, no hazards or hazardous materials impacts related to long term operation of the project are anticipated. Construction activities would include the use of limited quantities of ordinary equipment fuels and fluids. However, these materials would not be used in sufficient quantities to pose a threat to human or environmental health. Such materials would be kept at construction staging areas, and would be secured when not in use. In the unlikely event of a spill, fuels would be controlled and disposed of in accordance with applicable regulations. Therefore, development of the proposed project would not create a significant hazard to the public or environment. This impact is considered less than significant.

- c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1/4 mile of an existing or proposed school?*

No Impact. The project site is not located within ¼ mile of an existing or proposed school. The nearest public school to the project site is Martinez Junior High School, located at 1600 Court Street, approximately 0.5 mile of the project site. St. Catherine of Siena, a private preK-8 school

¹⁸ Department of Toxic Substances Control, 2007. EnviroStor website:
<http://www.envirostor.dtsc.ca.gov/public/> (Accessed July 22, 2015).

is located at 604 Mellus Street, approximately 0.43 mile from the project site. Therefore, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school.

- 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?*

No Impact. The project site is not included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?*

No Impact. The project site is not located within an airport land use plan, or within two miles of a public airport or public use airport. The closest airports to the project site are the Buchanan Field Airport, approximately 6 miles southeast and the Napa County Airport, approximately 15 miles northwest. Therefore, the proposed project would not result in a safety hazard for people residing or working in the project area.

- f) *For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*

No Impact. The project site is not in the vicinity of a private airstrip. Therefore, implementation of the proposed project would not expose persons to airport-related hazards.

- g) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

No Impact. The proposed project would improve an existing recreational facility, located in the City of Martinez. It is not located along an identified evacuation route, nor would it affect local roadways. The proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan.

- 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?*

No Impact. The project site is located in an area of low/moderate wildland fire threat.¹⁹ Implementation of the proposed project would not change the degree of exposure to wildfires, because no new housing or businesses would be constructed. Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires.

¹⁹ Association of Bay Area Governments, 2015. ABAG Resilience Program Natural Hazards Mapping. Available online at: <http://gis.abag.ca.gov/website/Hazards/?hlyr=wildfireThreat> (Accessed July 22, 2105).

IX. HYDROLOGY AND WATER QUALITY.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 which 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 which 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 of as a result of the 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"/>

Affected Environment

The State Water Resources Board and nine Regional Water Quality Control Boards regulate water quality of surface water and groundwater bodies throughout California. In the Bay Area, including the project site, the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) is responsible for implementation the Water Quality Control Plan (Basin Plan).²⁰ The Basin Plan establishes beneficial water uses for waterways and water bodies within the region.

²⁰ San Francisco Bay Regional Water Quality Control Board (RWQCB), 2015. San Francisco Bay Region, San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan), incorporating all amendments as of March 2015.

The nearest mapped surface water bodies to the project site are Alhambra Creek and the Carquinez Strait, located approximately one-quarter mile west and north of the project site, respectively. Alhambra Creek originates in the Briones Hills and flows approximately six miles to the north, emptying in the Carquinez Strait. The Alhambra Creek watershed is approximately 16.5 square miles in area and includes the project site.²¹

Approximately 750 linear feet of a man-made ditch is located on the project site (Figure 4). About 60 feet of the ditch is underground within a concrete pipe. The ditch was created in the early twentieth century when the project vicinity was filled for use as an airport. City staff has indicated that the water in the ditch appears to be tidally influenced, which suggests a hydraulic connection to the Carquinez Strait.

The project site is located within the Arroyo del Hambre Valley Groundwater Basin.²² The Basin Plan identifies municipal, industrial, and agricultural water supply as potential beneficial uses of groundwater within the basin. The City of Martinez does not currently use groundwater for municipal supply, but relies on treated water from the Delta.

Discussion

a) *Violate any water quality standards or waste discharge requirements?*

Potentially Significant Unless Mitigation Incorporated. The primary water quality concern for the project is the potential for stormwater runoff, contaminated with urban pollutants such as oil and grease from parked vehicles and landscaping and maintenance chemicals, to affect surface water resources such as Alhambra Creek and the Carquinez Strait.

Runoff water quality is regulated by the National Pollutant Discharge Elimination System (NPDES) Program (established through the federal Clean Water Act). The NPDES program objective is to control and reduce pollutant discharges to surface water bodies. Compliance with NPDES permits is mandated by State and federal statutes and regulations.

As the project site is greater than one acre in area, construction of the project would be subject to the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activity (Construction General Permit). Under the Construction General Permit, preparation of a Storm Water Pollution Prevention Plan (SWPPP) for the site would be required. The SWPPP would include BMPs for erosion and sediment control, site management/housekeeping/waste management, management of non-stormwater discharges, run on and runoff controls, and BMP inspection/maintenance/repair activities, as consistent with the most recent version of the California Stormwater Quality Association Stormwater Best Management Handbook-Construction.

Based on the size and nature of the project, the project would be subject to the current Regional Water Board's Municipal Regional Permit (MRP), implemented in October 2009 by Order R2-2009-0074. Provision C.3 of the MRP addresses new development and redevelopment projects. Chapter 15.06 of the City of Martinez Municipal Code, "Stormwater Management and Discharge

²¹ Alhambra Creek Watershed Planning Group, 2001. Alhambra Creek Watershed Management Plan. April.

²² California Department of Water Resources (DWR), 2004. Bulletin 118, California's Groundwater. February.

Control,” requires compliance with the MRP and other stormwater requirements at the project site, administered and enforced by the City Engineering Department, Clean Water Program. The City Clean Water Program is a member of the Contra Costa County Clean Water Program (CCCCWP), which has developed a Stormwater C.3 Guidebook to provide guidance for compliance.²³

Based on project construction details, the entire project site, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire project site, not just areas of new impervious surfaces). A Stormwater Control Plan (SCP) must be prepared and submitted for the project site detailing design elements and implementation measures to meet MRP requirements. The project will be required to include Low Impact Development (LID) design measures and a Stormwater Facility Operation and Maintenance Plan must be prepared to ensure that stormwater control measures are inspected, maintained, and funded for the life of the project.

Stormwater at the impervious areas near the ball fields would be treated with adequately sized bio-swales. All other impervious areas would be treated with self-retaining landscape areas. The project site is exempt from flow control requirements because the downstream channels from the site are subject to tidal action. Therefore, the proposed project is required to provide self-retaining landscape areas at a ratio of 1:2 (pervious to impervious areas).

The following two-part mitigation measure would ensure project compliance with the Construction General Permit and C.3 stormwater requirements and ensure that project impacts related to stormwater runoff quality and volume would be reduced to a less than significant level.

Mitigation Measure HYD-1a: As a condition of approval for construction permits, the applicant shall demonstrate compliance with the Construction General Permit and City requirements, including the preparation and implementation of a SWPPP to address stormwater runoff during project construction.

Mitigation Measure HYD-1b: As a condition of approval for construction permits, the project applicant shall demonstrate compliance with City stormwater requirements including Provision C.3 of the MRP. The project applicant shall prepare and implement a SCP for the project in compliance with guidance in the CCCCWP Stormwater C3 Guidebook. The SCP shall be submitted to the City for review and approval prior to the issuance of any permits for project construction. At a minimum, the SCP for the project shall include:

- LID design details incorporated into the project as feasible. Specific LID design may include, but is not limited to: using pervious pavements and green roofs, dispersing runoff to landscaped areas, and/or routing runoff to rain gardens, cisterns, swales, and other small-scale facilities distributed throughout the site.

²³ Contra Costa County Clean Water Program (CCCCWP), 2012, Stormwater C.3 Guidebook, 6th Edition, February 15.

- A calculation of current and future drainage at the site demonstrating that proposed stormwater design details will meet C.3 stormwater retention and treatment criteria.
 - Measures to address potential stormwater contaminants. These may include BMPs to cover or control potential sources of stormwater pollutants at the project site such as those generated by leakage of oil and other fluids from parked vehicles in the parking areas or from landscaping and maintenance chemicals used on the buildings and playing fields.
 - A Stormwater Facility Operation and Maintenance Plan for the project site, which will include periodic inspection and maintenance of the storm drainage system. Persons responsible for performing and funding the requirements of this plan must be identified.
- 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)?*

Less Than Significant Impact. There are no groundwater wells on the project site and the project would rely on municipal water supplies from the City of Martinez water system. As discussed above under section a), the overall area of the project site covered with impervious surfaces would increase, but implementation of Mitigation Measure HYD-1b would ensure no increases of stormwater runoff from the site which could result in less groundwater recharge from precipitation events. No additional mitigation is required to address potential impacts to groundwater resources from implementation or operation of the project.

- 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?*

Less Than Significant Impact. Implementation of proposed improvements would not be expected to significantly alter the existing drainage patterns at the project site resulting in substantial erosion or siltation on- or off-site. As discussed under section a) above, the NPDES Construction General Permit would apply to the construction of the project, requiring the implementation of BMPs to prevent erosion that could affect stormwater quality. As the project site is greater than one-half acre in area, Municipal Code Section 15.04.165, the City's Erosion Control Ordinance, would also apply. Among other requirements, the Erosion Control Ordinance requires preparation and implementation of an erosion control plan to prevent significant erosion from wind or water runoff during construction activities. After completion of construction, the entire project site would be covered by ballfields, landscaping, buildings, and pavement, so no erosion or siltation would be expected. No additional mitigation is required to reduce potential impacts from erosion to a less than significant level.

- 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 which would result in flooding on- or off-site?*

Less Than Significant Impact. Implementation of proposed improvements would not be expected to significantly alter the existing drainage patterns at the project site resulting in flooding on- or off-site. Implementation of Mitigation Measure HYD-1b would require measures which would reduce peak surface runoff volumes from impervious surfaces at the project site during precipitation events and prevent surface runoff from resulting in flooding on- or off-site. No additional mitigation is required to reduce potential flooding impacts from surface runoff to a less than significant level.

- 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?*

Less Than Significant Impact. Implementation of Mitigation Measure HYD-1b, which would require storage and treatment of runoff from impervious surfaces at the site would reduce potential impacts from increased runoff water from the project site to a less than significant level.

- f) *Otherwise substantially degrade water quality?*

Less than Significant Impact. With the exception of stormwater runoff, the project would have no potential impacts to water quality. Implementation of Mitigation Measures HYD-1a and HYD-1b would reduce potential impacts to water quality to a less than significant level.

- 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?*

No Impact. No housing would be created as part of the project.

- h) *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

No Impact. The northeastern portion of the project site is located within a mapped 100-year special flood hazard area,²⁴ while the remaining portion of the project site is located within the Zone X flood hazard area, which is defined as “Areas of 0.2% annual chance flood; areas of 1% annual chance annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.”²⁵ The portion of the project site within the flood zone is proposed for ballfields and would not contain any structures.

- i) *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?*

Less Than Significant Impact. The project site is not located within a dam inundation area.²⁶ As detailed above, only a portion of the ballfields in the northeast corner of the project site is located in a mapped 100-year flood hazard zone. The project site is not located in an area that is

²⁴ FEMA, 2009, Flood Insurance Rate Map, Contra Costa California and Incorporated Areas, Panel 69 of 602, Map Number 06013C0069F, June 16.

²⁵ Ibid.

²⁶ Contra Costa County, 2011. Hazard Mitigation Plan Update, Map 10-1: Dams in Contra Costa County. May.

likely to be affected by flooding as a result of the projected 18-inch rise in sea level by 2050, though based on its elevation, the project site and vicinity could be affected by a projected 55-inch rise in sea level by 2100.²⁷ Absent future City or regional adaption to rising sea levels, in the event of a future flooding event, the park would be inaccessible due to flooding on nearby streets, making injuries or death at the site due to flooding unlikely. Flooding damage to the ballfields and proposed buildings created under the project (restrooms and concession stand) would likely be minor compared to those on surrounding properties. Therefore, site-specific mitigation for potential flooding by 2100 due to predicted rising sea levels is not warranted and could potentially exacerbate flooding impacts on adjoining properties by redirecting flood waters to them.

j) *Inundation by seiche, tsunami, or mudflow?*

No Impact. The project site is not located near a large enclosed body of water, such as a lake or bay that would be subject to seiche hazards. The project site is located approximately 1,000 feet south of the Carquinez Strait and is not in a mapped tsunami evacuation area.²⁸ The project site is located in a level area not subject to mudflows, a type of landslide.

²⁷ San Francisco Bay Conservation and Development Commission (BCDC), 2011, Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline, Figure 1.16: Grizzly Bay Shoreline Areas Potentially Exposed to Sea Level Rise, October 6.

²⁸ California Emergency Management Agency (Cal EMA), 2009, Tsunami Inundation Map For Emergency Planning, Benicia Quadrangle, July 31.

X. LAND USE AND PLANNING.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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 type="checkbox"/>	<input checked="" 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"/>

Affected Environment

The project site consists of an existing City park, which is located on State land that is leased to the City through the East Bay Regional Parks District and is subject to the policies and objectives of the Martinez Waterfront Land Use Plan.

Existing facilities at the park include: four softball fields, one multi-use field with combined soccer field and baseball field, a concession building with restrooms and storage, a multi-purpose lawn area, a skate park, a shade structure, a tot lot, a bocce ball area consisting of fifteen courts, a restroom building, a group picnic area and some family picnic pods, and five parking lots at the perimeter of the park. A drainage ditch runs north-south between the multi-purpose lawn area and the softball fields. This ditch drains unknown areas to the south of the railroad tracks. The project site is located within the City of Martinez, but is located on State land.

According to the City of Martinez General Plan,²⁹ the project site is located in the North Contra Costa Waterfront Zone. Policies for the North Contra Costa Waterfront Zone indicate that this zone should remain unimproved and devoted to open space land use. Recreation and limited industrial development compatible with the wetland habitat and other natural conditions present are appropriate uses. Land use within this zone is also governed by the regulations of other governmental agencies. Most of this area is comprised of the marshes and mudflats of the waterfront area, which have high value as natural habitats and as scenic and recreational areas. The proposed improvements that would be implemented as part of the project are consistent with these policies.

Under the City of Martinez Zoning Ordinance, the project site is zoned as Mixed Use District – Open Space/Recreation Facilities (M-OS/RF).³⁰ The purpose of the Mixed Use district is to enable the combination of two or more use districts where such combination of districts would serve the objective of implementing the provisions of the General Plan. The purpose of the Open Space (OS)

²⁹ City of Martinez, 1973 (as amended 2010). City of Martinez General Plan. Available online at: <http://www.cityofmartinez.org/civicax/filebank/blobload.aspx?BlobID=7569> (Accessed May 18, 2015)

³⁰ City of Martinez, 2011. City of Martinez Community View Maps. Available online at: <http://maps.digitalmapcentral.com/production/vcommunityview/cities/Martinez/index.aspx> (Accessed May 18, 2015).

district is to provide an appropriate zoning district for public or privately held lands devoted to open space uses either permanently or by terms of a long-term contract. The RF district is intended to accommodate public and private recreational facilities in a planned and orderly manner. The OS district is distinguished from the RF district in that recreational facilities, while allowed in the open space district, are expected to be only incidental to the basic purpose of preserving open space areas for visual and aesthetic relief, conservation and preservation of wildlife habitats, and environmental values within and adjacent to an essentially urban environment.

Discussion

a) *Physically divide an established community?*

No Impact. The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. The proposed project would replace and improve an existing recreational facility. The proposed project would not physically divide an established community.

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?*

No Impact. Proposed improvements would occur within the existing Martinez Waterfront Park, onstate land granted on a lease to City of Martinez through East Bay Regional Park District with uses that are in conformity with the Martinez Waterfront Land Use Plan. According to the City of Martinez Zoning Ordinance, the project site is zoned as Mixed Use District – Open Space/Recreation Facilities (M-OS/RF). Proposed improvements are consistent with this zoning designation. The proposed project would not result in the conversion of adjacent uses or conflict with applicable State and/or City of Martinez land use designations or zoning standards. Therefore, the proposed project would not conflict with any applicable land use plan, policy or regulation with jurisdiction over the project.

c) *Conflict with any applicable habitat conservation plan or natural community conservation plan?*

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.

XI. MINERAL RESOURCES.

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>

Affected Environment

Minerals are any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat and oil bearing rock, but excluding geothermal resources, natural gas and petroleum. Rock, sand, gravel and earth are also considered minerals by the Department of Conservation when extracted by surface mining operations. The project site is not located in a designated mineral resource area.

Discussion

- 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?*

No Impact. No known mineral resources are located on or near the project site. Therefore, the proposed project would not result in the loss of availability of a known mineral resource.

- 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?*

No Impact. See XI(a), above.

XII. NOISE.

Would the project result in:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne 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 or, where such a plan has not been adopted, within 2 miles of a public airport or 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>

Affected Environment

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A *decibel* (dB) is a unit of measurement that indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3.0 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3.0 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness. Sound intensity is normally measured through the *A-weighted sound level* (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive.

Existing Noise Sensitive Land Uses. The closest noise sensitive land uses to the project site are the residential land uses located south of the Union Pacific Railroad line fronting Escobar Street, in downtown Martinez. The rear of some of these properties back up to Marina Vista Avenue, which borders the railroad tracks.

Primary Noise Sources. The primary noise source in the project vicinity is railroad activity on the Union Pacific Railroad line. Noise from vehicle traffic along Marina Vista Avenue and Escobar Street also contributes to the ambient noise environment of the nearest residential properties south of the project site. The Union Pacific rail line is located adjacent to Marina Vista Avenue between the

project site and the nearest residential land uses. Stationary noise sources in the project vicinity include recreational and parking lot activities at the Waterfront Park as well as parking lot and delivery activities at nearby commercial land uses.

Discussion

- a) *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less Than Significant Impact. The City of Martinez addresses noise in the Noise Element of the General Plan.³¹ Applicable policies of the noise element include the City's land use compatibility standards for community noise environments. According to the Noise Element, the City considers environments with noise levels up to 70 dBA CNEL to be "conditionally acceptable" for new outdoor spectator sports land use development. Environments with ambient noise levels of up to 60 dBA CNEL are considered "normally acceptable" for new residential development, while environments with noise levels between 60 dBA and 70 dBA CNEL are considered "conditionally acceptable," requiring a detailed analysis of noise reduction requirements. The City does not have any established noise performance thresholds for stationary noise sources. Implementation of a development project is typically defined to result in a substantial increase in ambient noise levels if it results in an "audible increase" compared to noise levels existing without the project. Audible increases in noise levels generally refer to a change of 3 dBA or more, as this level has been found to be barely perceptible to the human ear in outdoor environments.

Implementation of the proposed park improvements (including the new lighting) would result in extended hours of use and increased attendance at the Waterfront Park sporting facilities. Based on the results noise impact analysis of similar field lighting installation projects performed by LSA,³² average noise levels for up to approximately 700 spectators would produce hourly average noise levels of approximately 65 dBA $L_{eq(h)}$ as measured at approximately 50 feet behind the spectator bleachers.

The proposed project is expected to result in events that could draw a maximum attendance of up to 700 spectators. For the purpose of this analysis, it is assumed that the proposed project could produce maximum noise levels of up to 85 dBA L_{max} as measured at the center of the proposed spectator bleachers. The nearest residential land uses are located approximately 930 feet from the nearest proposed spectator bleachers. Based on these assumptions, noise levels from spectators would attenuate to below 40 dBA $L_{eq(h)}$ as measured at the nearest residential properties located south of the park that back up to Marina Vista Avenue (a 25 dBA reduction at 930 feet compared to the noise level as measured at 50 feet from the source).

While maximum noise levels from spectator noise could be perceptible at times at the property line of the nearest residential properties to the project site, they would be well below the maximum noise levels currently experienced at these locations from trains passing by. In addition, the loudest hourly average noise levels from an event at the park with a maximum attendance of 700 spectators (noted above to be approximately 40 dBA $L_{eq(h)}$) would not exceed

³¹ Martinez, City of, 1985. *Noise Element of the General Plan*. November, 20.

³² LSA, 2014. *Preliminary Noise Impact Analysis for Martinez Waterfront Park Improvement Project*. April 15.

even the lowest existing daytime or evening hourly average noise level (shown to be 64.3 dBA $L_{eq(h)}$) which was documented in the long-term noise level measurement at the nearest residential properties.

Therefore the proposed project would not exceed local noise standards and would have a less than significant impact on near-by sensitive receptors.

- b) *Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?*

Less Than Significant Impact. Development of the proposed project would not result in excessive ground borne vibration or noise levels. There may be relatively minor vibrations from the use of trucks, or other equipment during construction activities. However, this ground borne condition from such equipment would be relatively minor, intermittent, short-term, and restricted to daytime hours. Additionally, noise sensitive receptors are not located in the immediate vicinity of the construction areas. Therefore, this impact would be less than significant.

- c) *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

Less Than Significant Impact. As part of preparation of the Preliminary Noise Impact Analysis, a long-term ambient noise measurement was taken on the project site to document the existing noise environment and capture the noise levels associated with all activities in the project area. The long-term measurement was conducted from Friday, April 11, 2014 to Monday, April 14, 2014. The hourly averages were weighted and summed to calculate the daily 24-hour CNEL. The long-term measurement was located adjacent to the nearest residential properties that front Marina Vista Avenue, and is shown in the Preliminary Noise Impact Analysis (Appendix C). The results show that both the Saturday and Sunday 24-hour averages at this location were 71 dBA CNEL. The calculated weekday 24-hour average was 79 dBA CNEL. The noise measurement data and the 24-hour average calculation spreadsheet are provided in the Preliminary Noise Impact Analysis (Appendix C).

This long-term noise measurement captured all audible noise levels in the vicinity of the noise measurement location. Documented noise sources include train by-passes, traffic on Mira Vista Avenue and Escobar Street, baseball practice activities, parking lot activities at the Waterfront Park, and recreational use of the park.

Measured hourly average noise levels ranged from 48.1 dBA to 78 dBA $L_{eq(h)}$ over the long-term measurement. Measured instantaneous maximum noise levels ranged up to 113.5 dBA L_{max} ; while the recorded minimum instantaneous noise levels for the long-term measurement was 36.7 dBA L_{min} . As mentioned above, the proposed project could produce noise levels up to 85 dBA at the proposed spectator bleachers and approximately 40 dBA at the nearest sensitive receptor. Noise levels generated by the proposed project are below the existing ambient noise levels. Therefore the proposed project would not cause a substantial permanent increase in ambient noise levels.

- d) *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

Less Than Significant Impact. Due to distance attenuation and the existing noise environment, implementation of the proposed project would not result in a perceptible increase in ambient noise levels at the nearest off-site sensitive receptors. This impact would be less than significant.

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. The project site is not located within an airport land use plan, or within two miles of a public airport or public use airport and would not expose future site users to excessive noise levels.

- 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?*

No Impact. The project is not located within two miles of a public or public use airport and would not expose future site users to excessive noise levels.

XIII. POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>

Affected Environment

The project site consists of an existing park, located on state land granted via lease to the City through the EBRPD. The project site is bordered to the north by the Martinez Marina and the Carquinez Strait, to the west by Martinez Regional Shoreline and light industrial uses, to the south by Joe DiMaggio Drive and the railroad tracks and to the east by heavy industrial uses. A variety of land uses are located further south of Joe DiMaggio Drive including commercial, residential, and heavy industrial uses.

Discussion

- a) *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

No Impact. The proposed project entails refurbishment and renovation of facilities within an existing park. The proposed project would not include any new housing, commercial or industrial space, result in the conversion of adjacent land uses, or provide access to previously inaccessible areas. It would not provide additional major infrastructure or increase the capacity of the existing water system. Therefore, the proposed project would not directly or indirectly induce substantial population growth.

- b) *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

No Impact. The proposed project would be located within the existing park, which does not contain housing. Therefore, the proposed project would not displace existing housing.

- c) *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

No Impact. See XIII(b), above.

XIV. PUBLIC SERVICES

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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 government 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 public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Affected Environment

The project site is located in the City of Martinez served by the following existing public services.

Police Protection. Police protection is provided by the Martinez Police Department, which is located at 525 Henrietta Street, approximately 0.5 mile from the project site. The Contra Costa County Sheriff's Office is located at 651 Pine Street, approximately 0.1 mile from the project site.

Fire Protection. Fire protection and emergency response services in the City of Martinez are provided by the Contra Costa County Fire Protection District (CCCFPD). The Operations Division of the CCCFPD staffs 19 engine companies, 5 truck companies, and Shift Training Captain/Safety Officer daily. The Division maintains 24 fully staffed stations, and 2 more stations staffed with paid-on-call reserve firefighters. Minimum daily staffing is 77 personnel. The 24 on-duty companies are trained and regularly cross-staff numerous specialty response units including 18 wildland fire apparatus, 3 rescue units, a trench rescue unit, a fire rescue boat, and a mobile breathing air support unit.³³ Two fire stations are located in Martinez: Station 13 at 251 Church Street, and Station 14 at 521 Jones Street.

Schools. The Martinez Unified School District (MUSD) provides nine schools in the City of Martinez, including four elementary schools, a junior high school, a high school, two alternative/independent study schools, and an adult education program. The nearest public school to the project site is Martinez Junior High School, located at 1600 Court Street, approximately 0.5 mile from the project site. St. Catherine of Siena, a private pre K-8 school is located at 604 Mellus Street, approximately 0.43 mile from the project site.

³³ Contra Costa County Fire Protection District, 2014. CCCFPD website: <http://www.cccfpd.org/emergency-operation.php> (Accessed July 22, 2015).

Parks. For a discussion of parks, see Section XV. Recreation.

Discussion

- a) *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 public services: Fire protection, police protection, schools, parks, other public facilities?*

Fire Protection. Less Than Significant Impact. The proposed project would result in a small increase in the demand for fire protection and emergency services due to increased use and development at the project site. However, because proposed improvements would be for recreation, and would not include housing units or other structures, the incremental increase in demand for fire protection services would not be significant and would not exceed the physical and financial capabilities of the Fire Department, resulting in the need for new or expanded fire services. In addition, proposed improvements would be located within an existing recreational facility, which is clearly marked and signed to aid in access and timely response in medical emergencies. Therefore, impacts to fire protection would be less than significant.

Police Protection. Less Than Significant Impact. Public use of the existing park would result in an increase in the demand for police services due to the increased use and development at the project site. However, due to the limited improvements proposed, the incremental increase in calls is not anticipated to generate the need for additional officers or equipment. Therefore, impacts to police protection would be less than significant. Proposed park improvements are anticipated to police patrol requirements due to the provision of security cameras and more accessible police patrol routes.

Parks. No Impact. Section XV. Recreation

Schools and Other Public Facilities. No Impact. The proposed project does not include housing units or other development that would increase the population or the number of students enrolled in schools within the project area. Therefore, the proposed project would not result in an increase in demand for school services or other public facilities or result in the need for additional or altered facilities.

XV. RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Affected Environment

The City of Martinez Department of Recreation/Senior Center and Community Services provides activities, classes, sports, and cultural opportunities for the City of Martinez, including the Rankin Park Pool, Martinez Senior Community Center, Golden Hills Community Room, 16 ballfields, 17 developed parks, tennis, bocce, and basketball courts. The Martinez Waterfront Park currently provides four ballfields with concessions and restroom, soccer field, picnic areas, playground areas, horseshoe pits, bocce ball courts, restroom, marina, and fishing pier. In addition, the EBRPD operates the western portion of the Martinez Regional Shoreline with open lawns, small picnic areas, ponds and creeks, and nearly three miles of trails through the marsh and along the shoreline.

