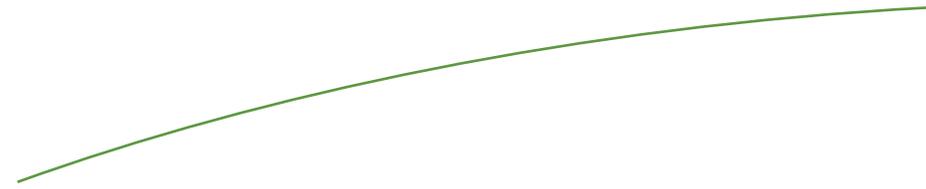




Appendix A

NOTICE OF PREPARATION AND
RESPONSES



Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Gateway Station West Residential Project

Lead Agency: City of Newark Contact Person: Terrence Grindall
Mailing Address: Community Development Department, 37101 Newark Blvd Phone: (510) 578-4208
City: Newark Zip: 94560 County: Alameda

Project Location: County: Alameda City/Nearest Community: City of Newark
Cross Streets: Hickory Street (east); Enterprise Drive (south) Zip Code: 94560
Longitude/Latitude (degrees, minutes and seconds): 37 ° 31 ' 09 " N / 122 ° 03 ' 16 " W Total Acres: 54.5
Assessor's Parcel No.: Parcel 1 of Parcel Map 9837 Section: 11 Twp.: 5 South Range: 2 West Base: Mt. Diablo
Within 2 Miles: State Hwy #: State Route 84 Waterways: San Francisco Bay
Airports: None Railways: Union Pacific Schools: Newark Junior High

Document Type:

CEQA: [X] NOP [] Draft EIR NEPA: [] NOI Other: [] Joint Document
[] Early Cons [] Supplement/Subsequent EIR [] EA [] Final Document
[] Neg Dec (Prior SCH No.) [] Draft EIS [] Other:
[] Mit Neg Dec Other:

Local Action Type:

[] General Plan Update [] Specific Plan [X] Rezone [] Annexation
[] General Plan Amendment [] Master Plan [] Prezone [] Redevelopment
[] General Plan Element [X] Planned Unit Development [] Use Permit [] Coastal Permit
[] Community Plan [X] Site Plan [X] Land Division (Subdivision, etc.) [] Other:

Development Type:

[X] Residential: Units 669 Acres 41
[] Office: Sq.ft. Acres Employees [] Transportation: Type
[] Commercial: Sq.ft. Acres Employees [] Mining: Mineral
[] Industrial: Sq.ft. Acres Employees [] Power: Type MW
[] Educational: [] Waste Treatment: Type MGD
[] Recreational: [] Hazardous Waste: Type
[] Water Facilities: Type MGD [] Other:

Project Issues Discussed in Document:

[X] Aesthetic/Visual [] Fiscal [] Recreation/Parks [] Vegetation
[] Agricultural Land [] Flood Plain/Flooding [] Schools/Universities [X] Water Quality
[X] Air Quality [] Forest Land/Fire Hazard [] Septic Systems [X] Water Supply/Groundwater
[] Archeological/Historical [X] Geologic/Seismic [] Sewer Capacity [X] Wetland/Riparian
[X] Biological Resources [] Minerals [] Soil Erosion/Compaction/Grading [X] Growth Inducement
[] Coastal Zone [X] Noise [] Solid Waste [] Land Use
[] Drainage/Absorption [] Population/Housing Balance [X] Toxic/Hazardous [X] Cumulative Effects
[] Economic/Jobs [] Public Services/Facilities [X] Traffic/Circulation [X] Other: Energy and GHG

Present Land Use/Zoning/General Plan Designation:

Former industrial area/Low-density Residential, Medium-density Residential, and Medium/High-density Residential

Project Description: (please use a separate page if necessary)

The project site is within the Dumbarton Transit Oriented Development (TOD) Specific Plan area with a purpose of facilitating development of a new neighborhood in close proximity to a train station planned separately as part of the Dumbarton Rail Service (DRS) Project. The proposed project includes the development of approximately 669 single- and multi-family residential units on approximately 41 acres of the site. The proposed residential development is consistent with the approved TOD Specific Plan area's Low-density Residential (LDR), Medium-density Residential (MDR), and Medium/High-density Residential (MHDR) land use designations.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