Discussion

- 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?*

Less Than Significant Impact. The proposed project entails refurbishment and rehabilitation within an existing park. Proposed improvements include: reconfigured/upgraded ball fields, ADA-accessible improvements, new ADA accessible restroom, new picnic facilities, sport field lighting, landscaping, and irrigation. Implementation of the proposed project would likely increase the use of the site. However, it is not anticipated that such an increase in use would result in a physical deterioration of the facility. Implementation of the proposed project is not anticipated to increase the use of other existing neighborhood and regional parks or other recreational facilities. Therefore, this impact is considered less than significant.

- 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?*

Potentially Significant Unless Mitigation Incorporated. The proposed project would refurbish and rehabilitate an existing recreational facility. Proposed improvements include construction and/or expansion of recreational facilities which might have an adverse physical effect on the environment as described in the various sections of this Initial Study. Implementation of the mitigation measures described in this Initial Study would ensure that proposed improvements would not have an adverse physical effect on the environment. With implementation of the

mitigation measures described herein, environmental impacts associated with the construction of proposed recreational facilities would be less than significant.

XVI. TRANSPORTATION/TRAFFIC

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 result 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 polices, 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"/>

Affected Environment

The Martinez Waterfront Park is located in the northwest quadrant of the City of Martinez. The park is located near the Martinez Caltrain and Amtrak stations. The park is accessible from Ferry Street, which leads to Joe DiMaggio Drive and Court Street. Immediately south of the park, Marina Vista Avenue is a one-way westbound street. Escobar Street, another east-west roadway that merges with Marina Vista Avenue west of Interstate 680, allows travel in both directions.

Discussion

- 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?*

Less Than Significant Impact. Roadway performance is most often controlled by the performance of intersections, specifically during peak traffic periods. Traffic control at intersections interrupts traffic flow that would otherwise be relatively unimpeded except for the influences of on-street parking, access to adjacent land uses, or other factors resulting in the interaction of vehicles between intersections. For this reason, traffic analyses for individual projects typically focus on peak-hour operating conditions for key intersections rather than

roadway segments. Operating conditions at intersections are typically described in terms of level of service (LOS). It is described with a letter designation from A to F, with LOS A representing the best operating conditions and LOS F the worst. The a.m. and p.m. peak-hour operating conditions for the key study intersections were evaluated using Highway Capacity Manual 2010 (HCM 2010) methodology for unsignalized intersections.

For all-way stop-controlled intersections (unsignalized), the HCM methodology estimates the average control delay for each of the subject movements and determines the LOS for each movement. The overall average control delay measured in seconds per vehicle and the LOS are then calculated for the entire intersection. The six qualitative categories of LOS for unsignalized intersections and the corresponding HCM control delay value range are shown in Table D.

Table D: Level of Service Criteria for Unsignalized Intersections (HCM Methodology)

LOS	Unsignalized Intersection Delay (seconds)	LOS	Unsignalized Intersection Delay (seconds)
A	≤10.0	D	>25.0 and ≤35.0
B	>10.0 and ≤15.0	E	>35.0 and ≤50.0
C	>15.0 and ≤25.0	F	>50.0

Source: *Highway Capacity Manual* (Transportation Research Board, December 2010)

LOS = level of service

HCM = Highway Capacity Manual

The proposed project will renovate many of the facilities within the park but will not expand the park to more than its existing 31 acres. Although the size of the park is not changing, it is anticipated that renovation of the facilities could invoke renewed interest in the park and result in an increased number of visitors. Improvements to parking are included in the renovation plans. The number of parking spaces could be increased from 238 in the existing condition to as many as 352. While parking in itself does not generate travel demand, parking facilitates travel by vehicle and an increase in the parking supply could accommodate an increase in vehicle travel.

Future traffic generation was estimated from the park's existing traffic generation and the potential increase in parking supply. A pneumatic tube across Joe DiMaggio Drive collected traffic volumes into and out of the park for 24 hours on a typical weekday. Volume data is available in Appendix D. Table E calculates the resulting daily, a.m. peak hour, and p.m. peak hour trip rates for Martinez Waterfront Park, the anticipated future trip generation, and the number of new trips that could be added to the roadway network. As Table E shows, the project could result in up to 87 additional trips to/from the park during the a.m. peak hour and up to 133 additional trips to/from the park in the p.m. peak hour.

Table E: Martinez Waterfront Park Trip Generation

	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Existing Trips	238	Spaces	3,937	111	70	181	178	100	278
Trip Rate			16.54	0.47	0.29	0.76	0.75	0.42	1.17
Future	352	Spaces	5,823	164	104	268	263	148	411

	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trips									
Net New Trips			1,886	53	34	87	85	48	133

ADT = Average Daily Traffic

These new trips will most directly affect the intersections of Ferry Street/Marina Vista Avenue and Ferry Street/Escobar Street. Both of the studied intersections are unsignalized. Past these two intersections, traffic would disperse along the roadway network. Existing traffic volume data for the two studied intersections were collected on a typical weekday in June 2015. Traffic volume data is available in Appendix D. Existing LOS calculation worksheets, using HCM 2010 methodology, are also provided in Appendix D. The existing LOS at the two studied intersections is provided in Table F.

New project trips were distributed according to existing travel patterns. Intersection performance was recalculated for the two intersections after the addition of project trips. These existing plus project LOS calculation worksheets are provided in Appendix D. The results are summarized in Table F.

Table F: Existing and Existing Plus Project Intersection LOS Summary

Intersection	Existing				Existing Plus Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 Ferry Street/Marina Vista Avenue	8.1 sec	A	8.4 sec	A	8.3 sec	A	9.0 sec	A
2 Ferry Street/Escobar Street	8.3 sec	A	9.0 sec	A	8.6 sec	A	9.6 sec	A

LOS = levels of service
sec = seconds

As Table F shows, both intersections operate with minimal delay and at LOS A in the existing condition. Both intersections are anticipated to continue to operate at LOS A in the existing plus project condition. Therefore, during operation of the project the impact to the circulation system would be less than significant.

A small increase in traffic would occur in the project area during the construction phase of the proposed project from construction vehicles and construction workers accessing the site. However, these impacts would be short-term, occurring only during the construction period and are not expected to produce a poor level of service, given the remaining capacity observed at the studied intersections. This impact would be less than significant.

- 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?*

Less Than Significant Impact. As described above, renovation of the park would have negligible impacts on the area's transportation system as it would not degrade intersection performance. Use of construction vehicles and equipment during project construction would result in a minor, temporary increase in vehicle traffic in the area around the project site. However, construction activities would be temporary and are not expected to conflict with an applicable congestion management program. This impact would be less than significant.

- c) *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?*

No Impact. The proposed project is a recreation project and would not result in any changes in air traffic patterns or levels of air traffic.

- d) *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

Less Than Significant Impact. The proposed project entails refurbishment and rehabilitation within an existing park. As part of the project, up to 13 parallel parking spaces will be provided along North Court Street. No other changes to roadway design or character are proposed. The area being paved and striped for parallel parking has historically been used for parallel parking during tournaments and special events. Parallel parking is generally compatible with two-lane local roadways such as Joe DiMaggio Drive. Because the project is not substantially changing roadway design and is not introducing an incompatible use, no impacts related to safety hazards would occur as a result of the proposed project.

- e) *Result in inadequate emergency access?*

Less Than Significant Impact. The proposed project entails refurbishment and rehabilitation within an existing park and is not altering access to the site. Once completed, the proposed project would not result in inadequate emergency access. During construction activities, there could be slight delays to emergency access due to construction vehicles accessing the project site. However, construction activities would be short-term and temporary. The project's effects on emergency access would be limited to construction of the project and would be temporary in nature. Therefore, the proposed project would not result in inadequate emergency access.

- 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?*

Less Than Significant Impact. The proposed project does not include any activities or construction of structures that would affect alternative transportation facilities or use, so there would be no impacts on alternative transportation. The project would not conflict with adopted policies or programs supporting alternative transportation.

XVII. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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 storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 which 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"/>

Affected Environment

A variety of local and regional purveyors provide and maintain utility and service system facilities associated with electricity, water, stormwater, wastewater, solid waste, communications and natural gas in the City of Martinez. The site currently has existing underground utilities and utility lines are located in the adjacent streets.

Wastewater. Two sanitary districts provide wastewater collection and treatment for Martinez. The Contra Costa County Sanitary District (CCCSD) collects and treats about two-thirds of the wastewater generated within the City of Martinez, including the project site. The remainder of the wastewater from the east central portion of the City (e.g, from Pacheco Boulevard on the north, Bush and Pine Streets on the west and Center Street on the south) is collected and treated by the Mt. View Sanitary District. The City purchases recycled water from CCCSD to provide water for landscaping, public parks, and/or parkway medians.

The CCCSD Wastewater Treatment Plant is located near Martinez, on unincorporated land, at the intersection of Interstate 680 and Highway 4. At this secondary treatment facility, effluent from the activated sludge secondary treatment process is disinfected and discharged to an outfall in Suisun Bay. The secondary treatment facilities have a current NPDES permitted capacity of 53.8 mgd, with a current average dry weather flow of about 40 mgd.

Water. The project site is located within the City of Martinez Water Department Service Area. Martinez's surface water supply is from the San Joaquin River Delta. The City of Martinez purchases untreated water from the Contra Costa Water District (CCWD) for use within their service area. The

City's water utility operates treatment, storage, pumping, transmission, distribution and fire protection facilities that deliver water for use by customers within the service area. In 2012, the City provided customers with 4.4 million gallons per day (mgd) of metered water.³⁴

Storm Drain Facilities. Storm drain facilities are located along the site boundaries on Joe DiMaggio Drive and North Court Street.

Solid Waste. The City of Martinez is responsible for all solid waste collection within the city limits. Republic Services (formerly Allied Waste Services) has a franchise agreement with the City of the collection and disposal of solid waste and recyclable items. It operates both the Contra Costa Transfer Station and the Keller Canyon Landfill. Keller Canyon Landfill covers 2,600 acres of land; 244 acres are permitted for disposal. The Keller Canyon Landfill currently handles 2,500 tons of waste per day, although the permit allows up to 3,500 tons of waste per day to be managed at the facility. According to the CalRecycle Solid Waste Facility Permit (07-AA-0032), as of December 2009, the remaining capacity of the landfill's disposal area is estimated at approximately 63 million cubic yards, and the estimated date for ceasing operations at the landfill is 2030.

Discussion

- a) *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

Less Than Significant Impact. Implementation of the proposed project would result in the construction of new park improvements, including a new restroom near the Tot Lot Play Area and an ADA-accessible high-low drinking fountain. These facilities would be located adjacent to existing roadways and could be connected to existing public service system, including local sewer. It is expected that the relatively small amount of wastewater generated from park improvements (e.g., one restroom) can be accommodated by local sanitary treatment systems and would not exceed the wastewater treatment requirement of the Regional Water Quality Control Board.

- 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?*

Less Than Significant Impact. As described above, implementation of the proposed project would result in the construction of park improvements, including a restroom and an ADA-accessible drinking fountain, as well as landscape and turf areas that would require irrigation. The new restroom and drinking fountain facilities would be connected to existing public service systems, including water and sewer. These connections would not be considered "major" lines because these improvements would be made as additions to the existing infrastructure.

The main water use in the park is for irrigation of the 13 acres of turf area. Proposed improvements would not increase the turf area; however, with installation of the new, more efficient irrigation system, water use for irrigation of the turf area should be reduced by

³⁴ De Novo Planning Group, 2015. Martinez General Plan Update Draft EIR. 11 September. Available online at: http://www.cityofmartinez.org/depts/planning/general_plan_update_notice_of_availability.asp (Accessed on July 7, 2016).

approximately five percent. Proposed planting, including 260 trees and approximately 0.5 acre of other drought-tolerant planting, would increase water use by approximately four percent during the first five years of establishment. After the first five years, water required for irrigation of proposed plantings would be reduced by about two percent.

As indicated above, the proposed project would not generate substantial amounts of wastewater or significantly increase water demand. Therefore, implementation of the proposed park improvements would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be less than significant

- c) *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Potentially Significant Unless Mitigation Incorporated. Implementation of the proposed project would result in an increase in impervious surfaces and an associated increase in stormwater runoff. As described in Response IX(a), the proposed project would be required to comply with the MRP that requires implementation of measures for site design, source control, runoff reduction, and stormwater treatment. The project will be required to include Low Impact Development (LID) design measures and a Stormwater Facility Operation and Maintenance Plan must be prepared to ensure that stormwater control measures are inspected, maintained, and funded for the life of the project. Implementation of Mitigation Measures HYD- 1a and HYD-1b would ensure project compliance with the Construction General Permit and C.3 stormwater requirements and ensure that project impacts related to stormwater runoff quality and volume would be reduced to a less than significant level.

- d) *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

Less Than Significant Impact. See XVII(b), above.

- e) *Result in a determination by the wastewater treatment provider which 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?*

Less Than Significant Impact. See XVII(a), above.

- f) *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

Less Than Significant Impact. Operation of the proposed project is not anticipated to generate a significant amount of solid waste. Users of the park would dispose of garbage, but not in amounts that would greatly exceed average per capita garbage generation rates. In addition recycling receptacles would be located throughout the park, allowing the City to be in full compliance with waste diversion goals mandated by the California Integrated Waste Management Act. The amount of solid waste generated by both users of the park and construction of park improvements would not substantially decrease the amount of space in the Keller Canyon Landfill, which serves the project site. Solid waste disposal off-site would comply with all local, State, and federal

requirements. Therefore, impacts related to solid waste disposal are considered less than significant.

g) *Comply with federal, State, and local statutes and regulations related to solid waste?*

Less Than Significant Impact. The proposed project would promote composting and recycling on-site. Receptacles for recyclable waste would be provided as part of proposed improvements and the City would contract with appropriate entities for the removal and processing of recyclable waste. The City currently complies with federal, State, and local statutes related to solid waste recycling. These programs would continue with implementation of the proposed project and potential impacts are considered less than significant.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which 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"/>

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 a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?*

Potentially Significant Unless Mitigation Incorporated. As described in this Initial Study, implementation of the proposed project would have the potential to adversely impact special-status animal species, and previously undiscovered cultural and paleontological resources and/or human remains. Implementation of the mitigation measures recommended in this Initial Study would ensure that construction and operation of the proposed project would not: 1) degrade the quality of the environment; 2) substantially reduce the habitat of a fish or wildlife species; 3) cause a fish or wildlife population to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare or endangered plant or animal; or 6) eliminate important examples of the major periods of California history or prehistory.

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.)*

Less Than Significant Impact. The impacts of the proposed project would be individually limited and not cumulatively considerable. The proposed project would construct improvements at an existing City park. As described in this Initial Study, impacts associated with the proposed project would be temporary, construction-related and would be reduced to a

less than significant level with implementation of the mitigation measures contained herein. No other projects would be under construction at the same time as the proposed project. Therefore, the proposed project would not make a considerable contribution toward a cumulative impact related to construction. Additionally, the proposed project would not generate a significant amount of greenhouse gas emissions and would therefore not result in a cumulatively considerable impact to global climate change.

- c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

Potentially Significant Unless Mitigation Incorporated. As described in this Initial Study, any potential environmental impacts from the proposed project would be reduced to a less than significant level with the implementation of the recommended mitigation measures contained herein. With implementation of measures both incorporated into the project design and recommended as mitigations to reduce the impacts associated with aesthetics, air quality, biological resources, cultural resources, and hydrology and water quality, the proposed project would not result in substantial adverse effects on human beings.

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APPENDIX A SPORTS LIGHTING ANALYSIS

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July 7, 2016

Author: Ronald Zeiger, PE

Martinez Waterfront Park Sports Lighting

The City of Martinez is planning on installing sports lighting on four renovated softball fields at Waterfront Park. There are no sports lights at the existing softball fields.

General Discussion / Outdoor Sports Lighting:

The potential environmental impacts of outdoor sports lighting are generally evaluated as “light trespass”. Light trespass is defined as light spilling onto adjacent properties. Visual characteristics of outdoor sports lighting may be considered as being objectionable to some: 1) if the glare from of the lights presents a visual intrusion for residents with views of the site; 2) if the sports light poles either individually or cumulatively block a major view corridor; and 3) if the light poles create an intrusion within the visual framework as seen by residents.

Design Criteria:

The design of the proposed sports lighting system should provide light levels in accordance with recommendations of the Illuminating Engineering Society of North America (IESNA) RP-6 *Current Recommended Practice for Sports Lighting*. Using the IESNA criteria, it is recommended that the softball field design provide an average illuminance of 50 footcandles (fc) infield/30 footcandles outfield.

Regulatory Environment:

The City of Martinez has no standards or criteria by which to evaluate potential visual characteristics of outdoor sports lighting. This is typical of all jurisdictions nationwide; currently, as there is no legal or uniformly accepted definition of light trespass. Commonly, the term is employed in reference to unwanted light at the property line disturbing the tranquility of an adjacent property owner.

For example, San Diego County that has an ordinance (Ordinance No.5933, November 19, 1980) dealing with light trespass. This ordinance was not intended to set limits on public sports lighting facilities. The ordinance places a limit of 0.02 footcandle – equivalent to “bright moonlight”, on the horizontal and vertical planes at points 5 feet inside the property line. The illumination the moon could technically provide is about 0.03 foot-candle (exactly full moon, directly overhead), but that what most people would consider to be "full" probably averages half that at most, around 0.015 fc.

The San Diego limit therefore restricts artificial light levels to the same intensity produced in the environment naturally.



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California legislature has been working on outdoor lighting issues, including “dark sky” issues, and does considered such in part of the 2013 Energy Efficiency Building Standards, and Cal Green, but those standards do not include issues of light trespass from sports lighting which is an exempt category.

The City of Walnut Creek also has a standard that sets a maximum limit of 1.0 footcandle for trespass light at the property line. This value is consistent with another source for environmental lighting, namely street lighting. Illumination of residential streets vary widely, but can be found from <0.01 to >1.0 fc as measured on pavement.

From recent experience it has been found that a 1.0 fc limit is too high to properly address the spill light impact in residential neighborhoods, that is, it will produce lighting impacts that will disturb the tranquility of adjacent property owners.

The potential for light trespass can be analyzed by computing lighting intensity (illuminance) on horizontal and vertical planes at various locations of concern and comparing the result to the ambient conditions. For the project site, due to its suburban character, the natural ambient nighttime conditions are similar to bright moonlight.

The most economically feasible maximum value of trespass light to achieve minimal neighborhood impact would be from the above discussion, be something equal to or less than 0.2 footcandle, making the resulting illumination similar to that that would be created by residential street lights.

Lower values are not economically feasible for softball facilities because of the need to provide sufficient lighting high above the field so that balls can be properly and safely seen by players.

Proposed Lighting Plan for Softball Fields:

Major Considerations

Major considerations in the design of the softball field lighting systems includes: illumination (or lighting) level, pole heights; light output of lamps; optical control of fixtures and glare shielding; and proximity to surrounding land uses and residential neighborhoods.

Site Conditions

The area to immediately to the south of the sports fields consists of railroad tracks about 75 feet from Field 2’s outfield fence. Beyond that the ground rises rapidly, so that the nearest houses on Marina Vista Avenue are found at about 250 feet from outfield fence with elevation rising 20 to 30 feet above the field level. The next houses on Escobar Street are found at about 350 feet from outfield fence - with elevation rising 30 to 40 feet above the field level. Followed by houses on Lafayette Street at about 500 – 600 feet from outfield fence - with elevation rising 78 feet above the field level.



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Site Plan

As illustrated in the Electrical Site Plan, it is recommended that the proposed sports lighting system for the softball fields use six poles for Fields 1, 2, and 4, and eight poles for Field 3. The eight pole scheme for Field 3 provides greater mitigation of spill light toward hillside homes the southern direction, from the outfield poles by providing more precise aiming of the outfield light fixtures. The overall plan allows for an economical solution for the combination of the number of poles, fixture performance, and spill light control.

Light Fixtures

The proposed sports light fixtures use 1500watts metal halide lamps, and have aluminum housings with glare control shields, as illustrated in the manufacture product brochure included with this report. The fixtures are approximately 23 inches in diameter with a unique optical system to allow precise beam control. The fixtures are aimed downward toward the fields and designed to maximally redirect light toward the field by the special nature of their internal reflector system, and by means of external louvers and shields. Although downward aimed, there is still a resulting upward light component that is necessary for proper lighting of the ball when it is hit high above the level of the field. This is critical for proper illumination performance, as well as for safety..

Poles

Softball poles in the recommended plan are to be 70-80 feet high. The selection of pole height was based on the need to provide adequate illumination at an economical cost, and to satisfactorily mitigate spill light toward residential properties adjacent to the fields. The configuration of the poles and light fixture clusters are illustrated in the MUSCO Sports Lighting product brochure.

Design Criteria:

The design of the proposed sports lighting systems shall provide light levels in accordance with recommendations of the IESNA RP-6 *Current Recommended Practice for Sports Lighting*. Using the IESNA criteria, the softball field design will provide an average constant illuminance of approximately 50 footcandles infield/30 footcandles outfield. These levels are appropriate for the site given the relatively small number of spectators (less than 2,000), and the proximity of the bleachers to the field. The computer predicted results for the lighting of the field are indicated in MUSCO Sports Lighting's Illumination Summary – softball, horizontal footcandles, in the Appendix.

Spill Light

In this report, spill light is concerned with illumination produced directly from fixtures. It does not consider the visibility of the lighted playing surface itself, though clearly this a something that neighbors with a view of fields will notice.



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The computer predicted spill light values (maximum vertical footcandles) were analyzed by MUSCO Sports Lighting at various distances and elevations to take into consideration the hillside residences to the south of the softball fields. Maximum vertical footcandles is a measurement which represents the illumination on a vertical surface (such as the side of a house). Such computer predicted results can be field verified with a standard hand held illumination meter.

The values vary from <0.58 fc along Marina Vista Avenue to 0.25 fc along Escobar Street, to <.05 fc along Lafayette Street. Refer to MUSCO Sports Lighting's Illumination Summary, in Appendix, and the Photometric Plan. The values along Marina Vista Avenue and Escobar presently exceed the proposed maximum limit of <0.2 fc. Therefore, the project team should work with the manufacture to adjust aim/shielding of fixtures, and potentially pole heights, to bring values into conformance.

Project Impacts

The installation of the softball field lights will produce spill light for hillside residents living to the south of fields. Mitigation measures shall be imposed on project to limit maximum spill light (measured in vertical footcandles) to equal to or less than 0.2 fc along Marina Vista Avenue and Escobar Street.

Indirect Skylight

Although not defined as trespass light, there will be indirect skylight, or a corona effect, due to reflected light off the fields into the atmosphere. This effect would be visible for some great distance from the fields. However, its magnitude is unpredictable, as it is dependent on weather conditions. Residents would be aware of the indirect skylight when the sports lights are in operation. This is considered a *less-than-significant* impact.

Mitigation Measures

Fixtures are to be equipped with special internal optical reflectors and external visors to effectively control trespass light. The proposed field lights shall be provided with automatic time switch controls to turn OFF the lights at a pre-set time. The controls shall provide only for manually turning ON the lights.

To insure that the maximum spill light on residences at the identified hillside streets remains at or below 0.2 footcandle, field testing of the actual performance of the system is mandatory.

Any needed re-aiming and/or adjust the luminaires during the initial nighttime testing of the field lights shall be part of the project scope. This will insure that no excessive spill light remains uncorrected.

End of Report

EQUIPMENT LIST FOR AREAS SHOWN

Pole		Luminaires						
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	-	70'	1500W MZ	3/4*	3	4
2	B1-B2	80'	-	80'	1500W MZ	6/6*	6	6
2	C1-C2	70'	-	70'	1500W MZ	6	6	0
TOTALS						50	30	20

* This structure utilizes a back-to-back mounting configuration



MY PROJECT	
Name:	Martinez Waterfront Park
Location:	Martinez, CA

GRID SUMMARY	
Name:	Field 1
Size:	Irregular 284' / 295' / 298'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

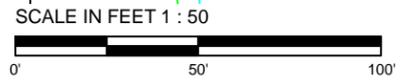
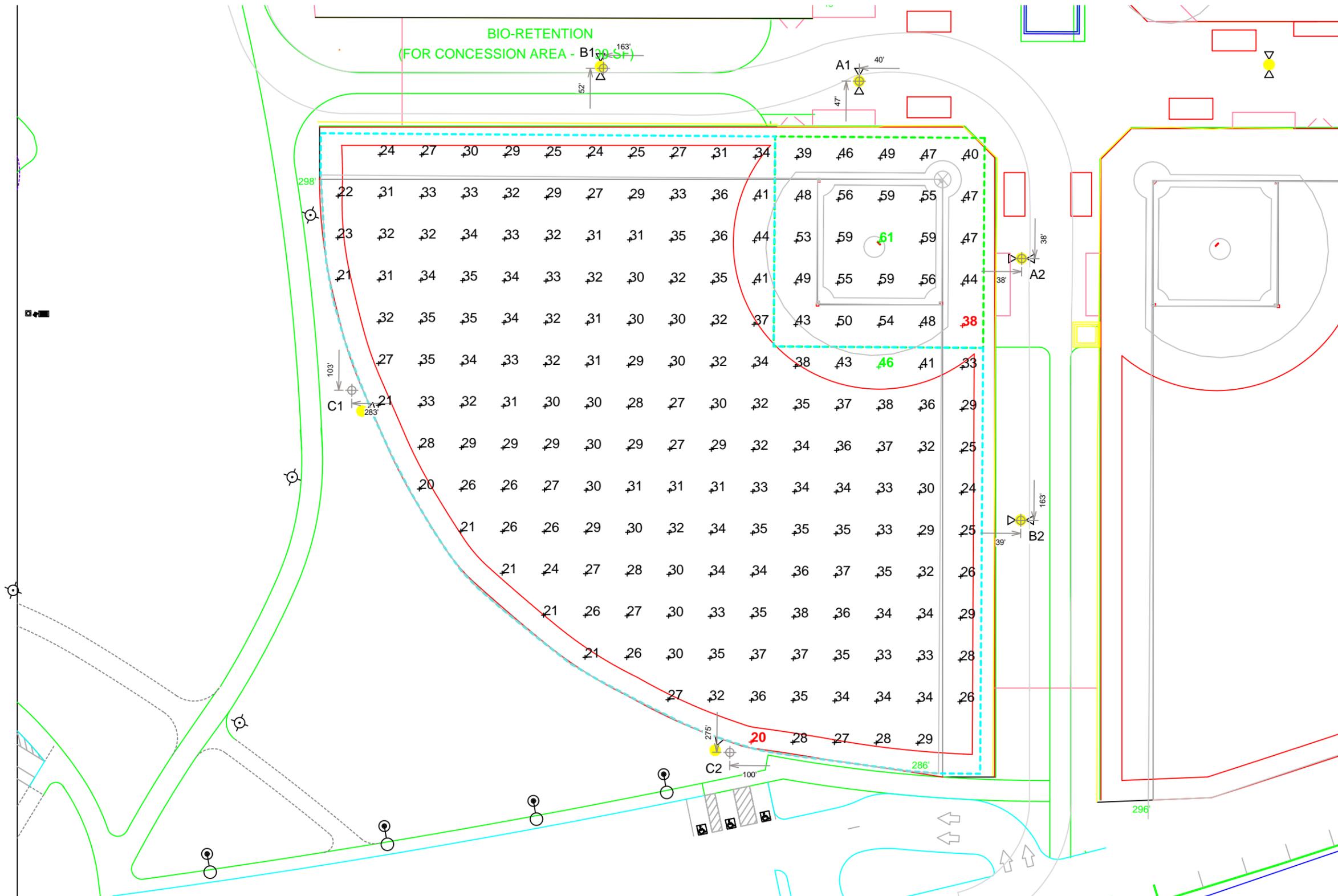
CONSTANT ILLUMINATION		
SUMMARY	HORIZONTAL FOOTCANDLES	
	Infield	Outfield
Guaranteed Average:	50	30
Scan Average:	50.49	31.15
Maximum:	61.43	45.62
Minimum:	37.61	19.78
Avg / Min:	1.34	1.58
Guaranteed Max / Min:	2	2.5
Max / Min:	1.63	2.31
UG (adjacent pts):	1.29	1.81
CU:	0.65	
No. of Points:	25	170
LUMINAIRE INFORMATION		
Luminaire Type:	Green Generation	
Design Usage Hours:	5,000 hours	
Design Lumens:	134,000	
Avg Lamp Tilt Factor:	1.000	
No. of Luminaires:	30	
Avg KW:	46.92 (51.0 max)	

Guaranteed Performance: The Guaranteed Average CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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



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

ENGINEERED DESIGN		
By:	D.Alexander	
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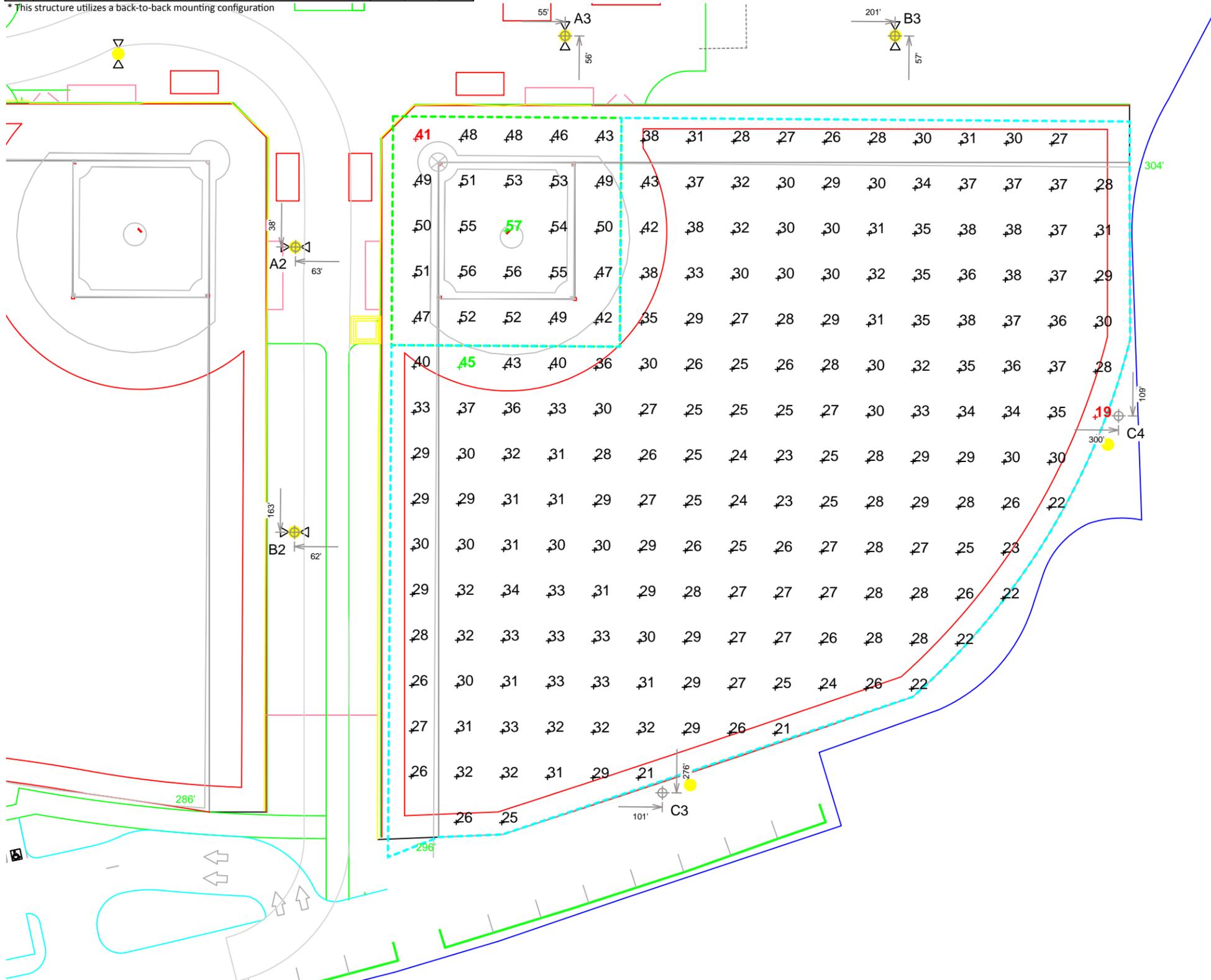
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ILLUMINATION SUMMARY



EQUIPMENT LIST FOR AREAS SHOWN								
Pole			Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A2	70'	-	70'	1500W MZ	3/4*	4	3
1	A3	70'	-	70'	1500W MZ	5/4*	4	5
1	B2	80'	-	80'	1500W MZ	6/6*	6	6
1	B3	80'	-	80'	1500W MZ	9/6*	6	9
2	C3-C4	70'	-	70'	1500W MZ	-	6	0
6	TOTALS						55	32

* This structure utilizes a back-to-back mounting configuration



MY PROJECT	
Name:	Martinez Waterfront Park
Location:	Martinez, CA

GRID SUMMARY	
Name:	Field 2
Size:	Irregular 304' / 314' / 306'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

CONSTANT ILLUMINATION		
SUMMARY	HORIZONTAL FOOTCANDLES	
	Infield	Outfield
Guaranteed Average:	30	
Scan Average:	50.17	30.14
Maximum:	57.01	44.57
Minimum:	40.76	18.93
Avg / Min:	1.23	1.59
Guaranteed Max / Min:	2.5	
Max / Min:	1.40	2.35
UG (adjacent pts):	1.19	1.84
CU:	0.64	
No. of Points:	25	186
LUMINAIRE INFORMATION		
Luminaire Type:	Green Generation	
Design Usage Hours:	5,000 hours	
Design Lumens:	134,000	
Avg Lamp Tilt Factor:	1.000	
No. of Luminaires:	32	
Avg KW:	50.05 (54.4 max)	

Guaranteed Performance: The Guaranteed Average CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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

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ILLUMINATION SUMMARY

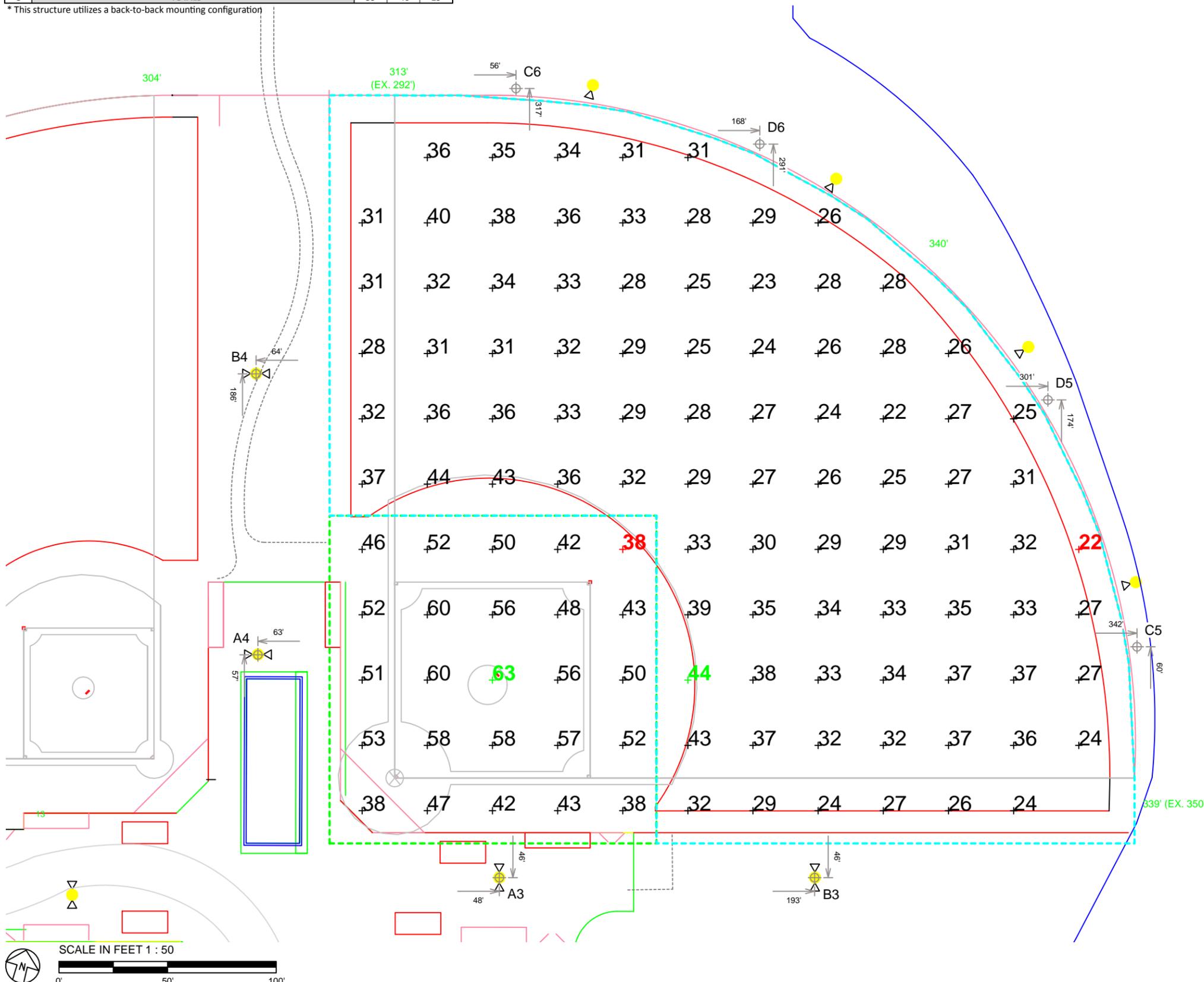
Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗





EQUIPMENT LIST FOR AREAS SHOWN							
Pole				Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID
1	A3	70'	-	70'	1500W MZ	5/4*	5
1	A4	70'	-	70'	1500W MZ	3/5*	3
2	B3-B4	80'	-	80'	1500W MZ	9/6*	9
4	C5-C6	70'	-	70'	1500W MZ	3	3
8	D5-D6	70'	-	70'	1500W MZ	3	3
TOTALS						59	40

* This structure utilizes a back-to-back mounting configuration



MY PROJECT	
Name:	Martinez Waterfront Park
Location:	Martinez, CA

GRID SUMMARY	
Name:	Field 3
Size:	Irregular 314' / 338' / 341'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

CONSTANT ILLUMINATION		
SUMMARY	HORIZONTAL FOOTCANDLES	
	Infield	Outfield
Guaranteed Average:	50	30
Scan Average:	50.07	31.15
Maximum:	62.63	44.12
Minimum:	37.98	22.32
Avg / Min:	1.32	1.40
Guaranteed Max / Min:	2	2.5
Max / Min:	1.65	1.98
UG (adjacent pts):	1.38	1.52
CU:	0.67	
No. of Points:	25	88

LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	40
Avg KW:	62.56 (68.0 max)

Guaranteed Performance: The Guaranteed Average CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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

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EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
1	A1	70'	-	70'	1500W MZ	3/4*	4	3	
1	A4	70'	-	70'	1500W MZ	3/5*	3	5	
1	B1	80'	-	80'	1500W MZ	6/6*	6	6	
1	B4	80'	-	80'	1500W MZ	9/6*	6	9	
2	C7-C8	70'	-	70'	1500W MZ	6	6	0	
6	TOTALS						54	31	23

* This structure utilizes a back-to-back mounting configuration

MY PROJECT	
Name:	Martinez Waterfront Park
Location:	Martinez, CA

GRID SUMMARY	
Name:	Field 4
Size:	Irregular 300' / 300' / 305'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

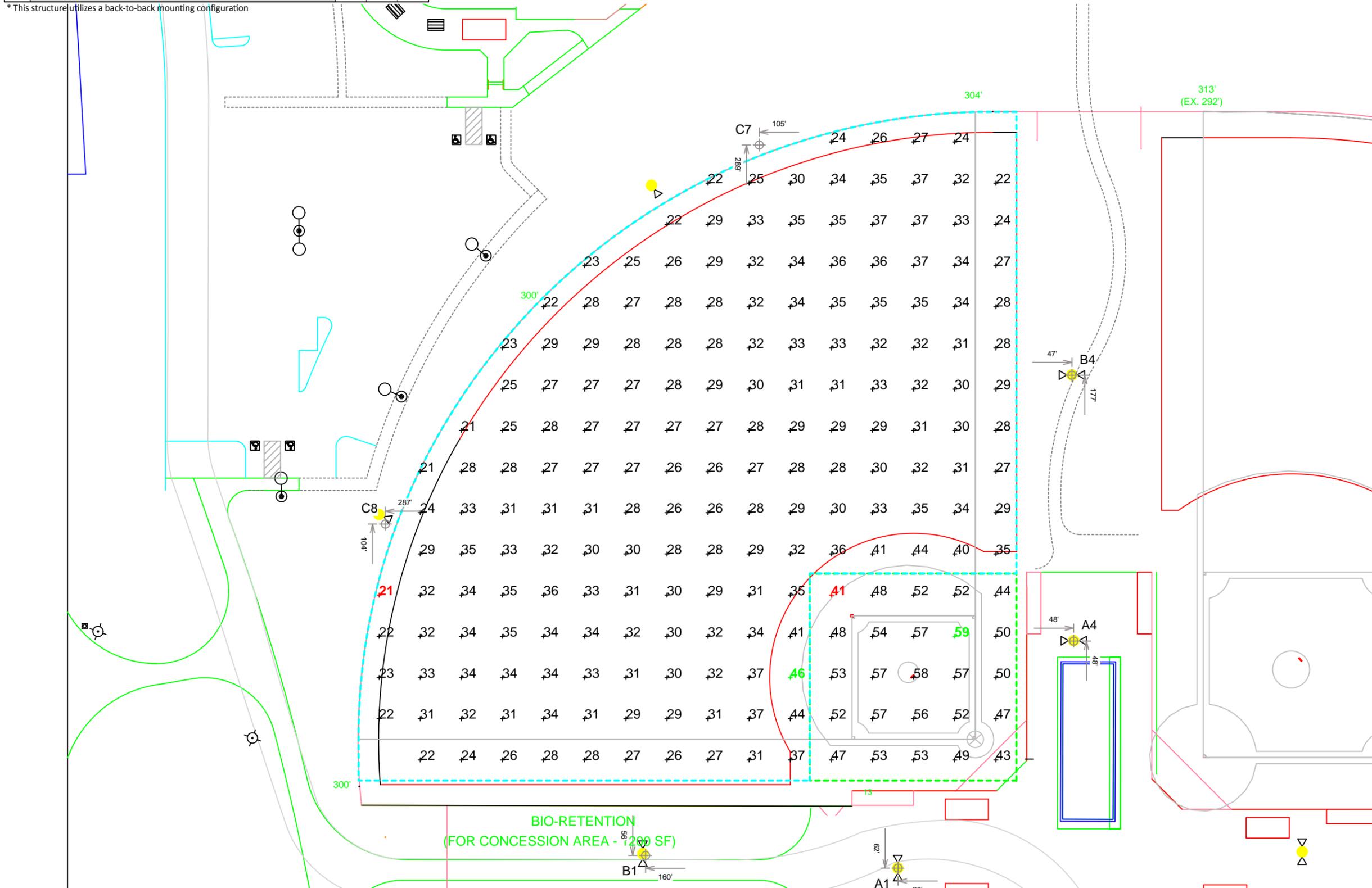
CONSTANT ILLUMINATION		
SUMMARY	HORIZONTAL FOOTCANDLES	
	Infield	Outfield
Guaranteed Average:	50	30
Scan Average:	51.61	30.29
Maximum:	58.78	46.35
Minimum:	41.22	20.78
Avg / Min:	1.25	1.46
Guaranteed Max / Min:	2	2.5
Max / Min:	1.43	2.23
UG (adjacent pts):	1.20	1.54
CU:	0.66	
No. of Points:	25	183
LUMINAIRE INFORMATION		
Luminaire Type:	Green Generation	
Design Usage Hours:	5,000 hours	
Design Lumens:	134,000	
Avg Lamp Tilt Factor:	1.000	
No. of Luminaires:	31	
Avg KW:	48.48 (52.7 max)	

Guaranteed Performance: The Guaranteed Average CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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



SCALE IN FEET 1 : 50



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

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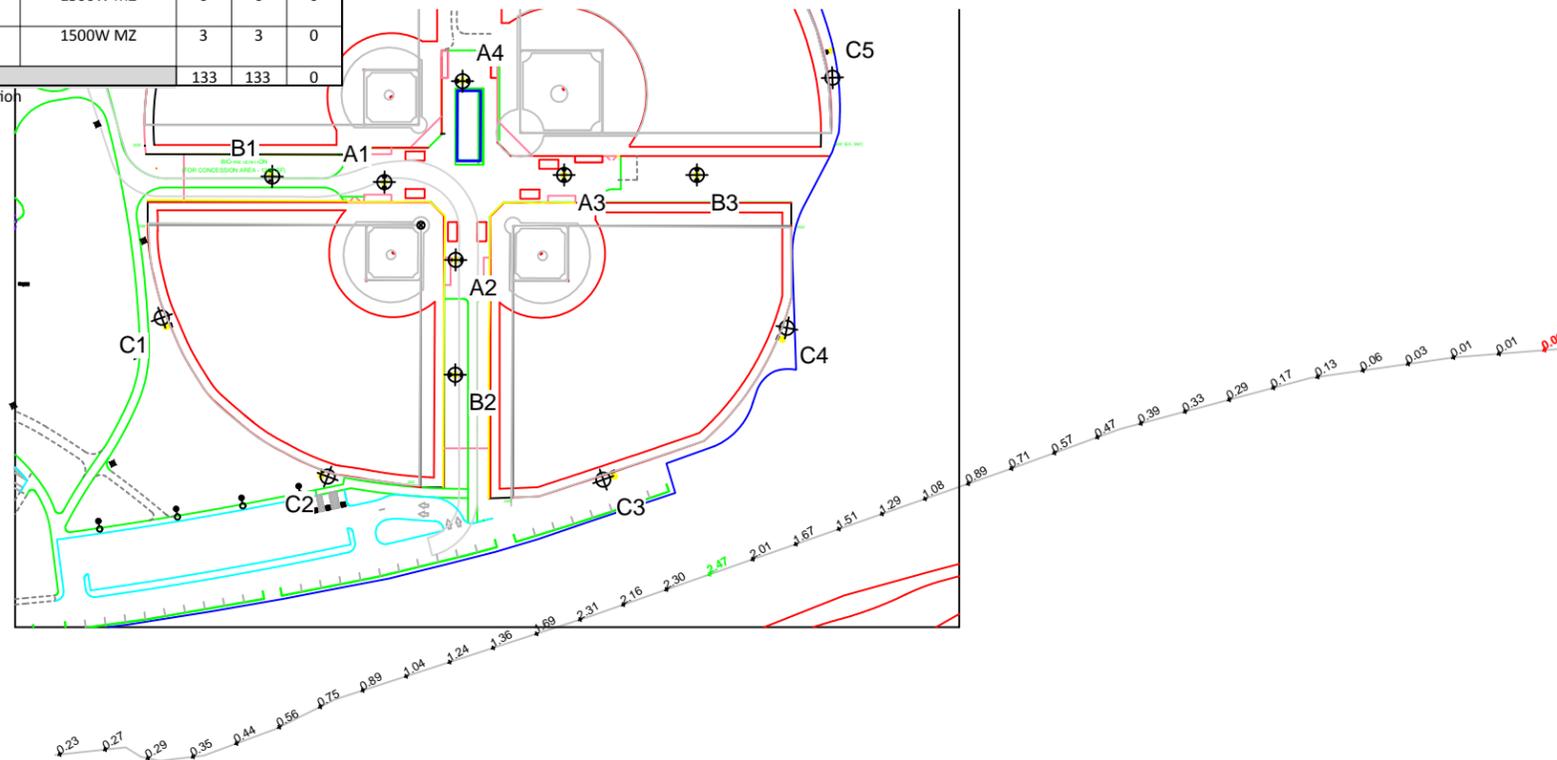
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ILLUMINATION SUMMARY



EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	A1-A2	70'	-	70'	1500W MZ	3/4*	7	0	
1	A3	70'	-	70'	1500W MZ	5/4*	9	0	
1	A4	70'	-	70'	1500W MZ	3/5*	8	0	
2	B1-B2	80'	-	80'	1500W MZ	6/6*	12	0	
2	B3-B4	80'	-	80'	1500W MZ	9/6*	15	0	
6	C1-C4	70'	-	70'	1500W MZ	6	6	0	
4	C5-C6	70'	-	70'	1500W MZ	3	3	0	
18	TOTALS						133	133	0

* This structure utilizes a back-to-back mounting configuration



MY PROJECT	
Name:	Martinez Waterfront Park
Location:	Martinez, CA

GRID SUMMARY	
Name:	Spill at 10' Topo Line
Spacing:	50.0'
Height:	-20.0' above grade

CONSTANT ILLUMINATION	
SUMMARY	MAX VERTICAL FOOTCANDLES
Entire Grid	
Scan Average:	0.8568
Maximum:	2.4705
Minimum:	0.0039
No. of Points:	35
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	133
Avg KW:	208.01 (226.1 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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



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

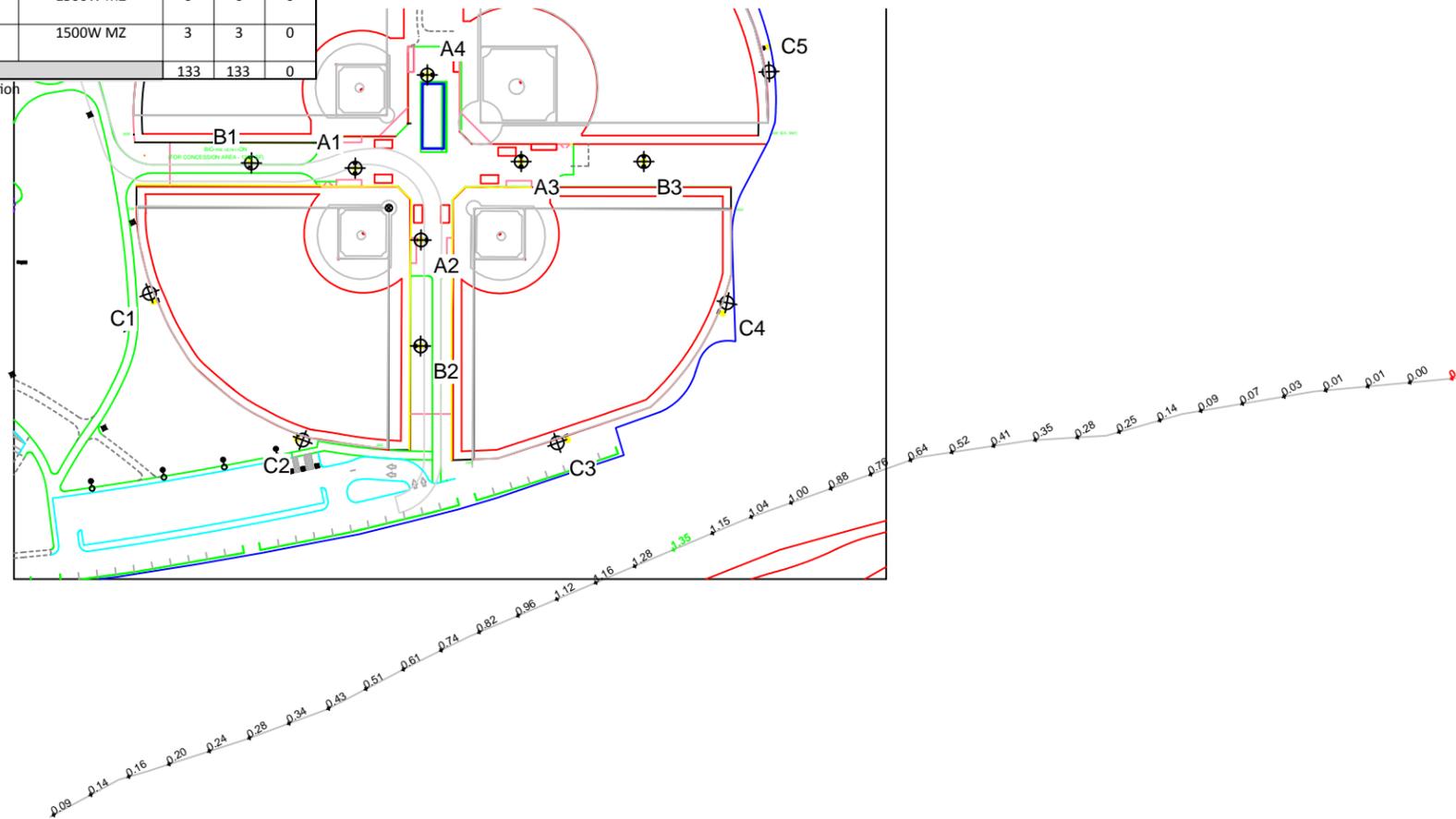
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EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	A1-A2	70'	-	70'	1500W MZ	3/4*	7	0	
1	A3	70'	-	70'	1500W MZ	5/4*	9	0	
1	A4	70'	-	70'	1500W MZ	3/5*	8	0	
2	B1-B2	80'	-	80'	1500W MZ	6/6*	12	0	
2	B3-B4	80'	-	80'	1500W MZ	9/6*	15	0	
6	C1-C4	70'	-	70'	1500W MZ	6	6	0	
4	C5-C8	70'	-	70'	1500W MZ	3	3	0	
18	TOTALS						133	133	0

* This structure utilizes a back-to-back mounting configuration



MY PROJECT	
Name:	Martinez Waterfront Park
Location:	Martinez, CA

GRID SUMMARY	
Name:	Spill at 20' Topo Line
Spacing:	50.0'
Height:	-10.0' above grade

CONSTANT ILLUMINATION	
SUMMARY	MAX VERTICAL FOOTCANDLES
Entire Grid	
Scan Average:	0.5020
Maximum:	1.3511
Minimum:	0.0034
No. of Points:	36
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	133
Avg KW:	208.01 (226.1 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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