- | | |
|--|---|
| <input checked="" type="checkbox"/> Air Resources Board | <input type="checkbox"/> Office of Historic Preservation |
| <input type="checkbox"/> Boating & Waterways, Department of | <input type="checkbox"/> Office of Public School Construction |
| <input type="checkbox"/> California Emergency Management Agency | <input type="checkbox"/> Parks & Recreation, Department of |
| <input type="checkbox"/> California Highway Patrol | <input type="checkbox"/> Pesticide Regulation, Department of |
| <input checked="" type="checkbox"/> Caltrans District #4 | <input type="checkbox"/> Public Utilities Commission |
| <input type="checkbox"/> Caltrans Division of Aeronautics | <input checked="" type="checkbox"/> Regional WQCB #2 |
| <input type="checkbox"/> Caltrans Planning | <input type="checkbox"/> Resources Agency |
| <input type="checkbox"/> Central Valley Flood Protection Board | <input type="checkbox"/> Resources Recycling and Recovery, Department of |
| <input type="checkbox"/> Coachella Valley Mtns. Conservancy | <input checked="" type="checkbox"/> S.F. Bay Conservation & Development Comm. |
| <input type="checkbox"/> Coastal Commission | <input type="checkbox"/> San Gabriel & Lower L.A. Rivers & Mtns. Conservancy |
| <input type="checkbox"/> Colorado River Board | <input type="checkbox"/> San Joaquin River Conservancy |
| <input type="checkbox"/> Conservation, Department of | <input type="checkbox"/> Santa Monica Mtns. Conservancy |
| <input type="checkbox"/> Corrections, Department of | <input type="checkbox"/> State Lands Commission |
| <input type="checkbox"/> Delta Protection Commission | <input type="checkbox"/> SWRCB: Clean Water Grants |
| <input type="checkbox"/> Education, Department of | <input type="checkbox"/> SWRCB: Water Quality |
| <input type="checkbox"/> Energy Commission | <input type="checkbox"/> SWRCB: Water Rights |
| <input checked="" type="checkbox"/> Fish & Game Region #3 | <input type="checkbox"/> Tahoe Regional Planning Agency |
| <input type="checkbox"/> Food & Agriculture, Department of | <input type="checkbox"/> Toxic Substances Control, Department of |
| <input type="checkbox"/> Forestry and Fire Protection, Department of | <input type="checkbox"/> Water Resources, Department of |
| <input type="checkbox"/> General Services, Department of | <input type="checkbox"/> Other: Alameda County Water District |
| <input type="checkbox"/> Health Services, Department of | <input checked="" type="checkbox"/> Other: City of Fremont |
| <input type="checkbox"/> Housing & Community Development | |
| <input type="checkbox"/> Native American Heritage Commission | |

Local Public Review Period (to be filled in by lead agency)

Starting Date 08/08/2014 Ending Date 09/08/2014

Lead Agency (Complete if applicable):

Consulting Firm: <u>HELIX Environmental Planning Inc.</u>	Applicant: <u>Dumbarton Area 2, LLC</u>
Address: <u>11 Natoma Street, Suite 155</u>	Address: <u>500 La Gonda Way, Suite 102</u>
City/State/Zip: <u>Folsom, CA 95630</u>	City/State/Zip: <u>Danville, CA 94526</u>
Contact: <u>Dave Claycomb</u>	Phone: <u>(925) 984-7137</u>
Phone: <u>(619) 992-4117</u>	

Signature of Lead Agency Representative:  Date: 8-7-14

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.



CITY OF NEWARK, CALIFORNIA

37101 Newark Boulevard • Newark, California 94560-3796 • (510) 578-4000 • FAX (510) 578-4306

To: State Agencies
Responsible Agencies
Local and Public Agencies
Trustee Agencies
Interested Parties

From: Terrence Grindall
City of Newark
Community Development Department
37101 Newark Boulevard
Newark, CA 94560

**NOTICE OF PREPARATION OF A SUPPLEMENTAL ENVIRONMENTAL IMPACT
REPORT FOR THE DUMBARTON TRANSIT ORIENTED DEVELOPMENT
GATEWAY STATION WEST RESIDENTIAL PROJECT**

The City of Newark (City) will be the Lead Agency under the California Environmental Quality Act (CEQA) and will prepare a Supplemental Environmental Impact Report (SEIR) for the above referenced project. We would like to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. This SEIR may be used by your agency when considering approvals for this project.

The project description, location, and a brief summary of potential environmental effects are attached. A Public Scoping Meeting will be held on August 18, 2014, at 2:00 p.m. to take comments regarding the scope and content of the draft SEIR. The Scoping Meeting will be held at Newark City Hall, 37101 Newark Boulevard, Newark, CA, in the City Council Chambers.

According to State law, the deadline for your response is 30 days after receipt of this notice; however, we would appreciate an earlier response, if possible. Written comments will be accepted until September 8, 2014 at 5:00 p.m.