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

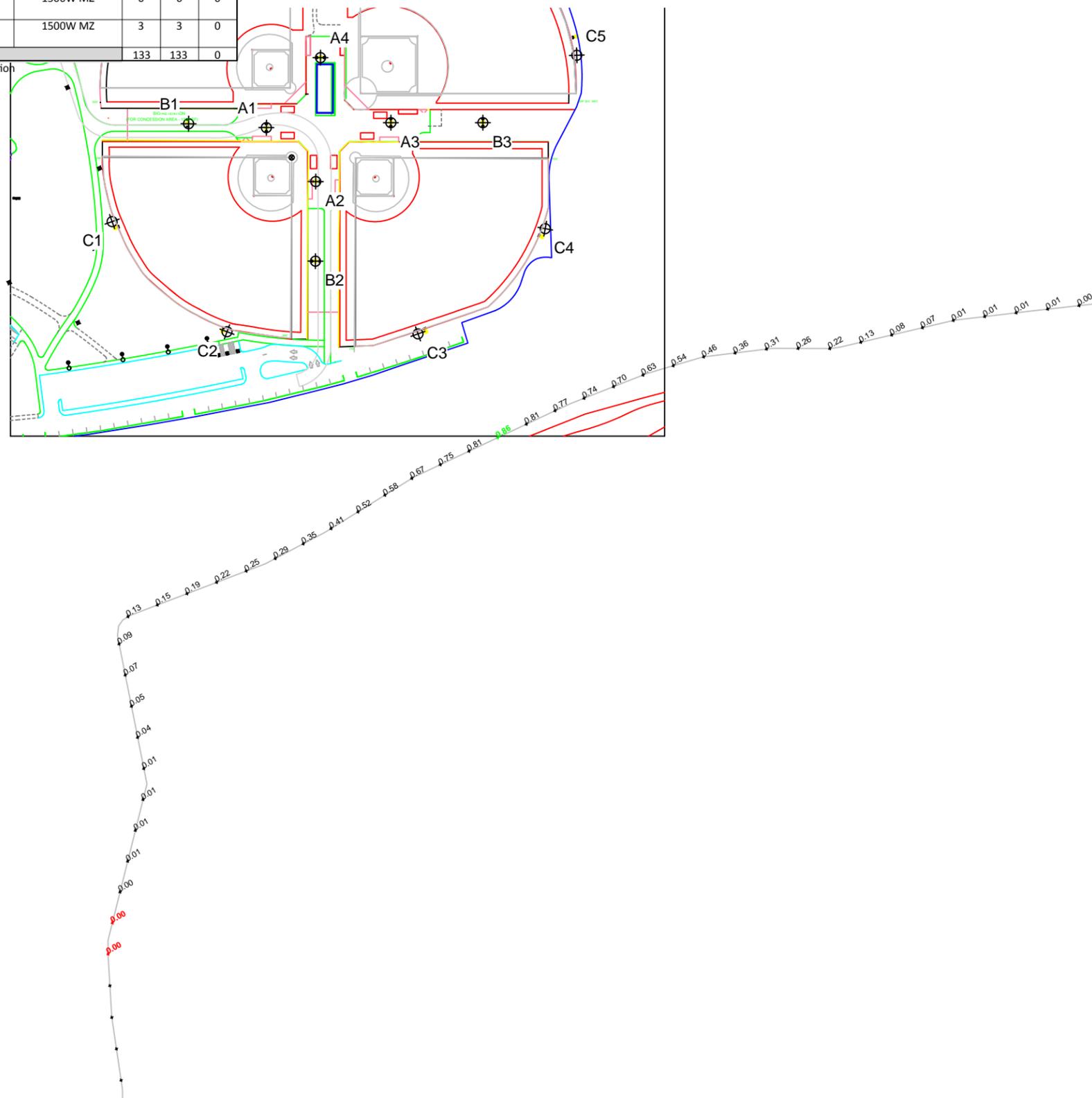
ENGINEERED DESIGN		
By:	D.Alexander	
File # / Date:	168410D	15-Jul-15

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EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	A1-A2	70'	-	70'	1500W MZ	3/4*	7	0	
1	A3	70'	-	70'	1500W MZ	5/4*	9	0	
1	A4	70'	-	70'	1500W MZ	3/5*	8	0	
2	B1-B2	80'	-	80'	1500W MZ	6/6*	12	0	
2	B3-B4	80'	-	80'	1500W MZ	9/6*	15	0	
6	C1-C4	70'	-	70'	1500W MZ	6	6	0	
4	C5-C6	70'	-	70'	1500W MZ	3	3	0	
18	TOTALS						133	133	0

* This structure utilizes a back-to-back mounting configuration



MY PROJECT	
Name:	Martinez Waterfront Park
Location:	Martinez, CA

GRID SUMMARY	
Name:	Spill at 30' Topo Line
Spacing:	50.0'
Height:	0.0' above grade

CONSTANT ILLUMINATION	
SUMMARY	MAX VERTICAL FOOTCANDLES
Entire Grid	
Scan Average:	0.2859
Maximum:	0.8577
Minimum:	0.0000
No. of Points:	55
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	133
Avg KW:	208.01 (226.1 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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



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

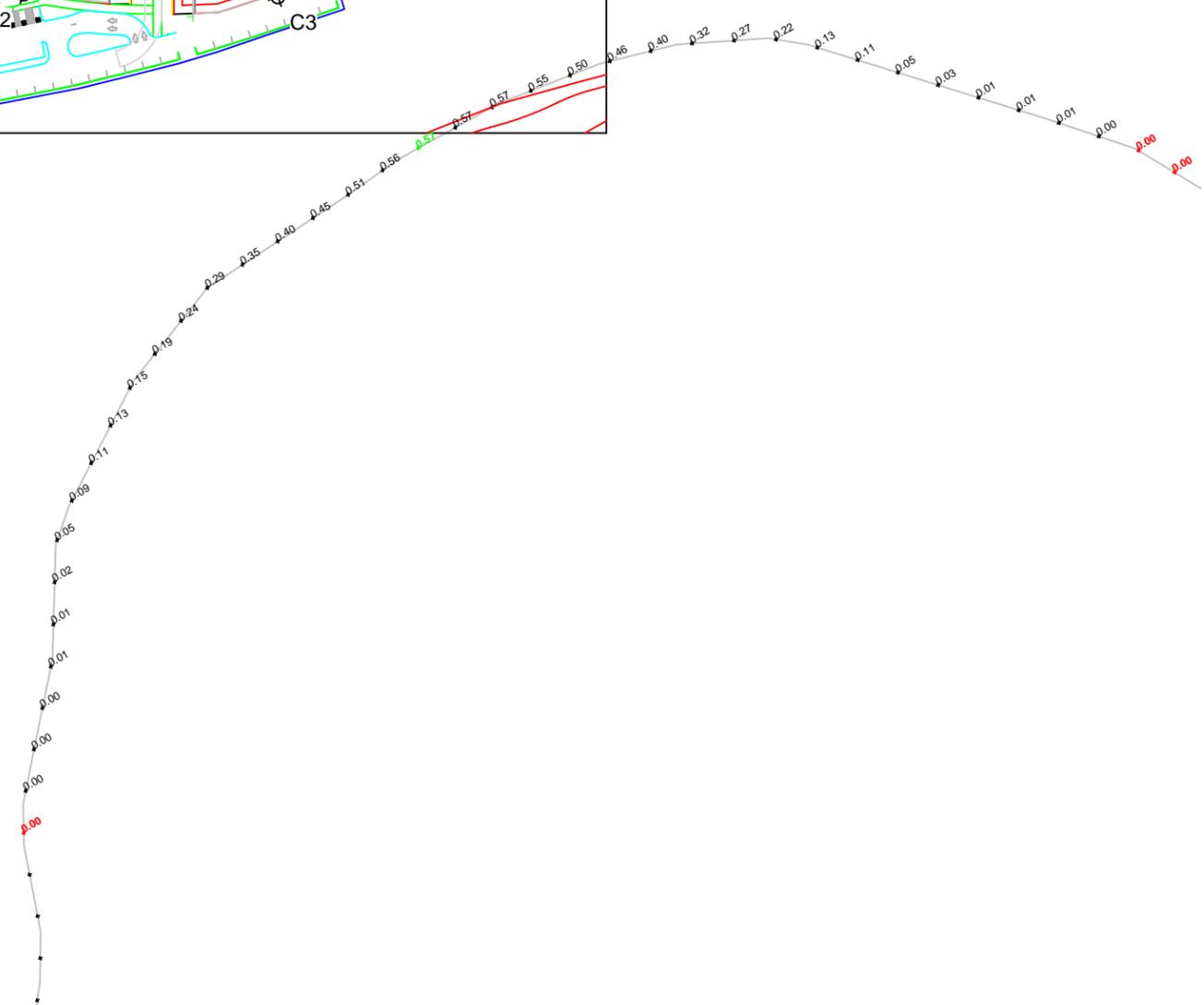
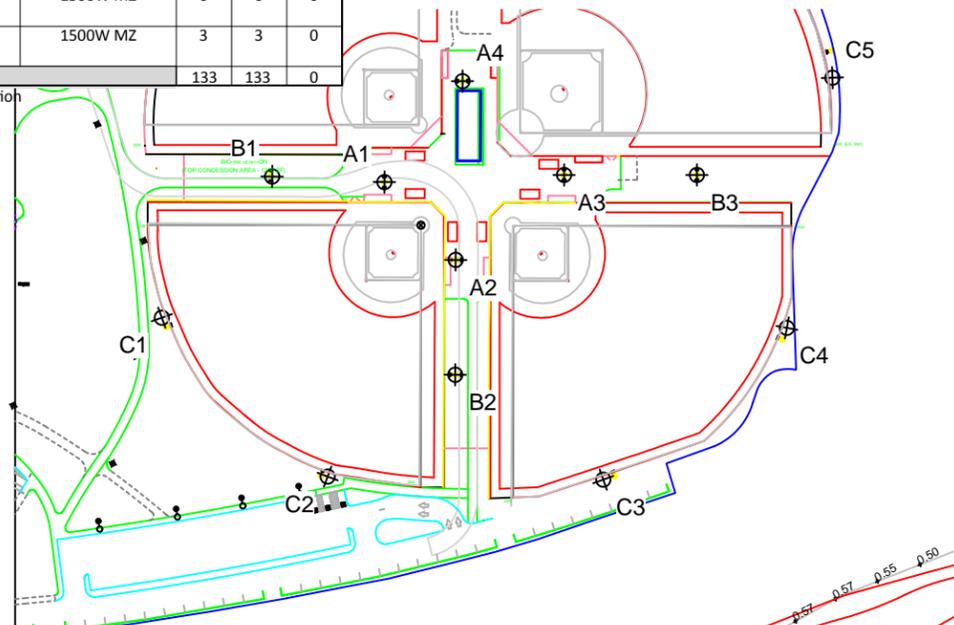
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File # / Date:	168410D	15-Jul-15

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EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	A1-A2	70'	-	70'	1500W MZ	3/4*	7	0	
1	A3	70'	-	70'	1500W MZ	5/4*	9	0	
1	A4	70'	-	70'	1500W MZ	3/5*	8	0	
2	B1-B2	80'	-	80'	1500W MZ	6/6*	12	0	
2	B3-B4	80'	-	80'	1500W MZ	9/6*	15	0	
6	C1-C4	70'	-	70'	1500W MZ	6	6	0	
4	C5-C8	70'	-	70'	1500W MZ	3	3	0	
18	TOTALS						133	133	0

* This structure utilizes a back-to-back mounting configuration



MY PROJECT	
Name:	Martinez Waterfront Park
Location:	Martinez, CA

GRID SUMMARY	
Name:	Spill at 40' Topo Line
Spacing:	50.0'
Height:	10.0' above grade

CONSTANT ILLUMINATION	
SUMMARY	MAX VERTICAL FOOTCANDLES
Entire Grid	
Scan Average:	0.2086
Maximum:	0.5721
Minimum:	0.0000
No. of Points:	51
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	133
Avg KW:	208.01 (226.1 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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



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

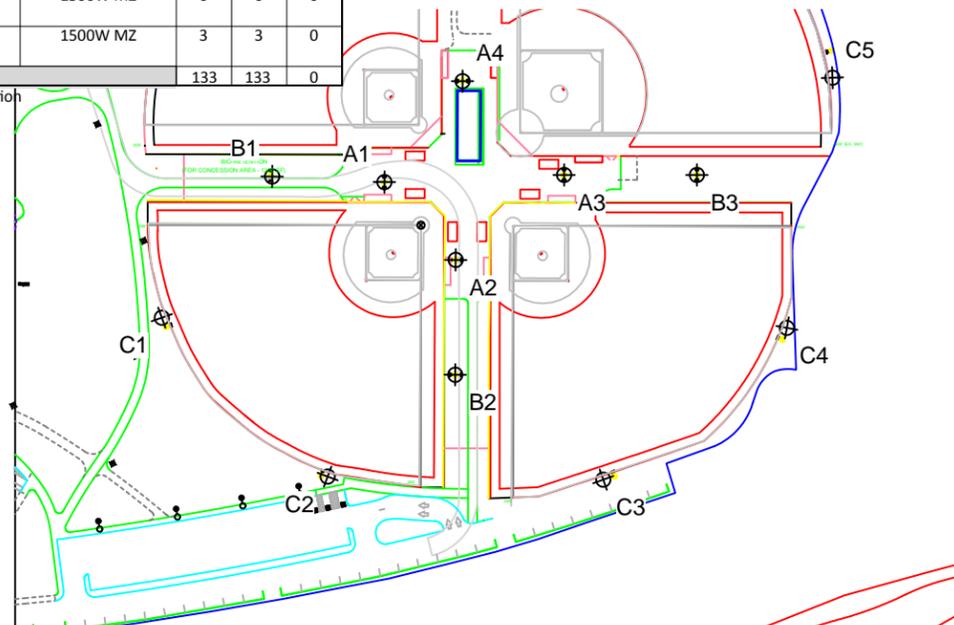
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By:	D.Alexander	
File # / Date:	168410D	15-Jul-15

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EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	A1-A2	70'	-	70'	1500W MZ	3/4*	7	0	
1	A3	70'	-	70'	1500W MZ	5/4*	9	0	
1	A4	70'	-	70'	1500W MZ	3/5*	8	0	
2	B1-B2	80'	-	80'	1500W MZ	6/6*	12	0	
2	B3-B4	80'	-	80'	1500W MZ	9/6*	15	0	
6	C1-C4	70'	-	70'	1500W MZ	6	6	0	
4	C5-C8	70'	-	70'	1500W MZ	3	3	0	
18	TOTALS						133	133	0

* This structure utilizes a back-to-back mounting configuration



MY PROJECT	
Name:	Martinez Waterfront Park
Location:	Martinez, CA

GRID SUMMARY	
Name:	Spill at 60' Topo Line
Spacing:	50.0'
Height:	30.0' above grade

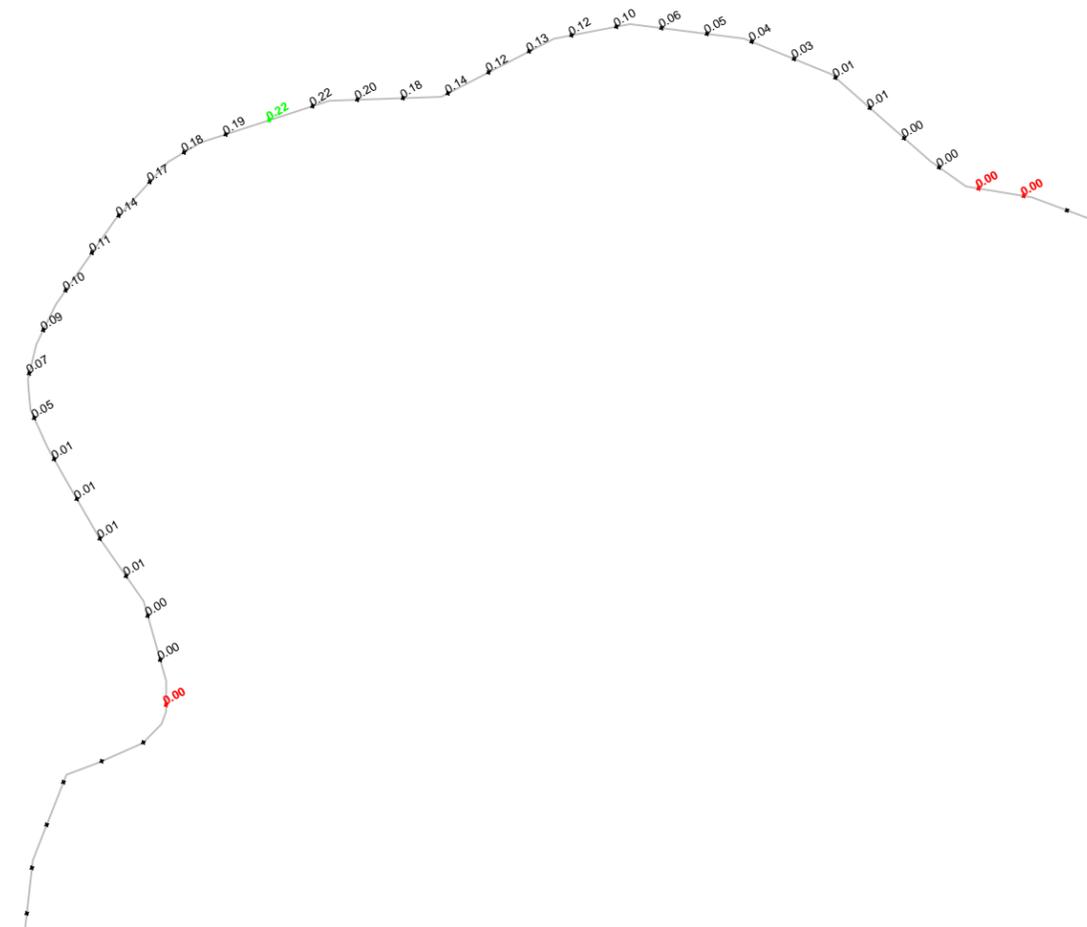
CONSTANT ILLUMINATION	
SUMMARY	MAX VERTICAL FOOTCANDLES
Entire Grid	
Scan Average:	0.0788
Maximum:	0.2193
Minimum:	0.0000
No. of Points:	49
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	133
Avg KW:	208.01 (226.1 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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



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

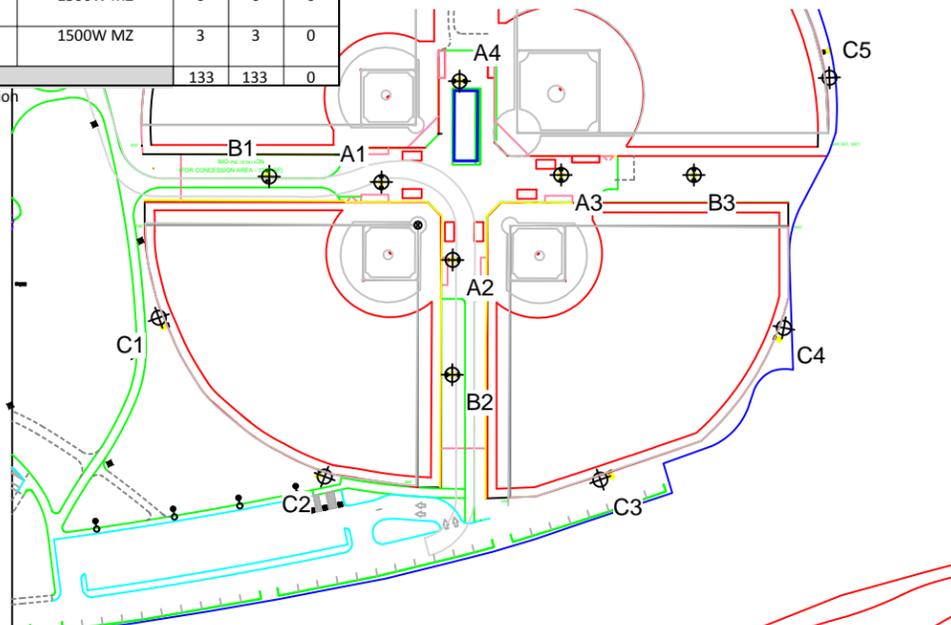
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EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	A1-A2	70'	-	70'	1500W MZ	3/4*	7	0	
1	A3	70'	-	70'	1500W MZ	5/4*	9	0	
1	A4	70'	-	70'	1500W MZ	3/5*	8	0	
2	B1-B2	80'	-	80'	1500W MZ	6/6*	12	0	
2	B3-B4	80'	-	80'	1500W MZ	9/6*	15	0	
6	C1-C4	70'	-	70'	1500W MZ	6	6	0	
4	C5-C8	70'	-	70'	1500W MZ	3	3	0	
4	D5-D6	70'	-	70'	1500W MZ	3	3	0	
18	TOTALS						133	133	0

* This structure utilizes a back-to-back mounting configuration



MY PROJECT	
Name:	Martinez Waterfront Park
Location:	Martinez, CA

GRID SUMMARY	
Name:	Spill at 80' Topo Line
Spacing:	50.0'
Height:	50.0' above grade

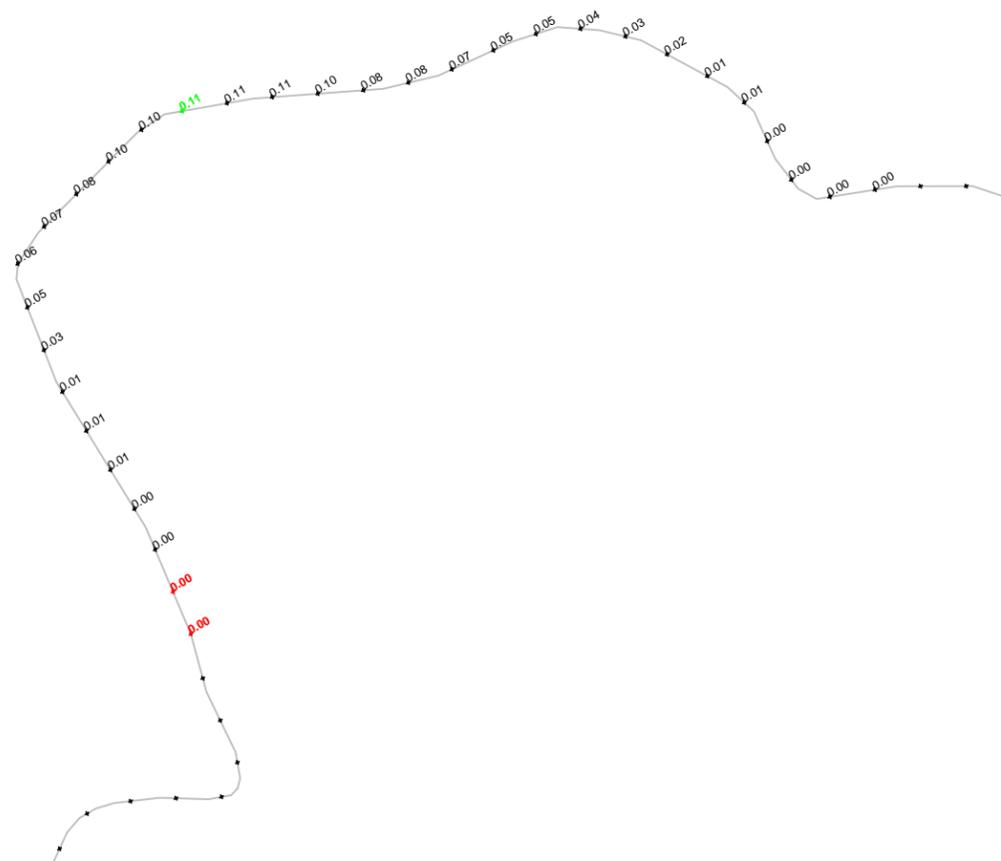
CONSTANT ILLUMINATION	
SUMMARY	MAX VERTICAL FOOTCANDLES
Entire Grid	
Scan Average:	0.0436
Maximum:	0.1110
Minimum:	0.0000
No. of Points:	50
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	133
Avg KW:	208.01 (226.1 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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



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

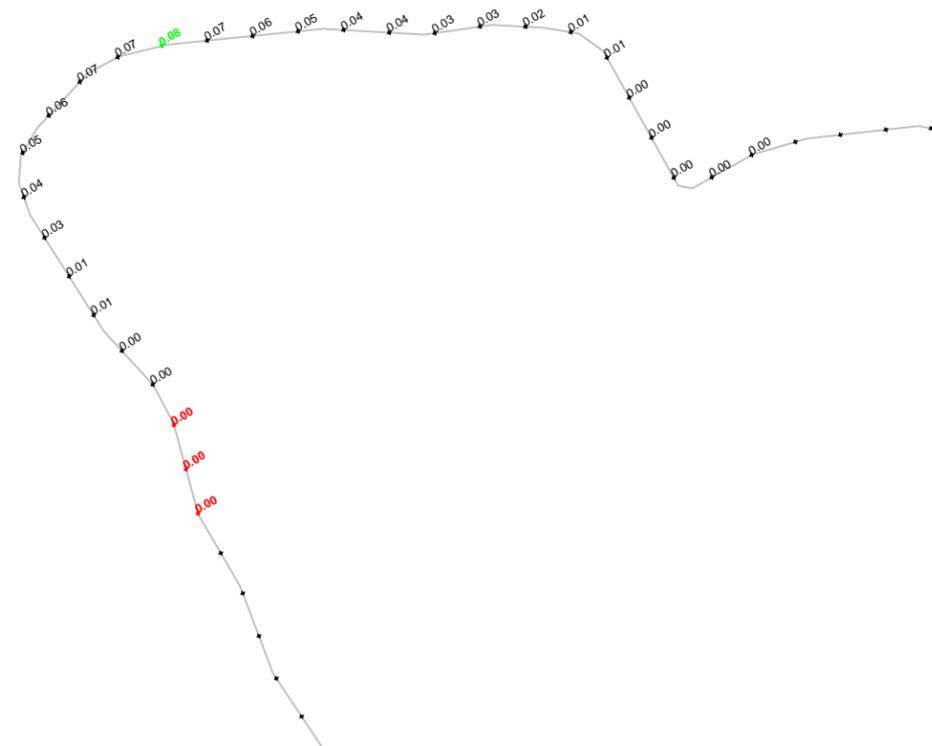
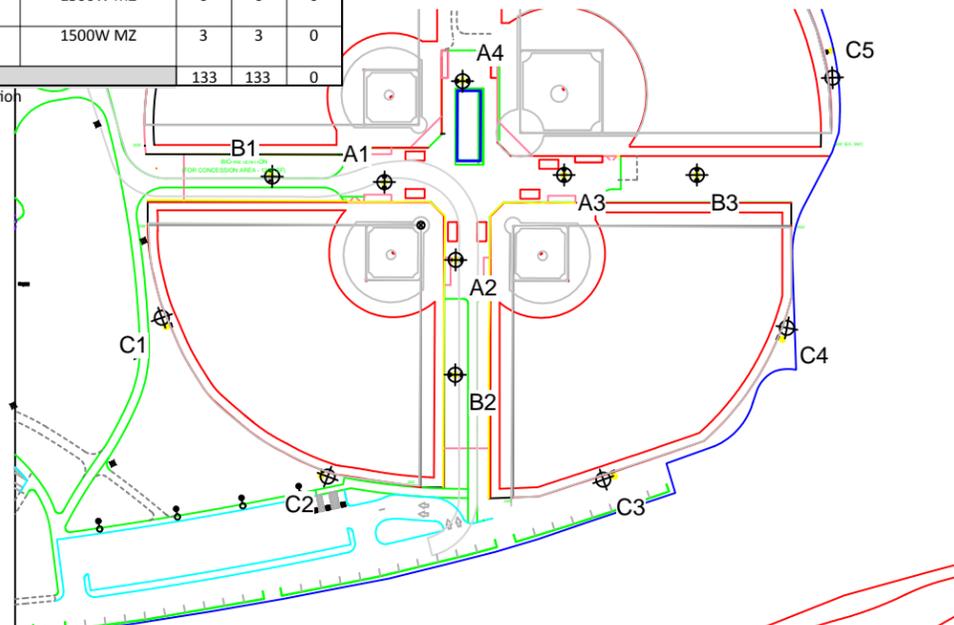
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EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	A1-A2	70'	-	70'	1500W MZ	3/4*	7	0	
1	A3	70'	-	70'	1500W MZ	5/4*	9	0	
1	A4	70'	-	70'	1500W MZ	3/5*	8	0	
2	B1-B2	80'	-	80'	1500W MZ	6/6*	12	0	
2	B3-B4	80'	-	80'	1500W MZ	9/6*	15	0	
6	C1-C4 C7-C8 D5-D6	70'	-	70'	1500W MZ	6	6	0	
18	TOTALS						133	133	0

* This structure utilizes a back-to-back mounting configuration



MY PROJECT	
Name:	Martinez Waterfront Park
Location:	Martinez, CA

GRID SUMMARY	
Name:	Spill at 90' Topo Line
Spacing:	50.0'
Height:	60.0' above grade

CONSTANT ILLUMINATION	
SUMMARY	MAX VERTICAL FOOTCANDLES
Entire Grid	
Scan Average:	0.0269
Maximum:	0.0786
Minimum:	0.0000
No. of Points:	54
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	133
Avg KW:	208.01 (226.1 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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



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

ENGINEERED DESIGN		
By:	D.Alexander	
File # / Date:	168410D	15-Jul-15

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MY PROJECT
 Name: **Martinez Waterfront Park**
 Location: **Martinez, CA**

EQUIPMENT LAYOUT
INCLUDES:
 · Field 1
 · Field 2
 · Field 3
 · Field 4
Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.
Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

QTY	LOCATION	Pole		Luminaires		QTY / POLE
		CLASS	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	
2	A1-A2	LSS70B	-	70'	1500W MZ	3/4*
1	A3	LSS70C	-	70'	1500W MZ	5/4*
1	A4	LSS70C	-	70'	1500W MZ	3/5*
2	B1-B2	LSS80B	-	80'	1500W MZ	6/6*
2	B3-B4	LSS80B	-	80'	1500W MZ	9/6*
6	C1-C4 C7-C8	LSS70B	-	70'	1500W MZ	6
4	C5-C6 D5-D6	LSS70AA	-	70'	1500W MZ	3
18	TOTALS					133

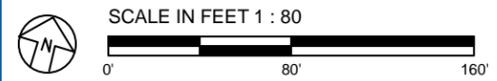
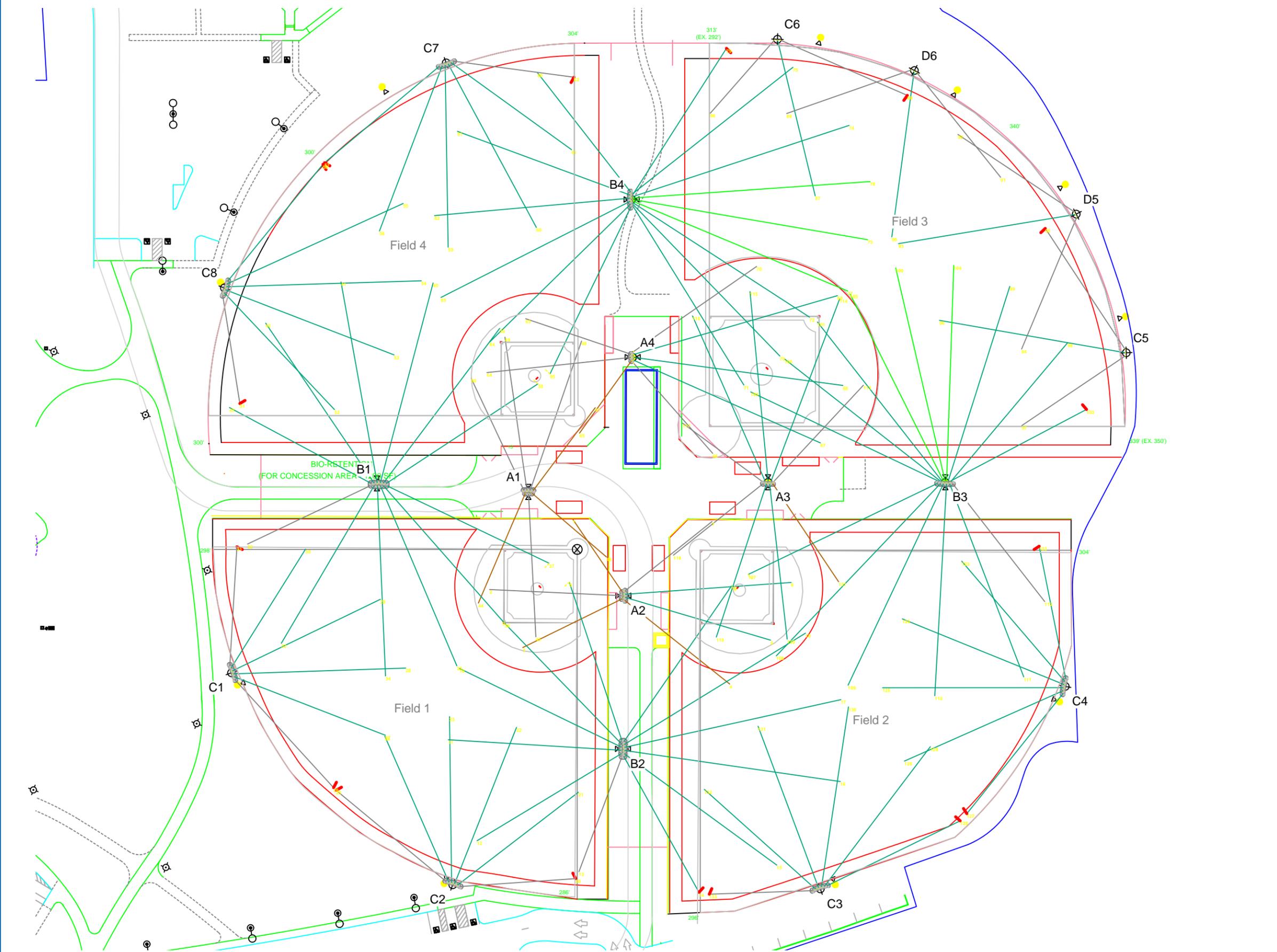
* This structure utilizes a back-to-back mounting configuration

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
1500 watt MZ	8.6	8.3	7.5	6.5	5.1	4.7	3.7

ENGINEERED DESIGN
 By: **D.Alexander**
 File # / Date: **168410D** 15-Jul-15

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

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Light-Structure Green™

A complete sports-lighting system designed and manufactured from foundation to poletop in 5 Easy Pieces™.

Unequaled performance . . . for your budget, for the environment.

- Cuts operating costs in half
- Reduces spill light by 50%
- Includes system monitoring and remote on/off control
- Provides guaranteed Constant Light™

5 Easy Pieces™

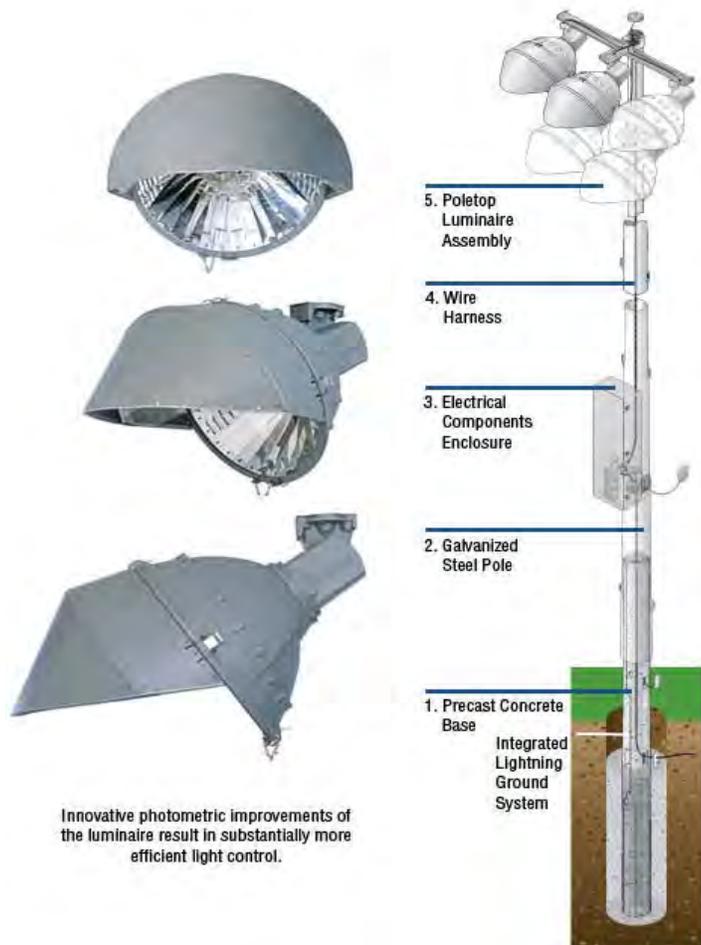
- Complete system from foundation-to-poletop
- Factory wired, aimed and tested
- Fast, trouble-free installation
- Comprehensive corrosion package

Warranty

Musco's Constant 25™ — 25-year product assurance and warranty program.

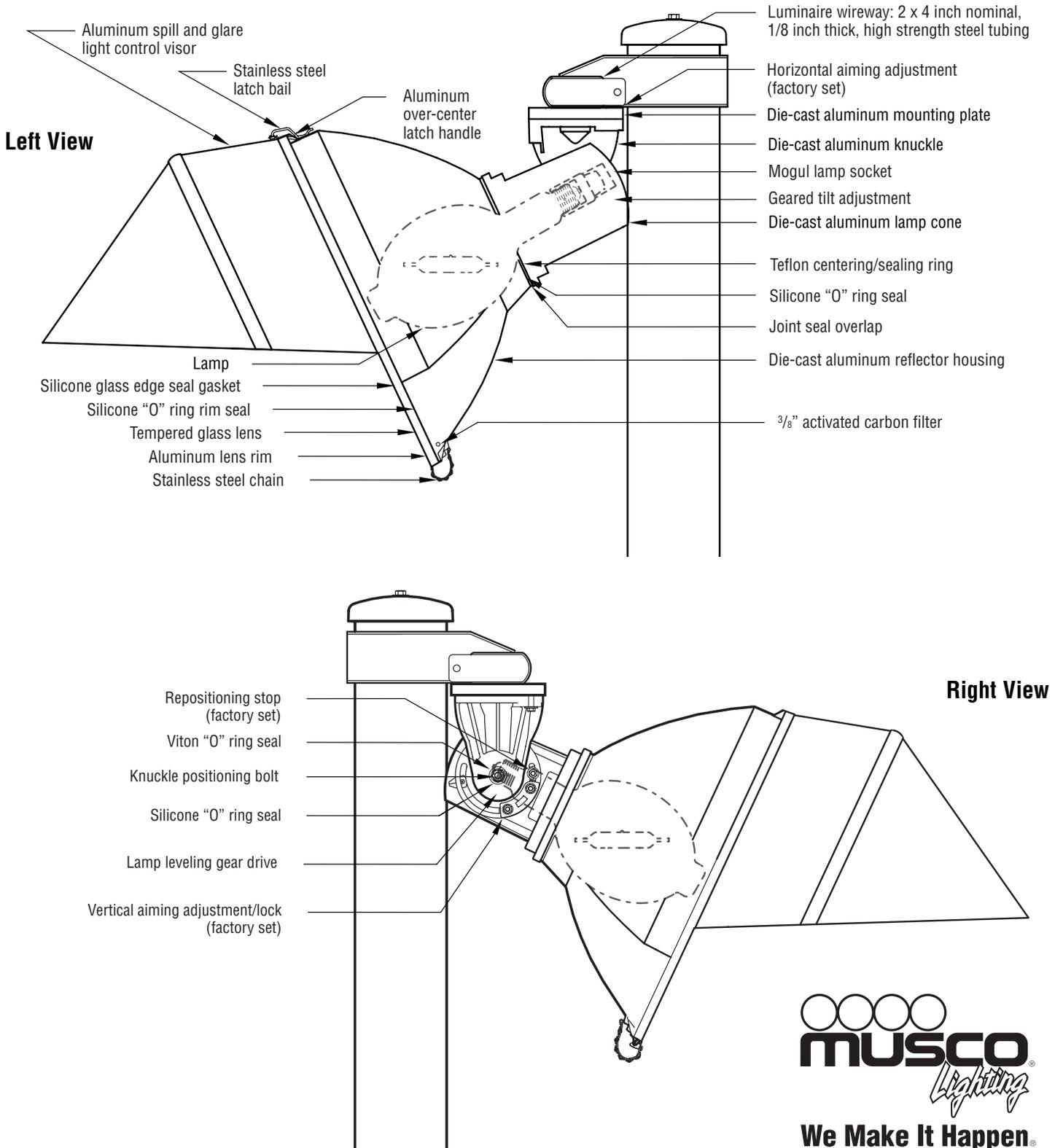
Provides 25 years of trouble-free lighting equipment operation, including parts, labor, and group lamp replacement.

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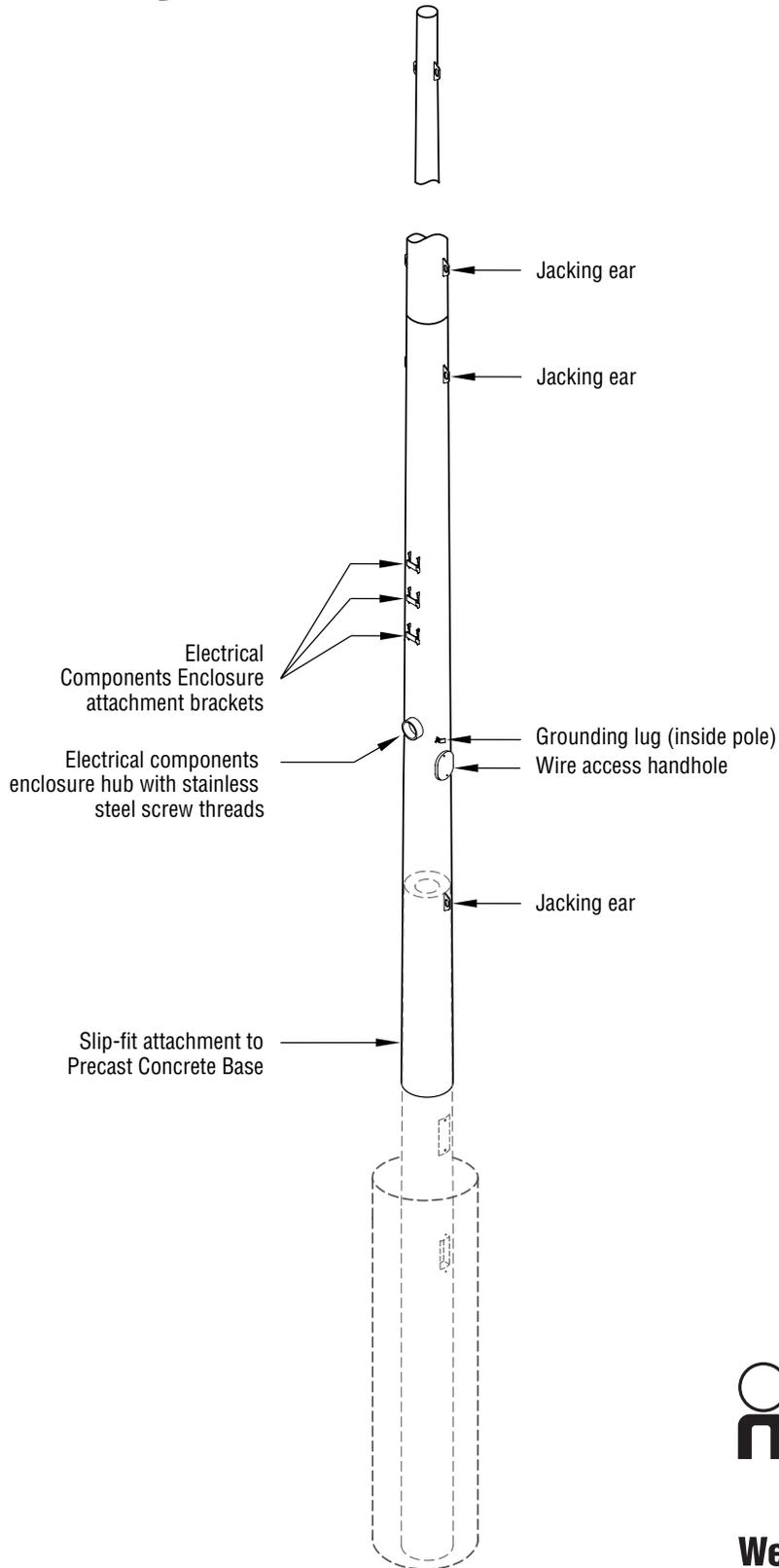
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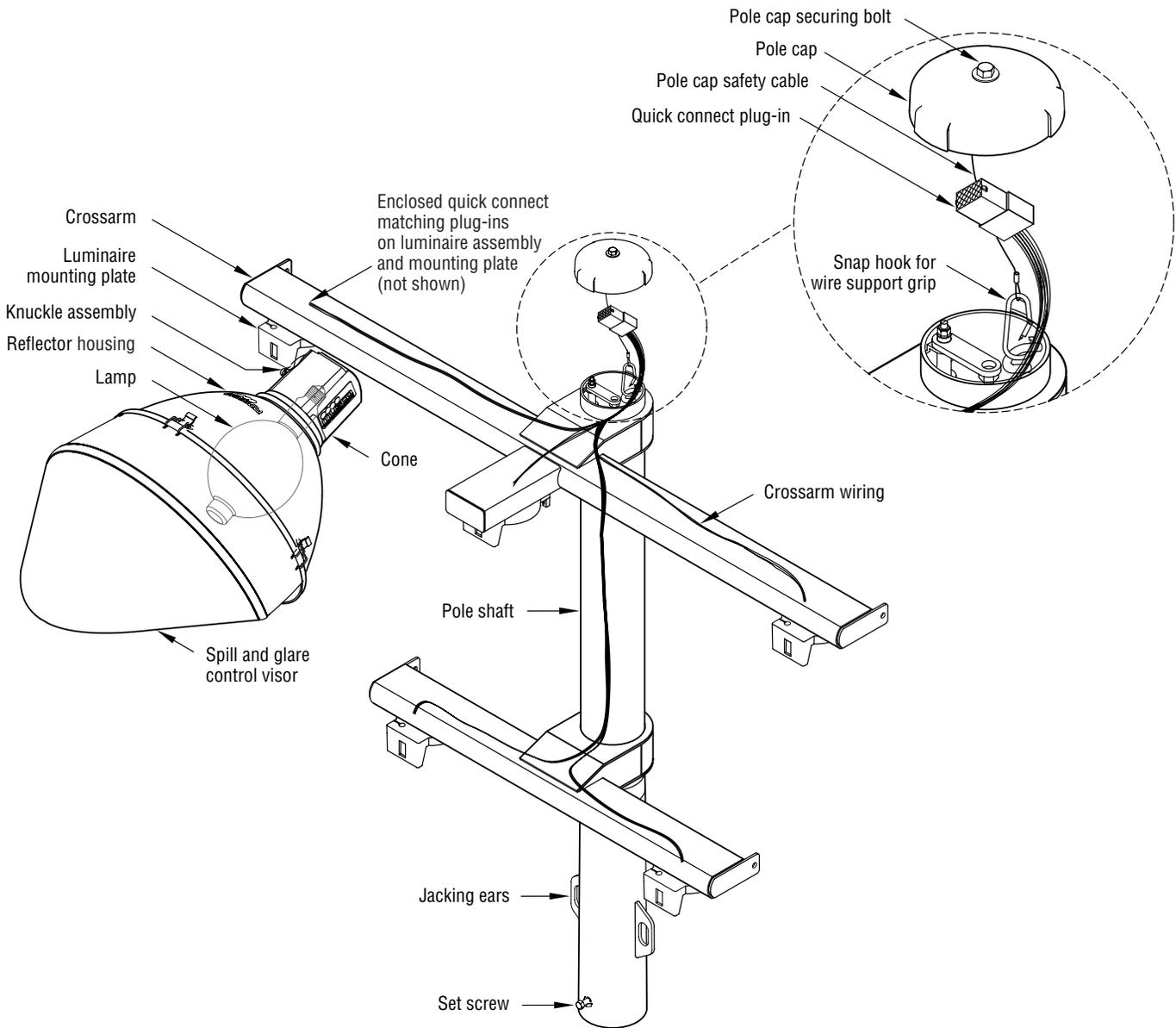
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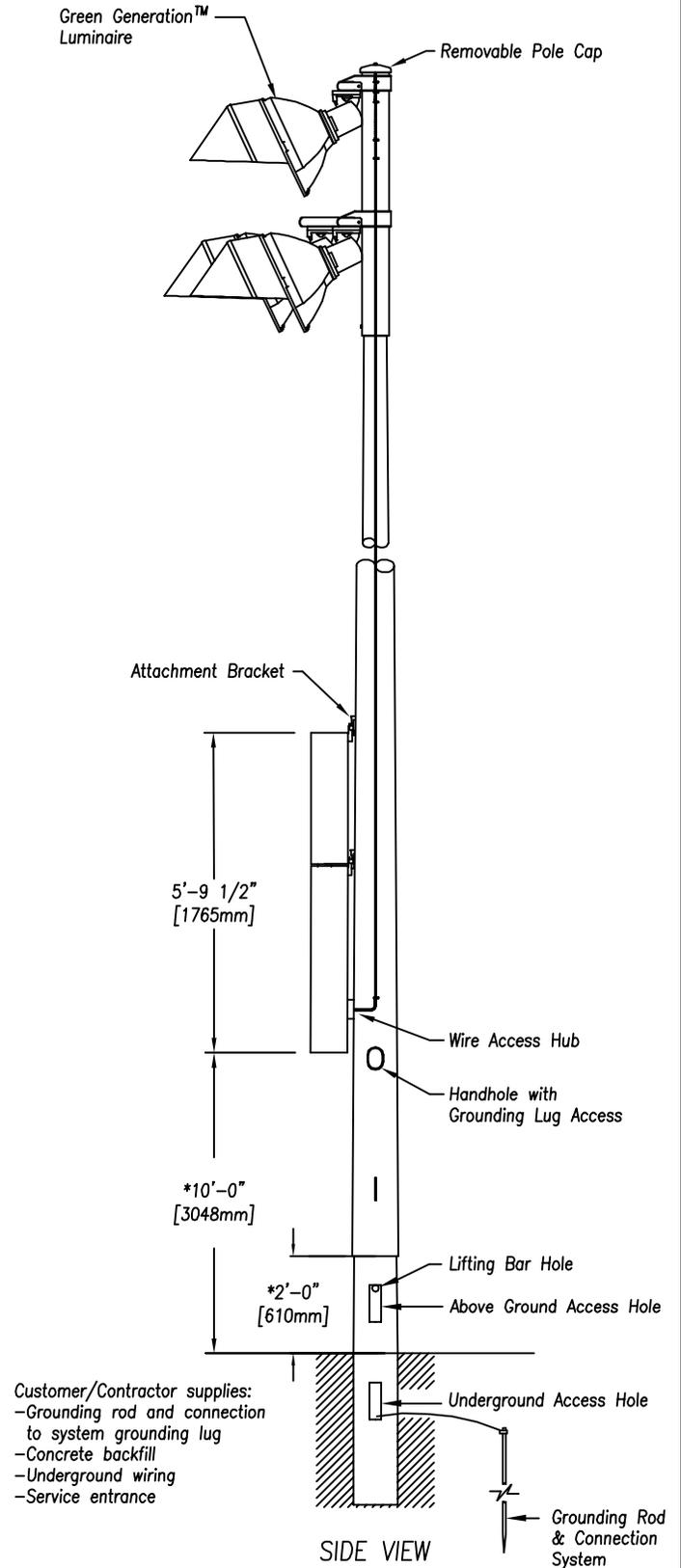
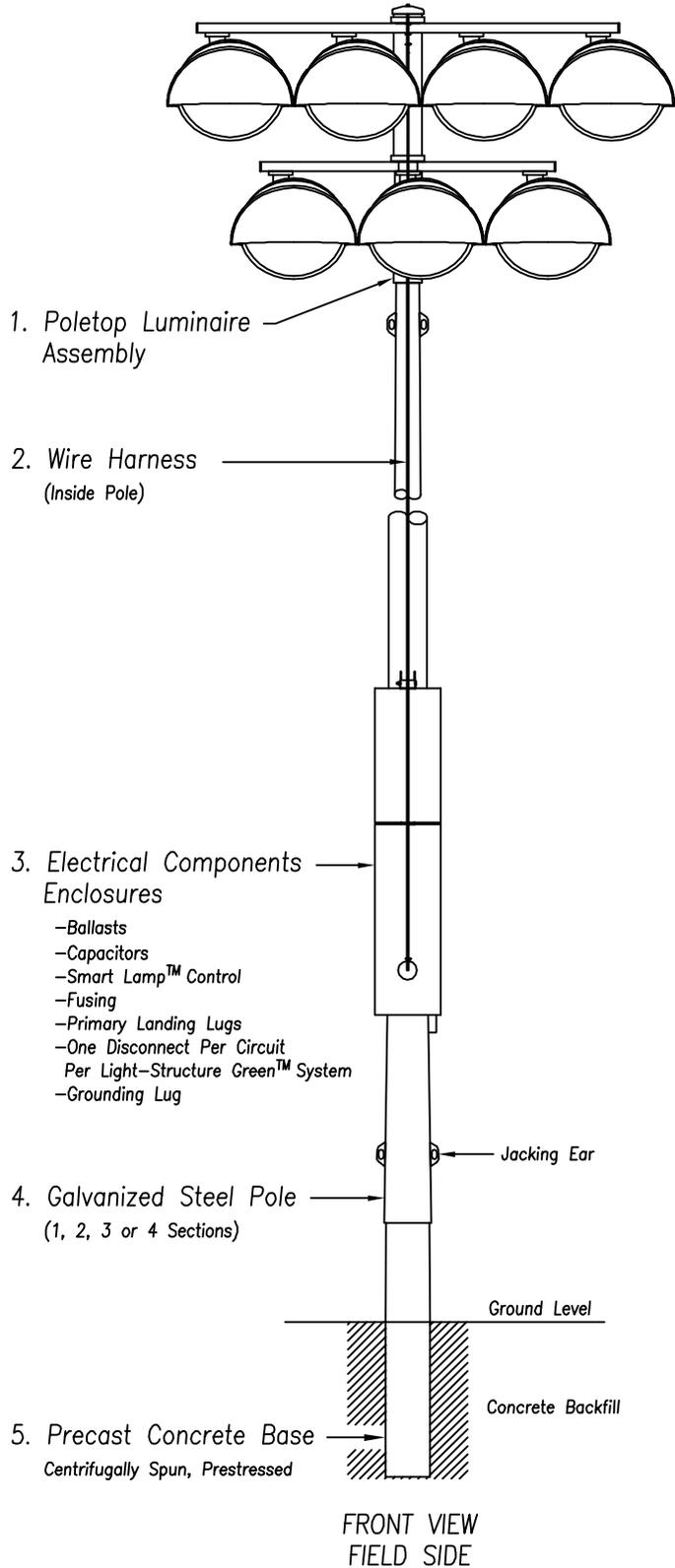
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Typical Light-Structure Green™ System Detail – 7 Luminaires



Notes:

1. This drawing is not to scale.
2. * This dimension for reference only. Variances may occur depending on steel pole tolerances, concrete tolerances, galvanizing thickness, hole depth accuracy.
3. Musco provides a base installation bar, an installation level modified for taper, and installation wedges.
4. Provisions for auxiliary equipment such as speaker or security lighting can be incorporated.
5. Copyright 1991, 2005 Musco Lighting. Patents issued and pending.

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APPENDIX B

AIR EMISSIONS MODELING RESULTS

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Martinez Waterfront Park Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	29.00	Acre	29.00	1,263,240.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	64
Climate Zone	4			Operational Year	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	290	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 per PG&E GHG Emission factors April 2013

Land Use - Park 29 acres

Construction Phase - limited building construction included in project

Energy Use - city park

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstructionPhase	NumDays	35.00	10.00
tblConstructionPhase	NumDays	440.00	50.00

tblConstructionPhase	NumDays	35.00	50.00
tblConstructionPhase	PhaseEndDate	9/29/2016	9/29/2017
tblConstructionPhase	PhaseStartDate	7/22/2016	7/22/2017
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2014	2016

2.0 Emissions Summary

2.1 Overall Construction Unmitigated Construction

	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
Year	tons/yr										MT/yr					
2016	0.4655	4.2235	4.0224	5.8100e-003	0.5373	0.2024	0.7397	0.2239	0.1876	0.4115		512.2332	512.2332	0.0881	0.0000	514.0827
2017	14.6902	0.5228	0.4204	6.7000e-004	8.2100e-003	0.0294	0.0376	2.1800e-003	0.0271	0.0293		60.1764	60.1764	0.0164	0.0000	60.5199
Total	15.1557	4.7462	4.4427	6.4800e-003	0.5455	0.2318	0.7773	0.2261	0.2147	0.4408		572.4096	572.4096	0.1044	0.0000	574.6027

Mitigated Construction

	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
Year	tons/yr										MT/yr					
2016	0.4655	4.2234	4.0224	5.8100e-003	0.5373	0.2024	0.7397	0.2239	0.1876	0.4115		512.2329	512.2329	0.0881	0.0000	514.0824
2017	14.6902	0.5228	0.4204	6.7000e-004	8.2100e-003	0.0294	0.0376	2.1800e-003	0.0271	0.0293		60.1763	60.1763	0.0164	0.0000	60.5199

Total	15.1557	4.7462	4.4427	6.4800e-003	0.5455	0.2318	0.7773	0.2261	0.2147	0.4408		572.4092	572.4092	0.1044	0.0000	574.6023
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	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

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	5.5923	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.2000e-004	5.2000e-004	0.0000	0.0000	5.5000e-004
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	0.0298	0.0663	0.2951	5.3000e-004	0.0366	8.5000e-004	0.0375	9.8300e-003	7.8000e-004	0.0106		41.8159	41.8159	1.8500e-003	0.0000	41.8548
Waste						0.0000	0.0000		0.0000	0.0000		0.0000	0.5055	0.0299	0.0000	1.1327
Water						0.0000	0.0000		0.0000	0.0000		15.9081	15.9081	1.5900e-003	3.3000e-004	16.0435
Total	5.6221	0.0663	0.2954	5.3000e-004	0.0366	8.5000e-004	0.0375	9.8300e-003	7.8000e-004	0.0106		57.7245	58.2299	0.0333	3.3000e-004	59.0316

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	5.5923	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.2000e-004	5.2000e-004	0.0000	0.0000	5.5000e-004

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	0.0298	0.0663	0.2951	5.3000e-004	0.0366	8.5000e-004	0.0375	9.8300e-003	7.8000e-004	0.0106		41.8159	41.8159	1.8500e-003	0.0000	41.8548
Waste						0.0000	0.0000		0.0000	0.0000		0.0000	0.5055	0.0299	0.0000	1.1327
Water						0.0000	0.0000		0.0000	0.0000		15.9081	15.9081	1.5900e-003	3.3000e-004	16.0435
Total	5.6221	0.0663	0.2954	5.3000e-004	0.0366	8.5000e-004	0.0375	9.8300e-003	7.8000e-004	0.0106		57.7245	58.2299	0.0333	3.3000e-004	59.0316

	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	Demolition	Demolition	1/1/2016	2/11/2016	5	30	
2	Site Preparation	Site Preparation	2/12/2016	3/10/2016	5	20	
3	Grading	Grading	3/11/2016	5/12/2016	5	45	
4	Building Construction	Building Construction	5/13/2016	7/21/2016	5	50	
5	Paving	Paving	7/22/2017	9/29/2017	5	50	
6	Architectural Coating	Architectural Coating	9/30/2017	10/13/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,894,860; Non-Residential Outdoor: 631,620 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	531.00	207.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	106.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

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	0.0643	0.6848	0.5255	6.0000e-004		0.0344	0.0344		0.0321	0.0321		55.6460	55.6460	0.0151	0.0000	55.9638
Total	0.0643	0.6848	0.5255	6.0000e-004		0.0344	0.0344		0.0321	0.0321		55.6460	55.6460	0.0151	0.0000	55.9638

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
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
Worker	8.5000e-004	1.2400e-003	0.0120	2.0000e-005	2.0400e-003	2.0000e-005	2.0600e-003	5.4000e-004	2.0000e-005	5.6000e-004		1.8522	1.8522	1.0000e-004	0.0000	1.8543
Total	8.5000e-004	1.2400e-003	0.0120	2.0000e-005	2.0400e-003	2.0000e-005	2.0600e-003	5.4000e-004	2.0000e-005	5.6000e-004		1.8522	1.8522	1.0000e-004	0.0000	1.8543

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	0.0643	0.6848	0.5255	6.0000e-004		0.0344	0.0344		0.0321	0.0321			55.6460	55.6460	0.0151	0.0000	55.9638
Total	0.0643	0.6848	0.5255	6.0000e-004		0.0344	0.0344		0.0321	0.0321			55.6460	55.6460	0.0151	0.0000	55.9638

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
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
Worker	8.5000e-004	1.2400e-003	0.0120	2.0000e-005	2.0400e-003	2.0000e-005	2.0600e-003	5.4000e-004	2.0000e-005	5.6000e-004			1.8522	1.8522	1.0000e-004	0.0000	1.8543
Total	8.5000e-004	1.2400e-003	0.0120	2.0000e-005	2.0400e-003	2.0000e-005	2.0600e-003	5.4000e-004	2.0000e-005	5.6000e-004			1.8522	1.8522	1.0000e-004	0.0000	1.8543

3.3 Site Preparation - 2016

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					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993			0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0508	0.5463	0.4111	3.9000e-004		0.0294	0.0294		0.0270	0.0270		36.8771	36.8771	0.0111	0.0000	37.1107
Total	0.0508	0.5463	0.4111	3.9000e-004	0.1807	0.0294	0.2101	0.0993	0.0270	0.1264		36.8771	36.8771	0.0111	0.0000	37.1107

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
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
Worker	6.8000e-004	9.9000e-004	9.5800e-003	2.0000e-005	1.6300e-003	1.0000e-005	1.6500e-003	4.3000e-004	1.0000e-005	4.5000e-004		1.4818	1.4818	8.0000e-005	0.0000	1.4835
Total	6.8000e-004	9.9000e-004	9.5800e-003	2.0000e-005	1.6300e-003	1.0000e-005	1.6500e-003	4.3000e-004	1.0000e-005	4.5000e-004		1.4818	1.4818	8.0000e-005	0.0000	1.4835

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					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0508	0.5463	0.4111	3.9000e-004		0.0294	0.0294		0.0270	0.0270		36.8771	36.8771	0.0111	0.0000	37.1107
Total	0.0508	0.5463	0.4111	3.9000e-004	0.1807	0.0294	0.2101	0.0993	0.0270	0.1264		36.8771	36.8771	0.0111	0.0000	37.1107

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
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
Worker	6.8000e-004	9.9000e-004	9.5800e-003	2.0000e-005	1.6300e-003	1.0000e-005	1.6500e-003	4.3000e-004	1.0000e-005	4.5000e-004		1.4818	1.4818	8.0000e-005	0.0000	1.4835
Total	6.8000e-004	9.9000e-004	9.5800e-003	2.0000e-005	1.6300e-003	1.0000e-005	1.6500e-003	4.3000e-004	1.0000e-005	4.5000e-004		1.4818	1.4818	8.0000e-005	0.0000	1.4835

3.4 Grading - 2016

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					0.1952	0.0000	0.1952	0.0809	0.0000	0.0809		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1458	1.6833	1.1056	1.3900e-003		0.0807	0.0807		0.0742	0.0742		130.9404	130.9404	0.0395	0.0000	131.7698
Total	0.1458	1.6833	1.1056	1.3900e-003	0.1952	0.0807	0.2758	0.0809	0.0742	0.1551		130.9404	130.9404	0.0395	0.0000	131.7698

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	1.7100e-003	2.4700e-003	0.0240	5.0000e-005	4.0800e-003	3.0000e-005	4.1200e-003	1.0900e-003	3.0000e-005	1.1200e-003		3.7044	3.7044	2.0000e-004	0.0000	3.7087
Total	1.7100e-003	2.4700e-003	0.0240	5.0000e-005	4.0800e-003	3.0000e-005	4.1200e-003	1.0900e-003	3.0000e-005	1.1200e-003		3.7044	3.7044	2.0000e-004	0.0000	3.7087

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					0.1952	0.0000	0.1952	0.0809	0.0000	0.0809		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1458	1.6833	1.1056	1.3900e-003		0.0807	0.0807		0.0742	0.0742		130.9402	130.9402	0.0395	0.0000	131.7697
Total	0.1458	1.6833	1.1056	1.3900e-003	0.1952	0.0807	0.2758	0.0809	0.0742	0.1551		130.9402	130.9402	0.0395	0.0000	131.7697

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
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
Worker	1.7100e-003	2.4700e-003	0.0240	5.0000e-005	4.0800e-003	3.0000e-005	4.1200e-003	1.0900e-003	3.0000e-005	1.1200e-003		3.7044	3.7044	2.0000e-004	0.0000	3.7087
Total	1.7100e-003	2.4700e-003	0.0240	5.0000e-005	4.0800e-003	3.0000e-005	4.1200e-003	1.0900e-003	3.0000e-005	1.1200e-003		3.7044	3.7044	2.0000e-004	0.0000	3.7087

3.5 Building Construction - 2016

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	0.0852	0.7127	0.4627	6.7000e-004		0.0492	0.0492		0.0462	0.0462		60.5384	60.5384	0.0150	0.0000	60.8537
Total	0.0852	0.7127	0.4627	6.7000e-004		0.0492	0.0492		0.0462	0.0462		60.5384	60.5384	0.0150	0.0000	60.8537

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
Vendor	0.0659	0.5187	0.7655	1.2300e-003	0.0333	7.7400e-003	0.0410	9.5500e-003	7.1100e-003	0.0167		111.9142	111.9142	9.0000e-004	0.0000	111.9330
Worker	0.0503	0.0729	0.7066	1.4300e-003	0.1204	1.0100e-003	0.1214	0.0320	9.2000e-004	0.0330		109.2788	109.2788	6.0200e-003	0.0000	109.4052
Total	0.1162	0.5916	1.4721	2.6600e-003	0.1537	8.7500e-003	0.1625	0.0416	8.0300e-003	0.0496		221.1930	221.1930	6.9200e-003	0.0000	221.3383

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	0.0852	0.7127	0.4627	6.7000e-004		0.0492	0.0492		0.0462	0.0462		60.5383	60.5383	0.0150	0.0000	60.8536
Total	0.0852	0.7127	0.4627	6.7000e-004		0.0492	0.0492		0.0462	0.0462		60.5383	60.5383	0.0150	0.0000	60.8536

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
Vendor	0.0659	0.5187	0.7655	1.2300e-003	0.0333	7.7400e-003	0.0410	9.5500e-003	7.1100e-003	0.0167		111.9142	111.9142	9.0000e-004	0.0000	111.9330
Worker	0.0503	0.0729	0.7066	1.4300e-003	0.1204	1.0100e-003	0.1214	0.0320	9.2000e-004	0.0330		109.2788	109.2788	6.0200e-003	0.0000	109.4052
Total	0.1162	0.5916	1.4721	2.6600e-003	0.1537	8.7500e-003	0.1625	0.0416	8.0300e-003	0.0496		221.1930	221.1930	6.9200e-003	0.0000	221.3383

3.6 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	0.0477	0.5074	0.3682	5.6000e-004		0.0285	0.0285		0.0262	0.0262		51.7335	51.7335	0.0159	0.0000	52.0664

Paving	0.0000					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0477	0.5074	0.3682	5.6000e-004		0.0285	0.0285		0.0262	0.0262		51.7335	51.7335	0.0159	0.0000	52.0664

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
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
Worker	1.2600e-003	1.8400e-003	0.0178	4.0000e-005	3.4000e-003	3.0000e-005	3.4300e-003	9.0000e-004	2.0000e-005	9.3000e-004		2.9694	2.9694	1.6000e-004	0.0000	2.9727
Total	1.2600e-003	1.8400e-003	0.0178	4.0000e-005	3.4000e-003	3.0000e-005	3.4300e-003	9.0000e-004	2.0000e-005	9.3000e-004		2.9694	2.9694	1.6000e-004	0.0000	2.9727

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	0.0477	0.5074	0.3682	5.6000e-004		0.0285	0.0285		0.0262	0.0262		51.7335	51.7335	0.0159	0.0000	52.0664
Paving	0.0000					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0477	0.5074	0.3682	5.6000e-004		0.0285	0.0285		0.0262	0.0262		51.7335	51.7335	0.0159	0.0000	52.0664

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
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
Worker	1.2600e-003	1.8400e-003	0.0178	4.0000e-005	3.4000e-003	3.0000e-005	3.4300e-003	9.0000e-004	2.0000e-005	9.3000e-004		2.9694	2.9694	1.6000e-004	0.0000	2.9727
Total	1.2600e-003	1.8400e-003	0.0178	4.0000e-005	3.4000e-003	3.0000e-005	3.4300e-003	9.0000e-004	2.0000e-005	9.3000e-004		2.9694	2.9694	1.6000e-004	0.0000	2.9727

3.7 Architectural Coating - 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					
Archit. Coating	14.6378					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004		1.2766	1.2766	1.3000e-004	0.0000	1.2795
Total	14.6395	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004		1.2766	1.2766	1.3000e-004	0.0000	1.2795

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	1.7800e-003	2.6100e-003	0.0251	6.0000e-005	4.8100e-003	4.0000e-005	4.8500e-003	1.2800e-003	4.0000e-005	1.3100e-003		4.1968	4.1968	2.2000e-004	0.0000	4.2014
Total	1.7800e-003	2.6100e-003	0.0251	6.0000e-005	4.8100e-003	4.0000e-005	4.8500e-003	1.2800e-003	4.0000e-005	1.3100e-003		4.1968	4.1968	2.2000e-004	0.0000	4.2014

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					
Archit. Coating	14.6378					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004		1.2766	1.2766	1.3000e-004	0.0000	1.2795
Total	14.6395	0.0109	9.3400e-003	1.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004		1.2766	1.2766	1.3000e-004	0.0000	1.2795

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
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
Worker	1.7800e-003	2.6100e-003	0.0251	6.0000e-005	4.8100e-003	4.0000e-005	4.8500e-003	1.2800e-003	4.0000e-005	1.3100e-003		4.1968	4.1968	2.2000e-004	0.0000	4.2014
Total	1.7800e-003	2.6100e-003	0.0251	6.0000e-005	4.8100e-003	4.0000e-005	4.8500e-003	1.2800e-003	4.0000e-005	1.3100e-003		4.1968	4.1968	2.2000e-004	0.0000	4.2014

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	0.0298	0.0663	0.2951	5.3000e-004	0.0366	8.5000e-004	0.0375	9.8300e-003	7.8000e-004	0.0106		41.8159	41.8159	1.8500e-003	0.0000	41.8548
Unmitigated	0.0298	0.0663	0.2951	5.3000e-004	0.0366	8.5000e-004	0.0375	9.8300e-003	7.8000e-004	0.0106		41.8159	41.8159	1.8500e-003	0.0000	41.8548

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	46.11	46.11	46.11	98,438	98,438
Total	46.11	46.11	46.11	98,438	98,438

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.546434	0.062864	0.174629	0.123506	0.034170	0.004889	0.015456	0.023695	0.002073	0.003288	0.006639	0.000690	0.001668

5.0 Energy Detail

4.4 Fleet Mix

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	tons/yr										MT/yr					
Electricity Mitigated							0.0000	0.0000		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated							0.0000	0.0000		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
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

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	tons/yr										MT/yr					
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
Total		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

Mitigated

	Natural Gas 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	tons/yr										MT/yr					
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
Total		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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000

Total		0.0000	0.0000	0.0000	0.0000
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6.0 Area Detail

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	5.5923	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.2000e-004	5.2000e-004	0.0000	0.0000	5.5000e-004
Unmitigated	5.5923	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.2000e-004	5.2000e-004	0.0000	0.0000	5.5000e-004

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					
Consumer Products	4.9336					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.2000e-004	5.2000e-004	0.0000	0.0000	5.5000e-004
Architectural Coating	0.6587					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5923	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.2000e-004	5.2000e-004	0.0000	0.0000	5.5000e-004

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					
Consumer Products	4.9336						0.0000	0.0000		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.7000e-004	0.0000			0.0000	0.0000		0.0000		5.2000e-004	5.2000e-004	0.0000	0.0000	5.5000e-004
Architectural Coating	0.6587						0.0000	0.0000		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5923	0.0000	2.7000e-004	0.0000			0.0000	0.0000		0.0000		5.2000e-004	5.2000e-004	0.0000	0.0000	5.5000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.9081	1.5900e-003	3.3000e-004	16.0435
Unmitigated	15.9081	1.5900e-003	3.3000e-004	16.0435

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 34.553	15.9081	1.5900e-003	3.3000e-004	16.0435
Total		15.9081	1.5900e-003	3.3000e-004	16.0435

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 34.553	15.9081	1.5900e-003	3.3000e-004	16.0435
Total		15.9081	1.5900e-003	3.3000e-004	16.0435

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			

Mitigated	0.5055	0.0299	0.0000	1.1327
Unmitigated	0.5055	0.0299	0.0000	1.1327

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	2.49	0.5055	0.0299	0.0000	1.1327
Total		0.5055	0.0299	0.0000	1.1327

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	2.49	0.5055	0.0299	0.0000	1.1327
Total		0.5055	0.0299	0.0000	1.1327

9.0 Operational Offroad

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

Martinez Waterfront Park Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	29.00	Acre	29.00	1,263,240.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	64
Climate Zone	4			Operational Year	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 per PG&E GHG Emission factors April 2013

Land Use - Park 29 acres

Construction Phase - limited building construction included in project

Energy Use - city park

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstructionPhase	NumDays	35.00	10.00
tblConstructionPhase	NumDays	440.00	50.00

tblConstructionPhase	NumDays	35.00	50.00
tblConstructionPhase	PhaseEndDate	9/29/2016	9/29/2017
tblConstructionPhase	PhaseStartDate	7/22/2016	7/22/2017
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2014	2016

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	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
Year	lb/day										lb/day					
2016	7.9008	74.9109	72.5813	0.1378	18.2360	3.5858	21.1760	9.9757	3.2989	12.6805		12,795.5335	12,795.5335	1.9450	0.0000	12,836.3782
2017	2,928.2751	20.3616	15.4881	0.0240	0.9996	1.1395	1.2809	0.2651	1.0483	1.0859		2,421.7146	2,421.7146	0.7058	0.0000	2,436.5356
Total	2,936.1758	95.2725	88.0694	0.1619	19.2356	4.7253	22.4570	10.2408	4.3472	13.7664		15,217.2481	15,217.2481	2.6507	0.0000	15,272.9138

Mitigated Construction

	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
Year	lb/day										lb/day					
2016	7.9008	74.9109	72.5813	0.1378	18.2360	3.5858	21.1760	9.9757	3.2989	12.6805		12,795.5335	12,795.5335	1.9450	0.0000	12,836.3782
2017	2,928.2751	20.3616	15.4881	0.0240	0.9996	1.1395	1.2809	0.2651	1.0483	1.0859		2,421.7146	2,421.7146	0.7058	0.0000	2,436.5356

Total	2,936.1758	95.2725	88.0694	0.1619	19.2356	4.7253	22.4570	10.2408	4.3472	13.7664		15,217.2481	15,217.2481	2.6507	0.0000	15,272.9137
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	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

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	30.6430	3.0000e-005	3.0400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.3500e-003	6.3500e-003	2.0000e-005		6.7200e-003
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	0.1673	0.3418	1.5552	3.0600e-003	0.2090	4.6400e-003	0.2137	0.0559	4.2600e-003	0.0602		267.7383	267.7383	0.0112		267.9743
Total	30.8103	0.3418	1.5582	3.0600e-003	0.2090	4.6500e-003	0.2137	0.0559	4.2700e-003	0.0602		267.7447	267.7447	0.0113	0.0000	267.9810

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	30.6430	3.0000e-005	3.0400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.3500e-003	6.3500e-003	2.0000e-005		6.7200e-003
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	0.1673	0.3418	1.5552	3.0600e-003	0.2090	4.6400e-003	0.2137	0.0559	4.2600e-003	0.0602		267.7383	267.7383	0.0112		267.9743

Total	30.8103	0.3418	1.5582	3.0600e-003	0.2090	4.6500e-003	0.2137	0.0559	4.2700e-003	0.0602		267.7447	267.7447	0.0113	0.0000	267.9810
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	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	Demolition	Demolition	1/1/2016	2/11/2016	5	30	
2	Site Preparation	Site Preparation	2/12/2016	3/10/2016	5	20	
3	Grading	Grading	3/11/2016	5/12/2016	5	45	
4	Building Construction	Building Construction	5/13/2016	7/21/2016	5	50	
5	Paving	Paving	7/22/2017	9/29/2017	5	50	
6	Architectural Coating	Architectural Coating	9/30/2017	10/13/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,894,860; Non-Residential Outdoor: 631,620 (Architectural Coating)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	531.00	207.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	106.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

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	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.2841	4,089.2841	1.1121		4,112.6374
Total	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.2841	4,089.2841	1.1121		4,112.6374

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	0.0609	0.0729	0.8514	1.7400e-003	0.1415	1.1400e-003	0.1426	0.0375	1.0400e-003	0.0386		146.2084	146.2084	7.5000e-003		146.3659
Total	0.0609	0.0729	0.8514	1.7400e-003	0.1415	1.1400e-003	0.1426	0.0375	1.0400e-003	0.0386		146.2084	146.2084	7.5000e-003		146.3659

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	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.2841	4,089.2841	1.1121		4,112.6374
Total	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.2841	4,089.2841	1.1121		4,112.6374

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	0.0609	0.0729	0.8514	1.7400e-003	0.1415	1.1400e-003	0.1426	0.0375	1.0400e-003	0.0386		146.2084	146.2084	7.5000e-003		146.3659
Total	0.0609	0.0729	0.8514	1.7400e-003	0.1415	1.1400e-003	0.1426	0.0375	1.0400e-003	0.0386		146.2084	146.2084	7.5000e-003		146.3659

3.3 Site Preparation - 2016

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	5.0771	54.6323	41.1053	0.0391	18.0663	2.9387	21.0049	9.9307	2.7036	12.6343		4,065.0053	4,065.0053	1.2262		4,090.7544

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	0.0730	0.0874	1.0217	2.0900e-003	0.1698	1.3600e-003	0.1711	0.0450	1.2500e-003	0.0463		175.4501	175.4501	9.0000e-003		175.6391
Total	0.0730	0.0874	1.0217	2.0900e-003	0.1698	1.3600e-003	0.1711	0.0450	1.2500e-003	0.0463		175.4501	175.4501	9.0000e-003		175.6391

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	5.0771	54.6323	41.1053	0.0391	18.0663	2.9387	21.0049	9.9307	2.7036	12.6343		4,065.0053	4,065.0053	1.2262		4,090.7544

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
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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	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	0.0730	0.0874	1.0217	2.0900e-003	0.1698	1.3600e-003	0.1711	0.0450	1.2500e-003	0.0463		175.4501	175.4501	9.0000e-003		175.6391
Total	0.0730	0.0874	1.0217	2.0900e-003	0.1698	1.3600e-003	0.1711	0.0450	1.2500e-003	0.0463		175.4501	175.4501	9.0000e-003		175.6391

3.4 Grading - 2016

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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	8.6733	3.5842	12.2576	3.5965	3.2975	6.8940		6,414.9807	6,414.9807	1.9350		6,455.6154

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	0.0811	0.0971	1.1352	2.3200e-003	0.1886	1.5200e-003	0.1901	0.0500	1.3900e-003	0.0514		194.9446	194.9446	0.0100		195.1545

Total	0.0811	0.0971	1.1352	2.3200e-003	0.1886	1.5200e-003	0.1901	0.0500	1.3900e-003	0.0514		194.9446	194.9446	0.0100		195.1545
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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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000				0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350			6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	8.6733	3.5842	12.2576	3.5965	3.2975	6.8940		6,414.9807	6,414.9807	1.9350			6,455.6154

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	0.0811	0.0971	1.1352	2.3200e-003	0.1886	1.5200e-003	0.1901	0.0500	1.3900e-003	0.0514		194.9446	194.9446	0.0100			195.1545
Total	0.0811	0.0971	1.1352	2.3200e-003	0.1886	1.5200e-003	0.1901	0.0500	1.3900e-003	0.0514		194.9446	194.9446	0.0100			195.1545

3.5 Building Construction - 2016

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	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890

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	2.3403	20.0605	23.9351	0.0494	1.3761	0.3081	1.6842	0.3929	0.2832	0.6761		4,950.4685	4,950.4685	0.0392		4,951.2923
Worker	2.1543	2.5791	30.1396	0.0616	5.0075	0.0403	5.0477	1.3281	0.0369	1.3650		5,175.7786	5,175.7786	0.2654		5,181.3528
Total	4.4946	22.6396	54.0747	0.1110	6.3836	0.3483	6.7319	1.7210	0.3201	2.0411		10,126.2471	10,126.2471	0.3047		10,132.6450

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	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890

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	2.3403	20.0605	23.9351	0.0494	1.3761	0.3081	1.6842	0.3929	0.2832	0.6761		4,950.4685	4,950.4685	0.0392		4,951.2923
Worker	2.1543	2.5791	30.1396	0.0616	5.0075	0.0403	5.0477	1.3281	0.0369	1.3650		5,175.7786	5,175.7786	0.2654		5,181.3528
Total	4.4946	22.6396	54.0747	0.1110	6.3836	0.3483	6.7319	1.7210	0.3201	2.0411		10,126.2471	10,126.2471	0.3047		10,132.6450

3.6 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	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360

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	0.0543	0.0652	0.7611	1.7400e-003	0.1415	1.0800e-003	0.1425	0.0375	1.0000e-003	0.0385		140.6558	140.6558	6.8500e-003		140.7996
Total	0.0543	0.0652	0.7611	1.7400e-003	0.1415	1.0800e-003	0.1425	0.0375	1.0000e-003	0.0385		140.6558	140.6558	6.8500e-003		140.7996

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	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360

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
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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	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
Worker	0.0543	0.0652	0.7611	1.7400e-003	0.1415	1.0800e-003	0.1425	0.0375	1.0000e-003	0.0385		140.6558	140.6558	6.8500e-003		140.7996
Total	0.0543	0.0652	0.7611	1.7400e-003	0.1415	1.0800e-003	0.1425	0.0375	1.0000e-003	0.0385		140.6558	140.6558	6.8500e-003		140.7996

3.7 Architectural Coating - 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					
Archit. Coating	2,927.5587					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	2,927.8910	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721

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	0.3840	0.4609	5.3782	0.0123	0.9996	7.6600e-003	1.0073	0.2651	7.0500e-003	0.2722		993.9675	993.9675	0.0484		994.9838

Total	0.3840	0.4609	5.3782	0.0123	0.9996	7.6600e-003	1.0073	0.2651	7.0500e-003	0.2722		993.9675	993.9675	0.0484		994.9838
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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					
Archit. Coating	2,927.5587					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	2,927.8910	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721

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	0.3840	0.4609	5.3782	0.0123	0.9996	7.6600e-003	1.0073	0.2651	7.0500e-003	0.2722		993.9675	993.9675	0.0484		994.9838
Total	0.3840	0.4609	5.3782	0.0123	0.9996	7.6600e-003	1.0073	0.2651	7.0500e-003	0.2722		993.9675	993.9675	0.0484		994.9838

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	0.1673	0.3418	1.5552	3.0600e-003	0.2090	4.6400e-003	0.2137	0.0559	4.2600e-003	0.0602		267.7383	267.7383	0.0112		267.9743
Unmitigated	0.1673	0.3418	1.5552	3.0600e-003	0.2090	4.6400e-003	0.2137	0.0559	4.2600e-003	0.0602		267.7383	267.7383	0.0112		267.9743

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	46.11	46.11	46.11	98,438	98,438
Total	46.11	46.11	46.11	98,438	98,438

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.546434	0.062864	0.174629	0.123506	0.034170	0.004889	0.015456	0.023695	0.002073	0.003288	0.006639	0.000690	0.001668

5.0 Energy Detail

4.4 Fleet Mix

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

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
Total		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

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

Total		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
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6.0 Area Detail

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	30.6430	3.0000e-005	3.0400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.3500e-003	6.3500e-003	2.0000e-005		6.7200e-003
Unmitigated	30.6430	3.0000e-005	3.0400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.3500e-003	6.3500e-003	2.0000e-005		6.7200e-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	lb/day										lb/day					
Consumer Products	27.0333					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-004	3.0000e-005	3.0400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.3500e-003	6.3500e-003	2.0000e-005		6.7200e-003
Architectural Coating	3.6093					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	30.6430	3.0000e-005	3.0400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.3500e-003	6.3500e-003	2.0000e-005		6.7200e-003

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					
Consumer Products	27.0333					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-004	3.0000e-005	3.0400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.3500e-003	6.3500e-003	2.0000e-005		6.7200e-003
Architectural Coating	3.6093					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	30.6430	3.0000e-005	3.0400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.3500e-003	6.3500e-003	2.0000e-005		6.7200e-003

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 Vegetation

APPENDIX C PRELIMINARY NOISE IMPACT ANALYSIS

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BERKELEY
CARLSBAD
FORT COLLINS

IRVINE
PALM SPRINGS
POINT RICHMOND

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

April 15, 2014

Reed Dillingham, ASLA
Dillingham Associates Landscape Architects
2927 Newbury Street
Berkeley, California 94703

Subject: Preliminary Noise Impact Analysis for Martinez Waterfront Park Improvement Project

Dear Mr. Dillingham:

LSA Associates, Inc. (LSA) has prepared this letter report to document existing ambient noise conditions at nearby sensitive receptors in the vicinity of the Martinez Waterfront Park. The letter report also provides a qualitative analysis of the potential noise impacts that could result with implementation of the project in the City of Martinez (City), California.

PROPOSED PROJECT

The Martinez Waterfront Park is located north of the Union Pacific Railroad line, in downtown Martinez. The proposed project would include reconfiguration of existing ball fields with added lighting. One of the ball fields, Field 3, would also include bleachers to seat approximately 700 people; a public address (PA) system would also be installed for use on this field. The analysis assumed that the speakers for this PA system would be mounted on the proposed light poles for Field 3.

CHARACTERISTICS OF NOISE

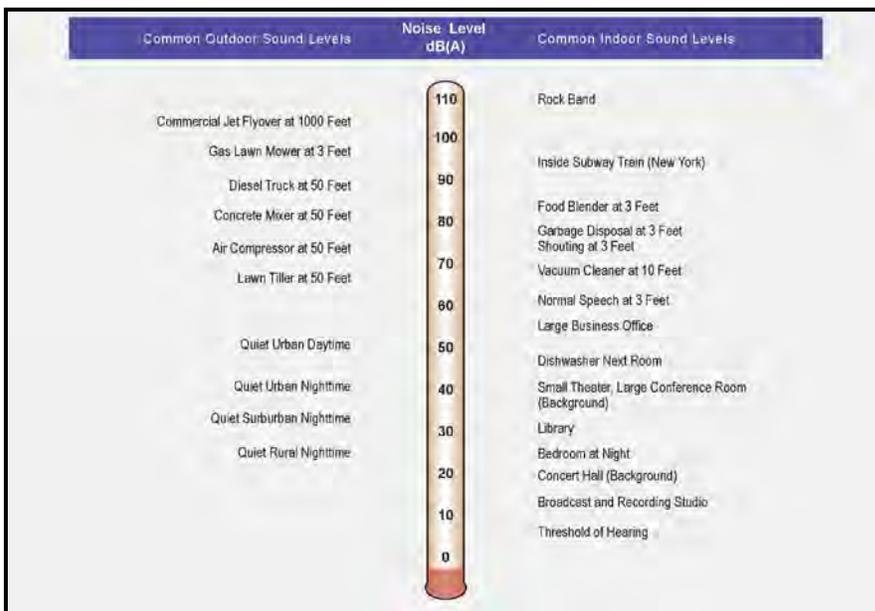
Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a ten-fold increase in acoustic energy, while 20 dB is 100 times more intense and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness; and similarly, each 10 dB decrease in sound level is perceived as half as loud. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for 24-hour sound measurements which better represent how humans are more sensitive to sound at night.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound

level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} , the community noise equivalent level (CNEL). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). Typical A-weighted sound levels from various sources are described in Table 1.

Table 1: Typical A-Weighted Sound Levels



Source: Compiled by LSA Associates, Inc., 2009.

LAND USE COMPATIBILITY CRITERIA

The City of Martinez addresses noise in the Noise Element of the General Plan. Applicable policies of the noise element include the City’s land use compatibility standards for community noise environments. According to the Noise Element, the City considers environments with noise levels up to 70 dBA CNEL to be “conditionally acceptable” for new outdoor spectator sports land use development. Environments with ambient noise levels of up to 60 dBA CNEL are considered “normally acceptable” for new residential development, while environments with noise levels between 60 dBA and 70 dBA CNEL are considered “conditionally acceptable,” requiring a detailed analysis of noise reduction requirements. The City does not have any established noise performance thresholds for stationary noise sources. Implementation of a development project is typically defined to result in a substantial increase in ambient noise levels if it results in an “audible increase”

compared to noise levels existing without the project. Audible increases in noise levels generally refer to a change of 3 dBA or more, as this level has been found to be barely perceptible to the human ear in outdoor environments.

EXISTING NOISE CONDITIONS

To establish the baseline noise conditions, a long-term ambient noise level measurement was conducted to document the existing noise environment at nearby sensitive receptors in the vicinity of the project site. The noise monitoring location is shown in Attachment A.

Existing Noise Sensitive Land Uses. The closest noise sensitive land uses to the project site are the residential land uses located south of the Union Pacific Railroad line fronting Escobar Street, in downtown Martinez. The rear of some of these properties back up to Marina Vista Avenue, which borders the railroad tracks.

Primary Noise Sources. The primary noise source in the project vicinity is railroad activity on the Union Pacific Railroad line. Noise from vehicle traffic along Marina Vista Avenue and Escobar Street also contributes to the ambient noise environment of the nearest residential properties south of the project site. The Union Pacific rail line is located adjacent to Marina Vista Avenue between the project site and the nearest residential land uses. Stationary noise sources in the project vicinity include recreational and parking lot activities at the Waterfront Park as well as parking lot and delivery activities at nearby commercial land uses.

Noise Monitoring Results. A long-term ambient noise measurement was taken on the project site to document the existing noise environment and capture the noise levels associated with all activities in the project area. The long-term measurement was conducted from Friday, April 11, 2014 to Monday, April 14, 2014. The hourly averages were weighted and summed to calculate the daily 24-hour CNEL. The long-term measurement was located adjacent to the nearest residential properties that front Marina Vista Avenue, and is shown in Attachment A. The results show that the both the Saturday and Sunday 24-hour averages at this location were 71 dBA CNEL. The calculated weekday 24-hour average was 79 dBA CNEL. The noise measurement data and the 24-hour average calculation spreadsheet are provided in Attachment B.

This long-term noise measurement captured all audible noise levels in the vicinity of the noise measurement location. Documented noise sources include train by-passes, traffic on Mira Vista Avenue and Escobar Street, baseball practice activities, parking lot activities at the Waterfront Park, and recreational use of the park.

Measured hourly average noise levels ranged from 48.1 dBA to 78 dBA $L_{eq(h)}$ over the long-term measurement. Measured instantaneous maximum noise levels ranged up to 113.5 dBA L_{max} ; while the recorded minimum instantaneous noise levels for the long-term measurement was 36.7 dBA L_{min} .

POTENTIAL NOISE IMPACTS TO OFF-SITE SENSITIVE USES

Implementation of the proposed park improvements (including the new lighting and PA systems) would result in extended hours of use and increased attendance at the Waterfront Park sporting facilities. Based on the results noise impact analysis of similar field lighting and PA system installation projects performed by LSA, average noise levels for up to approximately 700 spectators and use of a PA system for an event would produce hourly average noise levels of approximately 65 dBA $L_{eq(h)}$ as measured at approximately 50 feet behind the spectator bleachers and nearest PA system speaker poles.

The proposed project is expected to result in events that could draw a maximum attendance of up to 700 spectators. For the purpose of this preliminary analysis, it is assumed that the proposed PA system would be designed to produce maximum noise levels of up to 85 dBA L_{max} as measured at the center of the proposed spectator bleachers (a typical range for outdoor sports field PA systems). The nearest residential land uses are located approximately 930 feet from the nearest proposed spectator bleachers and light poles on which the PA speakers would be mounted around the proposed Field 3 baseball field. Based on these assumptions, noise levels from spectators and use of the PA system at Field 3 would attenuate to below 40 dBA $L_{eq(h)}$ as measured at the nearest residential properties located south of the park that back up to Marina Vista Avenue (a 25 dBA reduction at 930 feet compared to the noise level as measured at 50 feet from the source).

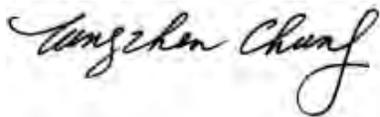
While maximum noise levels from spectator noise and PA system use could be perceptible at times at the property line of the nearest residential properties to the project site, they would be well below the maximum noise levels currently experienced at these locations from train by-passings. In addition, the loudest hourly average noise levels from an event at the park with a maximum attendance of 700 spectators (noted above to be approximately 40 dBA $L_{eq(h)}$) would not exceed even the lowest existing daytime or evening hourly average noise level (shown to be 64.3 dBA $L_{eq(h)}$) as documented in the long-term noise level measurement at the nearest residential properties.

CONCLUSION

Due to distance attenuation and the existing noise environment, implementation of the proposed project would not result in a perceptible increase in ambient noise levels at the nearest off-site sensitive receptors.

If you have any questions regarding this analysis, please feel free to call me or Amy Fischer at (559) 490-1210.

Sincerely,
LSA ASSOCIATES, INC.



Tony Chung
Principal-in-Charge

Attachments:

Attachment A – Noise Measurement Location Figure

Attachment B – Noise Measurement Survey Data

**ATTACHMENT A:
NOISE MONITORING LOCATION MAP**



FIGURE 1

LSA



● Noise Monitoring Location

Martinez Waterfront Park
Noise Measurement Location

SOURCES: GOOGLE EARTH, 9/2012; LSA ASSOCIATES, INC., APRIL 2014.

I:\RDL1301 Martinez Waterfront Park\figures\Fig_1.ai (4/14/14)

**ATTACHMENT B:
NOISE MONITORING DATA**

Site	Meas Location	Exccd Number	Date	Time	Duration	Leq	SEL	Lmax	Lmin	Peak	L(2)	L(8)	L(25)	L(50)	
setup	0	0	11-Apr	14	16:44:24	935.6	84.3	114	114.9	40.9	139.2	89	76.1	68.8	59.1
Friday	0	0	11-Apr	14	17:00:00	3600	66.2	101.8	85.7	40	97.1	76	72.3	60.7	50.6
	0	0	11-Apr	14	18:00:00	3600	71.2	106.7	104.6	39.8	117.2	77.5	73.5	62.6	51.2
	0	0	11-Apr	14	19:00:00	3600	67.8	103.3	96.8	39.1	108.6	76	71.4	58.6	48.7
	0	0	11-Apr	14	20:00:00	3600	64.4	100	91.5	38.8	101.5	74.5	69.5	52.7	44.2
	0	0	11-Apr	14	21:00:00	3600	61.6	97.1	81.8	38.8	99.1	73.7	62.1	48.4	44.6
	0	0	11-Apr	14	22:00:00	3600	66.5	102.1	95.3	38.3	106.3	77.3	67.8	50.6	44.3
	0	0	11-Apr	14	23:00:00	3600	66.5	102.1	93.7	38.6	105	76.9	68.8	51	44.1
Saturday	0	0	12-Apr	14	0:00:00	3600	65.8	101.4	99.1	38	112	74.1	53.8	45	41.4
	0	0	12-Apr	14	1:00:00	3600	65.1	100.7	88.1	37.2	100	76.7	61.6	44.2	39.7
	0	0	12-Apr	14	2:00:00	3600	52.7	88.3	80.2	37	94.9	56.3	43	39.1	38.1
	0	0	12-Apr	14	3:00:00	3600	48.1	83.7	75	37.2	91.2	51.4	45.4	41.3	39.5
	0	0	12-Apr	14	4:00:00	3600	52.6	88.2	77.6	37.5	90.4	57.6	44.1	40.4	38.9
	0	0	12-Apr	14	5:00:00	3600	60.2	95.8	83.8	38.2	96.4	71	52.7	44.6	41.8
	0	0	12-Apr	14	6:00:00	3600	62.7	98.3	82.8	38.7	96.6	74.4	64.9	51	44.7
	0	0	12-Apr	14	7:00:00	3600	66.4	102	86.4	40.4	97.1	75.8	72.9	62.9	51.2
	0	0	12-Apr	14	8:00:00	3600	74.9	110.5	108.1	40.5	120.4	76.9	73.4	66	53.9
	0	0	12-Apr	14	9:00:00	3600	66.9	102.4	84.9	42.6	102	76.2	72.8	63.9	54.4
	0	0	12-Apr	14	10:00:00	3600	68.4	104	92	41.8	102.3	77.4	73.8	64.9	53.9
	0	0	12-Apr	14	11:00:00	3600	71.8	107.4	104.3	43.3	116.7	80.8	73.6	64.7	54.5
	0	0	12-Apr	14	12:00:00	3600	65.3	100.9	83.9	43.7	94.7	74.7	71.2	62	57.8
	0	0	12-Apr	14	13:00:00	3600	71.4	107	103.1	43.3	114.8	74.7	70.2	60.6	54.4
	0	0	12-Apr	14	14:00:00	3600	64.3	99.8	84.4	42.1	96.6	74.5	69	57.7	53.1
	0	0	12-Apr	14	15:00:00	3600	67.2	102.7	100.1	44.5	110.8	74.4	69.9	59.9	55
	0	0	12-Apr	14	16:00:00	3600	65.3	100.8	86.1	45.5	100.4	75.3	71.1	59.9	54.9
	0	0	12-Apr	14	17:00:00	3600	69.5	105.1	102.8	43.7	114.2	75.4	70.9	58.1	52.6
	0	0	12-Apr	14	18:00:00	3600	69	104.5	103.6	40.3	118.5	76.3	71.1	56.9	49.6
	0	0	12-Apr	14	19:00:00	3600	68.1	103.7	98.1	39.5	109.1	75.9	70.4	55.3	48.6
	0	0	12-Apr	14	20:00:00	3600	69.2	104.8	100.5	39.3	111.6	76.1	69.4	52.9	46.1
	0	0	12-Apr	14	21:00:00	3600	61.1	96.7	81.9	37.7	94.8	73.1	62.3	48.1	43.3
	0	0	12-Apr	14	22:00:00	3600	65.8	101.4	89.2	38.4	101.4	74.2	62.2	50.1	44.4
	0	0	12-Apr	14	23:00:00	3600	59	94.5	85.7	37.7	98	70.6	57.4	46.2	42.5
Sunday	0	0	13-Apr	14	0:00:00	3600	66.1	101.7	89.2	37.2	100.5	77.7	65.5	49.9	44.9
	0	0	13-Apr	14	1:00:00	3600	64.2	99.8	88.3	37.2	98.5	75	66.4	45.7	41.3
	0	0	13-Apr	14	2:00:00	3600	52.2	87.8	79.1	36.8	92.8	57	42.6	38.6	37.7
	0	0	13-Apr	14	3:00:00	3600	49.9	85.4	79.4	36.7	90.8	49.3	40.8	38.1	37.7
	0	0	13-Apr	14	4:00:00	3600	61.3	96.8	85.2	36.7	97.6	72.5	45.3	38.6	37.7
	0	0	13-Apr	14	5:00:00	3600	56.9	92.5	79.9	36.8	94	65.1	47.3	39.4	38
	0	0	13-Apr	14	6:00:00	3600	66.3	101.9	91.6	36.8	109.3	74.9	62.4	45.9	39.6
	0	0	13-Apr	14	7:00:00	3600	65.1	100.7	84.9	37.1	98.6	75.6	70.9	56.4	45.5
	0	0	13-Apr	14	8:00:00	3600	67.3	102.9	99	38.6	110.4	74.9	70.3	56.9	46.6
	0	0	13-Apr	14	9:00:00	3600	65	100.5	87.1	40.7	100	75.4	71	58.4	50.1
	0	0	13-Apr	14	10:00:00	3600	64.7	100.2	85.7	40.5	98.1	74.7	70.7	60	51.4
	0	0	13-Apr	14	11:00:00	3600	69.5	105.1	102	42	113.8	75.2	71.6	61	53
	0	0	13-Apr	14	12:00:00	3600	64.6	100.2	83.3	40.7	95.6	74.2	70.7	59.6	51.7
	0	0	13-Apr	14	13:00:00	3600	75.4	111	108.8	40.7	121	74.6	70.3	59.2	52.2
	0	0	13-Apr	14	14:00:00	3600	64.9	100.5	87.3	41.2	98.3	75.1	70.3	58.6	51.4
	0	0	13-Apr	14	15:00:00	3600	70.8	106.4	103.2	42.4	114.2	74.8	70.2	60	53.3
	0	0	13-Apr	14	16:00:00	3600	69.1	104.7	100.3	41.4	112.4	77	72.1	61.6	51.6
	0	0	13-Apr	14	17:00:00	3600	64.9	100.5	95.1	40.4	106.2	74.4	67.8	54.8	48.5
	0	0	13-Apr	14	18:00:00	3600	67.8	103.3	100.6	41.1	114.2	75	69.3	56.7	49.5
	0	0	13-Apr	14	19:00:00	3600	62.1	97.6	83.3	41.5	96	73.1	65.5	53	47.7
	0	0	13-Apr	14	20:00:00	3600	62.1	97.7	88	39.3	100.8	72.8	62.6	48.9	45
	0	0	13-Apr	14	21:00:00	3600	59.2	94.8	80.4	38.6	94.2	71.2	59.1	46.7	42.6
	0	0	13-Apr	14	22:00:00	3600	60.6	96.1	86.1	39.8	97.1	71.8	59.9	48.8	44.5
	0	0	13-Apr	14	23:00:00	3600	68.9	104.5	99.7	40.4	111.7	78.3	69	48	44.9
Monday	0	0	14-Apr	14	0:00:00	3600	50.3	85.8	77.6	40.6	89.9	53.1	45.5	44	43.3
	0	0	14-Apr	14	1:00:00	3600	51.4	86.9	79	40.7	91.3	52.9	47.1	45.3	44
	0	0	14-Apr	14	2:00:00	3600	53	88.6	77.6	40.8	89	61	47.9	45.9	44.8
	0	0	14-Apr	14	3:00:00	3600	73.8	109.3	104.1	39.6	114.1	79.4	59.4	49.4	45.4
	0	0	14-Apr	14	4:00:00	3600	57.2	92.8	83.6	39.9	95.2	65.8	48.8	45	43.7
	0	0	14-Apr	14	5:00:00	3600	67.5	103.1	99.3	40.4	111.5	74.3	62.4	48.4	43.6
	0	0	14-Apr	14	6:00:00	3600	71.4	107	103.4	41.6	115.2	76.8	72.3	58.9	49

0	0	14-Apr	14	7:00:00	3600	73.1	108.7	104.4	42.1	117.5	77.3	74.7	69.5	58.6
0	0	14-Apr	14	8:00:00	3600	73.5	109.1	105.6	41	117.9	76.8	74	70.1	60.2
0	0	14-Apr	14	9:00:00	3600	70	105.6	101.7	40.7	111.5	75.8	72.5	63.3	53
0	0	14-Apr	14	10:00:00	3600	68.6	104.2	99.2	43.1	110	76	71.1	60.5	53
0	0	14-Apr	14	11:00:00	3600	65.4	100.9	84	44	96.6	74.9	71.4	61	53.1
0	0	14-Apr	14	12:00:00	3600	65.2	100.8	81.5	41.8	93.4	74.6	71.7	62.6	52.8
0	0	14-Apr	14	13:00:00	3600	65.5	101.1	84.9	43.2	98.1	75	71.3	63	53
*	0	14-Apr	14	14:00:00	3600	78	113.6	113.5	36.8	138.5	84	81.9	76.5	68.5
taken down	0	14-Apr	14	15:00:00	3600	60.1	95.7	94.8	36.8	116.4	62.7	49.7	39.9	38.2
0	0	14-Apr	14	16:00:00	3600	55.7	91.3	95.7	36.7	112.8	60.1	55.9	40.4	37.9
0	0	14-Apr	14	17:00:00	3600	57.6	93.1	83.2	49.5	92	63.1	59.1	56.6	55
0	0	14-Apr	14	18:00:00	3600	70.3	105.9	100.4	37.4	120.1	78.6	73	68.5	64.7
0	0	14-Apr	14	19:00:00	3600	71.9	107.5	90.7	37.2	107.5	79.7	76.9	72.3	67.8
0	0	14-Apr	14	20:00:00	3600	63.5	99.1	87.4	36.5	99.7	73.8	69.2	45.8	36.9
0	0	14-Apr	14	21:00:00	3600	73.8	109.4	108.9	52.5	133.5	77.8	74.3	68.8	66.1
0	0	14-Apr	14	22:00:00	3600	81.7	117.3	101	37.9	116.1	87.4	85.5	83.1	81
0	0	14-Apr	14	23:00:00	3600	82.9	118.5	94	64	113.8	86.9	85.1	83.7	82.4
0	0	15-Apr	14	0:00:00	3600	83.8	119.4	109.5	73.8	125	86.8	85.6	84.5	83.5
0	0	15-Apr	14	1:00:00	3600	82.3	117.9	105.3	36.8	117.8	86.9	85.4	83.9	81.6
0	0	15-Apr	14	2:00:00	3600	60.3	95.9	83.3	49	100.3	67.8	64.1	60.3	57.5
0	0	15-Apr	14	3:00:00	3600	68.7	104.3	92.6	37	111.4	76.6	74.8	66.6	59.4
0	0	15-Apr	14	4:00:00	3600	72.3	107.8	93.6	38.1	109.4	77.7	76.6	75.2	65.3
0	0	15-Apr	14	5:00:00	3600	72.7	108.2	112	49.8	129.3	71.8	66.5	63.3	60.6
0	0	15-Apr	14	6:00:00	3600	68.5	104.1	103.8	50.1	121.5	70.6	65.9	61.1	57.8
0	0	15-Apr	14	7:00:00	3600	81.8	117.3	105.8	38.6	130.8	90.2	88.1	80.8	59.4
0	0	15-Apr	14	8:00:00	3600	76.7	112.3	102.1	37.2	120.8	87.7	81.4	67.6	44.7
0	0	15-Apr	14	9:00:00	3600	77.8	113.3	97.9	36.7	108	86.7	82.5	77.9	65
0	0	15-Apr	14	10:00:00	963.6	78.9	108.7	104.5	36.9	125.1	87.7	83.5	77.7	64.4

***NOTE: Noise measurement "stopped" at 2:00 PM April 14. SLM taken off tree at that time.**

Hourly Average Maximum	78
Hourly Average Minimum	48.1
Maximum	113.5
Minimum	36.7
Daytime Hourly Average Minimum	64.3

APPENDIX D TRAFFIC VOLUMES AND WORKSHEETS

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Prepared by NDS/ATD

Volumes for: Wednesday, June 17, 2015

City: Martinez

Project #: 15-7552-001

Location: Joe DiMaggio Drive north of Ferry Street

Start Time	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	7	33			11	24				
12:15	2	29			0	36				
12:30	3	35			5	29				
12:45	0	41	12	138	0	33	16	122	28	260
1:00	0	33			4	24				
1:15	2	31			3	19				
1:30	3	16			2	35				
1:45	0	26	5	106	0	25	9	103	14	209
2:00	0	17			0	24				
2:15	1	27			1	28				
2:30	1	21			0	29				
2:45	0	32	2	97	0	25	1	106	3	203
3:00	3	21			2	49				
3:15	0	30			0	27				
3:30	1	28			0	19				
3:45	4	12	8	91	1	19	3	114	11	205
4:00	4	26			0	28				
4:15	5	22			2	22				
4:30	1	19			6	25				
4:45	9	23	19	90	1	22	9	97	28	187
5:00	8	30			1	28				
5:15	13	28			10	20				
5:30	12	47			3	27				
5:45	15	73	48	178	11	25	25	100	73	278
6:00	16	72			7	17				
6:15	18	93			7	39				
6:30	23	62			14	34				
6:45	26	49	83	276	12	25	40	115	123	391
7:00	23	39			12	32				
7:15	34	40			22	47				
7:30	25	37			15	46				
7:45	19	18	101	134	16	34	65	159	166	293
8:00	26	24			11	43				
8:15	27	28			21	47				
8:30	27	20			16	42				
8:45	31	16	111	88	22	52	70	184	181	272
9:00	32	26			27	61				
9:15	23	17			25	77				
9:30	21	12			31	57				
9:45	22	14	98	69	26	35	109	230	207	299
10:00	18	10			28	18				
10:15	16	8			37	9				
10:30	14	3			33	10				
10:45	25	6	73	27	26	6	124	43	197	70
11:00	26	5			22	12				
11:15	27	0			27	2				
11:30	29	4			29	3				
11:45	23	3	105	12	25	2	103	19	208	31
Total	665	1306	665	1306	574	1392	574	1392	1239	2698
Combined Total	1971		1971		1966		1966		3937	
AM Peak	11:45 AM				9:45 AM					
Vol.	120				124					
P.H.F.	0.857				0.838					
PM Peak	5:45 PM				8:45 PM					
Vol.	300				247					
P.H.F.	0.806				0.802					
Percentage	33.7%	66.3%			29.2%	70.8%				

ALL TRAFFIC DATA

City of Martinez
 All Vehicles on Unshifted
 Nothing on Bank 1
 Nothing on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 15-7551-001 Ferry Street-Marina Vista Avenue.ppd

Date : 6/16/2015

Unshifted Count = All Vehicles

START TIME	Ferry Street Southbound					Marina Vista Avenue Westbound					Ferry Street Northbound					Marina Vista Avenue Eastbound					Total	Uturn Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
07:00	0	8	2	0	10	3	27	5	0	35	0	10	0	0	10	0	0	0	0	0	55	0
07:15	0	6	0	0	6	12	27	6	0	45	1	9	0	0	10	0	0	0	0	0	61	0
07:30	0	8	4	0	12	8	26	8	0	42	1	12	0	0	13	0	0	0	0	0	67	0
07:45	0	8	4	0	12	13	37	8	0	58	0	8	0	0	8	0	0	0	0	0	78	0
Total	0	30	10	0	40	36	117	27	0	180	2	39	0	0	41	0	0	0	0	0	261	0
08:00	0	5	2	0	7	18	36	7	0	61	1	13	0	0	14	0	0	0	0	0	82	0
08:15	0	9	5	0	14	21	22	14	0	57	1	16	0	0	17	0	0	0	0	0	88	0
08:30	0	14	3	0	17	19	28	8	0	55	1	25	0	0	26	0	0	0	0	0	98	0
08:45	0	16	6	0	22	18	28	14	0	60	2	18	0	0	20	0	0	0	0	0	102	0
Total	0	44	16	0	60	76	114	43	0	233	5	72	0	0	77	0	0	0	0	0	370	0
16:00	0	25	6	0	31	6	29	13	0	48	3	10	0	0	13	0	0	0	0	0	92	0
16:15	0	27	5	0	32	10	16	26	0	52	4	17	0	1	22	0	0	0	0	0	106	1
16:30	0	27	15	0	42	8	27	14	0	49	5	13	0	0	18	0	0	0	0	0	109	0
16:45	0	22	9	0	31	7	24	15	0	46	2	14	0	0	16	0	0	0	0	0	93	0
Total	0	101	35	0	136	31	96	68	0	195	14	54	0	1	69	0	0	0	0	0	400	1
17:00	0	23	2	0	25	14	42	18	0	74	7	21	0	0	28	0	0	0	0	0	127	0
17:15	0	24	6	0	30	8	20	18	0	46	3	31	0	0	34	0	0	0	0	0	110	0
17:30	0	42	3	0	45	13	26	17	0	56	4	30	0	0	34	0	0	0	0	0	135	0
17:45	0	14	8	0	22	8	23	40	0	71	3	46	0	0	49	0	0	0	0	0	142	0
Total	0	103	19	0	122	43	111	93	0	247	17	128	0	0	145	0	0	0	0	0	514	0
Grand Total	0	278	80	0	358	186	438	231	0	855	38	293	0	1	332	0	0	0	0	0	1545	1
Apprch %	0.0%	77.7%	22.3%	0.0%		21.8%	51.2%	27.0%	0.0%		11.4%	88.3%	0.0%	0.3%		0.0%	0.0%	0.0%	0.0%	0.0%		
Total %	0.0%	18.0%	5.2%	0.0%	23.2%	12.0%	28.3%	15.0%	0.0%	55.3%	2.5%	19.0%	0.0%	0.1%	21.5%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

ALL TRAFFIC DATA

City of Martinez
 All Vehicles on Unshifted
 Nothing on Bank 1
 Nothing on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 15-7551-002 Ferry Street-Escobar Street.ppd

Date : 6/16/2015

Unshifted Count = All Vehicles

START TIME	Ferry Street Southbound					Escobar Street Westbound					Ferry Street Northbound					Escobar Street Eastbound					Total	Uturn Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
07:00	3	6	2	0	11	0	3	1	0	4	0	5	2	0	7	6	28	3	0	37	59	0
07:15	2	12	2	0	16	1	6	0	0	7	1	6	1	0	8	2	34	2	0	38	69	0
07:30	4	7	6	0	17	1	7	2	0	10	4	5	4	0	13	4	22	1	0	27	67	0
07:45	3	14	5	0	22	1	12	1	0	14	0	5	3	0	8	4	26	1	0	31	75	0
Total	12	39	15	0	66	3	28	4	0	35	5	21	10	0	36	16	110	7	0	133	270	0
08:00	5	16	2	0	23	2	6	2	0	10	2	1	1	0	4	10	32	5	0	47	84	0
08:15	7	21	2	0	30	1	11	5	0	17	1	4	2	0	7	8	34	2	0	44	98	0
08:30	6	25	2	0	33	1	8	5	0	14	1	9	2	0	12	14	31	4	0	49	108	0
08:45	8	20	4	0	32	1	12	5	0	18	2	7	5	0	14	11	32	1	0	44	108	0
Total	26	82	10	0	118	5	37	17	0	59	6	21	10	0	37	43	129	12	0	184	398	0
16:00	14	15	4	0	33	2	8	2	0	12	3	7	6	0	16	5	51	5	0	61	122	0
16:15	14	20	7	0	41	1	9	7	0	17	0	7	6	1	14	8	35	2	0	45	117	1
16:30	20	15	2	0	37	1	11	3	0	15	1	4	5	0	10	8	53	4	0	65	127	0
16:45	8	16	7	0	31	2	11	6	0	19	7	7	4	0	18	6	39	5	0	50	118	0
Total	56	66	20	0	142	6	39	18	0	63	11	25	21	1	58	27	178	16	0	221	484	1
17:00	12	21	7	0	40	2	6	3	0	11	4	8	6	0	18	17	56	5	0	78	147	0
17:15	18	13	5	0	36	1	8	7	0	16	2	8	6	0	16	17	26	4	0	47	115	0
17:30	27	22	9	0	58	1	7	4	0	12	6	14	4	0	24	15	38	3	0	56	150	0
17:45	9	10	5	0	24	0	6	11	0	17	0	20	4	0	24	21	30	2	0	53	118	0
Total	66	66	26	0	158	4	27	25	0	56	12	50	20	0	82	70	150	14	0	234	530	0
Grand Total	160	253	71	0	484	18	131	64	0	213	34	117	61	1	213	156	567	49	0	772	1682	1
Apprch %	33.1%	52.3%	14.7%	0.0%		8.5%	61.5%	30.0%	0.0%		16.0%	54.9%	28.6%	0.5%		20.2%	73.4%	6.3%	0.0%			
Total %	9.5%	15.0%	4.2%	0.0%	28.8%	1.1%	7.8%	3.8%	0.0%	12.7%	2.0%	7.0%	3.6%	0.1%	12.7%	9.3%	33.7%	2.9%	0.0%	45.9%	100.0%	

ALL TRAFFIC DATA

City of Martinez
 All Vehicles on Unshifted
 Nothing on Bank 1
 Nothing on Bank 2

(916) 771-8700

orders@atdtraffic.com

File Name : 15-7551-002 Ferry Street-Escobar Street.ppd

Date : 6/16/2015

Unshifted Count = All Vehicles

AM PEAK HOUR	Ferry Street Southbound					Escobar Street Westbound					Ferry Street Northbound					Escobar Street Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	5	16	2	0	23	2	6	2	0	10	2	1	1	0	4	10	32	5	0	47	84
08:15	7	21	2	0	30	1	11	5	0	17	1	4	2	0	7	8	34	2	0	44	98
08:30	6	25	2	0	33	1	8	5	0	14	1	9	2	0	12	14	31	4	0	49	108
08:45	8	20	4	0	32	1	12	5	0	18	2	7	5	0	14	11	32	1	0	44	108
Total Volume	26	82	10	0	118	5	37	17	0	59	6	21	10	0	37	43	129	12	0	184	398
% App Total	22.0%	69.5%	8.5%	0.0%		8.5%	62.7%	28.8%	0.0%		16.2%	56.8%	27.0%	0.0%		23.4%	70.1%	6.5%	0.0%		
PHF	.813	.820	.625	.000	.894	.625	.771	.850	.000	.819	.750	.583	.500	.000	.661	.768	.949	.600	.000	.939	.921

PM PEAK HOUR	Ferry Street Southbound					Escobar Street Westbound					Ferry Street Northbound					Escobar Street Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	8	16	7	0	31	2	11	6	0	19	7	7	4	0	18	6	39	5	0	50	118
17:00	12	21	7	0	40	2	6	3	0	11	4	8	6	0	18	17	56	5	0	78	147
17:15	18	13	5	0	36	1	8	7	0	16	2	8	6	0	16	17	26	4	0	47	115
17:30	27	22	9	0	58	1	7	4	0	12	6	14	4	0	24	15	38	3	0	56	150
Total Volume	65	72	28	0	165	6	32	20	0	58	19	37	20	0	76	55	159	17	0	231	530
% App Total	39.4%	43.6%	17.0%	0.0%		10.3%	55.2%	34.5%	0.0%		25.0%	48.7%	26.3%	0.0%		23.8%	68.8%	7.4%	0.0%		
PHF	.602	.818	.778	.000	.711	.750	.727	.714	.000	.763	.679	.661	.833	.000	.792	.809	.710	.850	.000	.740	.883

Phone:
E-Mail:

Fax:

ALL-WAY STOP CONTROL (AWSC) ANALYSIS

Analyst: AB
 Agency/Co.: LSA
 Date Performed:
 Analysis Time Period: AM
 Intersection: Ferry Street/Marina Vista Ave
 Jurisdiction: City of Martinez
 Units: U. S. Customary
 Analysis Year: 2015
 Project ID:
 East/West Street: Marina Vista Avenue
 North/South Street: Ferry Street

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	76	114	43	5	72	0	0	44	16
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LT	R	LT		TR	
PHF			1.00	1.00	1.00		1.00	
Flow Rate			190	43	77		60	
% Heavy Veh			1	1	1		1	
No. Lanes				2		1		1
Opposing-Lanes				0		1		1
Conflicting-lanes				1		2		2
Geometry group				1		2		2
Duration, T	1.00	hrs.						

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			190	43	77		60	
Left-Turn			76	0	5		0	
Right-Turn			0	43	0		16	
Prop. Left-Turns			0.4	0.0	0.1		0.0	
Prop. Right-Turns			0.0	1.0	0.0		0.3	
Prop. Heavy Vehicle			0.0	0.0	0.0		0.0	
Geometry Group				1		2		2
Adjustments Exhibit 17-33:								
hLT-adj				0.2		0.2		0.2

hRT-adj		-0.6		-0.6		-0.6
hHV-adj		1.7		1.7		1.7
hadj, computed	0.1	-0.6	0.0			-0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			190	43	77		60	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.17	0.04	0.07		0.05	
hd, final value			4.32	3.64	4.50		4.35	
x, final value			0.23	0.04	0.10		0.07	
Move-up time, m				2.0		2.0		2.0
Service Time			2.3	1.6	2.5		2.3	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			190	43	77		60	
Service Time			2.3	1.6	2.5		2.3	
Utilization, x			0.23	0.04	0.10		0.07	
Dep. headway, hd			4.32	3.64	4.50		4.35	
Capacity			440	293	327		310	
Delay			8.59	6.80	7.98		7.69	
LOS			A	A	A		A	
Approach:								
Delay				8.26		7.98		7.69
LOS				A		A		A
Intersection Delay	8.11				Intersection	LOS	A	

Phone:
E-Mail:

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ALL-WAY STOP CONTROL (AWSC) ANALYSIS

Analyst: AB
 Agency/Co.: LSA
 Date Performed: 6/24/2016
 Analysis Time Period: PM
 Intersection: Ferry Street/Marina Vista Ave
 Jurisdiction: City of Martinez
 Units: U. S. Customary
 Analysis Year: 2015
 Project ID:
 East/West Street: Marina Vista Avenue
 North/South Street: Ferry Street

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	43	111	93	17	128	0	0	103	19
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LT	R	LT		TR	
PHF			1.00	1.00	1.00		1.00	
Flow Rate			154	93	145		122	
% Heavy Veh			1	1	1		1	
No. Lanes				2		1		1
Opposing-Lanes				0		1		1
Conflicting-lanes				1		2		2
Geometry group				1		2		2
Duration, T	1.00	hrs.						

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			154	93	145		122	
Left-Turn			43	0	17		0	
Right-Turn			0	93	0		19	
Prop. Left-Turns			0.3	0.0	0.1		0.0	
Prop. Right-Turns			0.0	1.0	0.0		0.2	
Prop. Heavy Vehicle			0.0	0.0	0.0		0.0	
Geometry Group				1		2		2
Adjustments Exhibit 17-33:								
hLT-adj				0.2		0.2		0.2

hRT-adj		-0.6		-0.6		-0.6
hHV-adj		1.7		1.7		1.7
hadj, computed	0.1	-0.6	0.0			-0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			154	93	145		122	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.14	0.08	0.13		0.11	
hd, final value			4.61	3.95	4.62		4.53	
x, final value			0.20	0.10	0.19		0.15	
Move-up time, m				2.0		2.0		2.0
Service Time			2.6	1.9	2.6		2.5	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			154	93	145		122	
Service Time			2.6	1.9	2.6		2.5	
Utilization, x			0.20	0.10	0.19		0.15	
Dep. headway, hd			4.61	3.95	4.62		4.53	
Capacity			404	343	395		372	
Delay			8.74	7.40	8.68		8.36	
LOS			A	A	A		A	
Approach:								
Delay				8.23		8.68		8.36
LOS				A		A		A
Intersection Delay	8.39				Intersection LOS	A		

Phone:
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ALL-WAY STOP CONTROL (AWSC) ANALYSIS

Analyst: AB
 Agency/Co.: LSA
 Date Performed:
 Analysis Time Period: AM
 Intersection: Ferry Street/Escobar Street
 Jurisdiction: City of Martinez
 Units: U. S. Customary
 Analysis Year: 2015
 Project ID:
 East/West Street: Escobar Street
 North/South Street: Ferry Street

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	43	129	12	5	37	17	6	21	10	26	82	10
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate	184		59		37		118	
% Heavy Veh	0		1		1		1	
No. Lanes		1		1		1		1
Opposing-Lanes		1		1		1		1
Conflicting-lanes		1		1		1		1
Geometry group		1		1		1		1
Duration, T	1.00 hrs.							

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane	184		59		37		118	
Left-Turn	43		5		6		26	
Right-Turn	12		17		10		10	
Prop. Left-Turns	0.2		0.1		0.2		0.2	
Prop. Right-Turns	0.1		0.3		0.3		0.1	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
Geometry Group		1		1		1		1
Adjustments Exhibit 17-33:								
hLT-adj		0.2		0.2		0.2		0.2

hRT-adj	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7
hadj, computed	0.0	-0.1	-0.1	0.0

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate	184		59		37		118	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.16		0.05		0.03		0.10	
hd, final value	4.34		4.34		4.49		4.51	
x, final value	0.22		0.07		0.05		0.15	
Move-up time, m		2.0		2.0		2.0		2.0
Service Time	2.3		2.3		2.5		2.5	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate	184		59		37		118	
Service Time	2.3		2.3		2.5		2.5	
Utilization, x	0.22		0.07		0.05		0.15	
Dep. headway, hd	4.34		4.34		4.49		4.51	
Capacity	434		309		287		368	
Delay	8.58		7.67		7.70		8.29	
LOS	A		A		A		A	
Approach:								
Delay		8.58		7.67		7.70		8.29
LOS		A		A		A		A
Intersection Delay	8.28				Intersection LOS	A		

Phone:
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ALL-WAY STOP CONTROL (AWSC) ANALYSIS

Analyst: AB
 Agency/Co.: LSA
 Date Performed:
 Analysis Time Period: PM
 Intersection: Ferry Street/Escobar Street
 Jurisdiction: City of Martinez
 Units: U. S. Customary
 Analysis Year: 2015
 Project ID:
 East/West Street: Escobar Street
 North/South Street: Ferry Street

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	55	159	17	6	32	20	19	37	20	65	72	28
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate	231		58		76		165	
% Heavy Veh	0		1		1		1	
No. Lanes		1		1		1		1
Opposing-Lanes		1		1		1		1
Conflicting-lanes		1		1		1		1
Geometry group		1		1		1		1
Duration, T	1.00 hrs.							

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane	231		58		76		165	
Left-Turn	55		6		19		65	
Right-Turn	17		20		20		28	
Prop. Left-Turns	0.2		0.1		0.3		0.4	
Prop. Right-Turns	0.1		0.3		0.3		0.2	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
Geometry Group		1		1		1		1
Adjustments Exhibit 17-33:								
hLT-adj		0.2		0.2		0.2		0.2

hRT-adj	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7
hadj, computed	0.0	-0.2	-0.1	-0.0

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate	231		58		76		165	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.21		0.05		0.07		0.15	
hd, final value	4.57		4.61		4.72		4.69	
x, final value	0.29		0.07		0.10		0.22	
Move-up time, m		2.0		2.0		2.0		2.0
Service Time	2.6		2.6		2.7		2.7	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate	231		58		76		165	
Service Time	2.6		2.6		2.7		2.7	
Utilization, x	0.29		0.07		0.10		0.22	
Dep. headway, hd	4.57		4.61		4.72		4.69	
Capacity	481		308		326		415	
Delay	9.47		7.98		8.25		8.98	
LOS	A		A		A		A	
Approach:								
Delay		9.47		7.98		8.25		8.98
LOS		A		A		A		A
Intersection Delay	8.98				Intersection LOS	A		

Phone:
E-Mail:

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ALL-WAY STOP CONTROL (AWSC) ANALYSIS

Analyst: AB
 Agency/Co.: LSA
 Date Performed: 6/24/2016
 Analysis Time Period: AM
 Intersection: Ferry Street/Marina Vista Ave
 Jurisdiction: City of Martinez
 Units: U. S. Customary
 Analysis Year: 2015 Plus Project
 Project ID:
 East/West Street: Marina Vista Avenue
 North/South Street: Ferry Street

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	76	114	64	5	104	0	0	72	22
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LT	R	LT		TR	
PHF			1.00	1.00	1.00		1.00	
Flow Rate			190	64	109		94	
% Heavy Veh			1	1	1		1	
No. Lanes				2		1		1
Opposing-Lanes				0		1		1
Conflicting-lanes				1		2		2
Geometry group				1		2		2
Duration, T	1.00	hrs.						

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			190	64	109		94	
Left-Turn			76	0	5		0	
Right-Turn			0	64	0		22	
Prop. Left-Turns			0.4	0.0	0.0		0.0	
Prop. Right-Turns			0.0	1.0	0.0		0.2	
Prop. Heavy Vehicle			0.0	0.0	0.0		0.0	
Geometry Group				1		2		2
Adjustments Exhibit 17-33:								
hLT-adj				0.2		0.2		0.2

hRT-adj		-0.6		-0.6		-0.6
hHV-adj		1.7		1.7		1.7
hadj, computed	0.1	-0.6	0.0			-0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			190	64	109		94	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.17	0.06	0.10		0.08	
hd, final value			4.48	3.80	4.59		4.46	
x, final value			0.24	0.07	0.14		0.12	
Move-up time, m				2.0		2.0		2.0
Service Time			2.5	1.8	2.6		2.5	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			190	64	109		94	
Service Time			2.5	1.8	2.6		2.5	
Utilization, x			0.24	0.07	0.14		0.12	
Dep. headway, hd			4.48	3.80	4.59		4.46	
Capacity			440	314	359		344	
Delay			8.86	7.07	8.33		8.05	
LOS			A	A	A		A	
Approach:								
Delay				8.41		8.33		8.05
LOS				A		A		A
Intersection Delay	8.32				Intersection LOS	A		

Phone:
E-Mail:

Fax:

ALL-WAY STOP CONTROL (AWSC) ANALYSIS

Analyst: AB
 Agency/Co.: LSA
 Date Performed: 6/24/2016
 Analysis Time Period: PM
 Intersection: Ferry Street/Marina Vista Ave
 Jurisdiction: City of Martinez
 Units: U. S. Customary
 Analysis Year: 2015 Plus Project
 Project ID:
 East/West Street: Marina Vista Avenue
 North/South Street: Ferry Street

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	43	111	127	17	179	0	0	143	27
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LT	R	LT		TR	
PHF			1.00	1.00	1.00		1.00	
Flow Rate			154	127	196		170	
% Heavy Veh			1	1	1		1	
No. Lanes				2		1		1
Opposing-Lanes				0		1		1
Conflicting-lanes				1		2		2
Geometry group				1		2		2
Duration, T	1.00	hrs.						

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			154	127	196		170	
Left-Turn			43	0	17		0	
Right-Turn			0	127	0		27	
Prop. Left-Turns			0.3	0.0	0.1		0.0	
Prop. Right-Turns			0.0	1.0	0.0		0.2	
Prop. Heavy Vehicle			0.0	0.0	0.0		0.0	
Geometry Group				1		2		2
Adjustments Exhibit 17-33:								
hLT-adj				0.2		0.2		0.2

hRT-adj		-0.6		-0.6		-0.6
hHV-adj		1.7		1.7		1.7
hadj, computed	0.1	-0.6	0.0			-0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			154	127	196		170	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.14	0.11	0.17		0.15	
hd, final value			4.86	4.20	4.77		4.70	
x, final value			0.21	0.15	0.26		0.22	
Move-up time, m				2.0		2.0		2.0
Service Time			2.9	2.2	2.8		2.7	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			154	127	196		170	
Service Time			2.9	2.2	2.8		2.7	
Utilization, x			0.21	0.15	0.26		0.22	
Dep. headway, hd			4.86	4.20	4.77		4.70	
Capacity			404	377	446		420	
Delay			9.14	7.93	9.45		9.03	
LOS			A	A	A		A	
Approach:								
Delay				8.59		9.45		9.03
LOS				A		A		A
Intersection Delay	8.97				Intersection LOS	A		

Phone:
E-Mail:

Fax:

ALL-WAY STOP CONTROL (AWSC) ANALYSIS

Analyst: AB
 Agency/Co.: LSA
 Date Performed: 6/24/2016
 Analysis Time Period: AM
 Intersection: Ferry Street/Escobar Street
 Jurisdiction: City of Martinez
 Units: U. S. Customary
 Analysis Year: 2015 plus Project
 Project ID:
 East/West Street: Escobar Street
 North/South Street: Ferry Street

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	54	129	12	5	37	22	6	37	10	43	92	11
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate	195		64		53		146	
% Heavy Veh	0		1		1		1	
No. Lanes		1		1		1		1
Opposing-Lanes		1		1		1		1
Conflicting-lanes		1		1		1		1
Geometry group		1		1		1		1
Duration, T	1.00 hrs.							

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane	195		64		53		146	
Left-Turn	54		5		6		43	
Right-Turn	12		22		10		11	
Prop. Left-Turns	0.3		0.1		0.1		0.3	
Prop. Right-Turns	0.1		0.3		0.2		0.1	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
Geometry Group		1		1		1		1
Adjustments Exhibit 17-33:								
hLT-adj		0.2		0.2		0.2		0.2

hRT-adj	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7
hadj, computed	0.0	-0.2	-0.1	0.0

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate	195		64		53		146	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.17		0.06		0.05		0.13	
hd, final value	4.48		4.44		4.62		4.61	
x, final value	0.24		0.08		0.07		0.19	
Move-up time, m		2.0		2.0		2.0		2.0
Service Time	2.5		2.4		2.6		2.6	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate	195		64		53		146	
Service Time	2.5		2.4		2.6		2.6	
Utilization, x	0.24		0.08		0.07		0.19	
Dep. headway, hd	4.48		4.44		4.62		4.61	
Capacity	445		314		303		396	
Delay	8.91		7.82		7.96		8.67	
LOS	A		A		A		A	
Approach:								
Delay		8.91		7.82		7.96		8.67
LOS		A		A		A		A
Intersection Delay	8.57				Intersection LOS	A		

Phone:
E-Mail:

Fax:

ALL-WAY STOP CONTROL (AWSC) ANALYSIS

Analyst: AB
 Agency/Co.: LSA
 Date Performed: 6/24/2016
 Analysis Time Period: PM
 Intersection: Ferry Street/Escobar Street
 Jurisdiction: City of Martinez
 Units: U. S. Customary
 Analysis Year: 2015 plus Project
 Project ID:
 East/West Street: Escobar Street
 North/South Street: Ferry Street

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	72	159	17	6	32	28	19	63	20	89	86	30
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate	248		66		102		205	
% Heavy Veh	0		1		1		1	
No. Lanes		1		1		1		1
Opposing-Lanes		1		1		1		1
Conflicting-lanes		1		1		1		1
Geometry group		1		1		1		1
Duration, T	1.00 hrs.							

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane	248		66		102		205	
Left-Turn	72		6		19		89	
Right-Turn	17		28		20		30	
Prop. Left-Turns	0.3		0.1		0.2		0.4	
Prop. Right-Turns	0.1		0.4		0.2		0.1	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
Geometry Group		1		1		1		1
Adjustments Exhibit 17-33:								
hLT-adj		0.2		0.2		0.2		0.2

hRT-adj	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7
hadj, computed	0.0	-0.2	-0.1	0.0

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate	248		66		102		205	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.22		0.06		0.09		0.18	
hd, final value	4.79		4.80		4.91		4.85	
x, final value	0.33		0.09		0.14		0.28	
Move-up time, m		2.0		2.0		2.0		2.0
Service Time	2.8		2.8		2.9		2.9	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate	248		66		102		205	
Service Time	2.8		2.8		2.9		2.9	
Utilization, x	0.33		0.09		0.14		0.28	
Dep. headway, hd	4.79		4.80		4.91		4.85	
Capacity	498		316		352		455	
Delay	10.14		8.27		8.71		9.70	
LOS	B		A		A		A	
Approach:								
Delay		10.14		8.27		8.71		9.70
LOS		B		A		A		A
Intersection Delay	9.56							
Intersection LOS					A			