Please send responses to Terrence Grindall, Community Development Director, City of Newark, CA 94560-3796 or by email: Terrence.grindall@newark.org. Emailed responses are encouraged. Please identify a contact person in your agency.

Terrence Grindall
Assistant City Manager

A handwritten signature in blue ink that reads "Terrence Grindall".

Date: 8-6-14

**NOTICE OF PREPARATION OF A
SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT
FOR THE DUMBARTON TRANSIT ORIENTED DEVELOPMENT
GATEWAY STATION WEST RESIDENTIAL PROJECT**

A. INTRODUCTION

The purpose of a Supplemental Environmental Impact Report (SEIR) is to inform decision makers and the general public of the environmental effects of a proposed project that were not known at the time previous environmental review was conducted for the project. The SEIR process is intended to provide environmental information sufficient to evaluate a project and its potential for significant impacts on the environment; to examine methods of reducing adverse environmental impacts; and to consider alternatives to the project. Although an SEIR is one of the first documents to be reviewed when considering a project, the document itself, including its certification, does not constitute project approval. Upon finding the SEIR complete and in compliance with the California Environmental Quality Act (CEQA) of 1970, as amended, the City Council will consider certification of the SEIR at a public hearing and may take action on the proposed Dumbarton Transit Oriented Development (TOD) Gateway Station West Residential Project (Gateway Station West project).

The City certified the Dumbarton TOD Specific Plan EIR, and adopted a General Plan Amendment to approve the Specific Plan, in 2011. The Dumbarton TOD Specific Plan EIR now serves as the master Program EIR for the Specific Plan area, which includes the Gateway Station West project parcels. The SEIR for the proposed Gateway Station West Project will be prepared and processed in accordance with CEQA, and will “tier” off of the certified Dumbarton TOD Specific Plan EIR. In accordance with the requirements of CEQA, the SEIR will include:

- Project summary,
- Project description,
- Description of the existing environmental setting, potential environmental impacts, including those that were not described in the Dumbarton TOD Specific Plan EIR, and applicable mitigation measures,
- Alternatives to the project as proposed, and
- Environmental consequences, including: (a) any significant environmental effects which cannot be avoided if the project is implemented; (b) the growth-inducing impacts of the proposed project, and (c) cumulative impacts.

B. PROJECT LOCATION

The proposed Gateway Station West Project site is located in the City of Newark southwest of Highway 84 and Thornton Avenue. The 54.5-acre project site is bounded by Hickory Street on the east and solar salt production basins on the west. Enterprise Drive (formerly Wells Ave) terminates near the northeast corner of the property. The property is bounded by vacant industrial land on the north and vacant undeveloped land on the south. Construction of residential development associated with the Dumbarton TOD Specific Plan is underway to the east of the project site, east of Hickory Street and south of Enterprise Drive. More specifically,

the site is located in Section 11 of Township 5 South, and Range 2 West of the U.S. Geological Survey (USGS) 7.5-minute "Newark, California" quadrangle map and it is further described as Parcel 1 of Parcel Map 9837. Regional/vicinity and aerial maps of the project site are attached to this Notice of Preparation (NOP) as Figures 1 and 2, respectively.

The project site is generally located in a former industrial area, with open space and residential uses in the vicinity. To the north of the site is the former FMC Corporation facility and the existing Union Pacific Railroad corridor, to the east is the former Ashland Chemical Company and Torian facility, to the south is the Plummer Creek Wetland Mitigation Bank, and to the west are the Cargill bittern ponds.

As described above, the project site is within the Dumbarton TOD Specific Plan area, the Program EIR for which is the foundation document upon which subsequent projects proposed under the program are evaluated. The Specific Plan area encompasses approximately 233 acres of land in the vicinity of the Union Pacific Railroad corridor, which is also the future Dumbarton Rail Corridor (DRC). The purpose of the Dumbarton TOD Specific Plan is to facilitate the development of a new neighborhood around a train station planned separately as part of the Dumbarton Rail Service (DRS) Project. The DRS is still under development and will undergo separate environmental analysis in the future. The proposed Gateway Station Project will be analyzed and reviewed in light of the prior certified Dumbarton TOD Specific Plan EIR as the next step in the City's CEQA process for implementation of projects within the approved Dumbarton TOD Specific Plan.

C. DESCRIPTION OF THE PROPOSED PROJECT

The proposed project includes the development of approximately 669 single- and multi-family residential units on approximately 41 acres of the site. The proposed residential development is consistent with the approved Specific Plan area Low-density Residential (LDR), Medium-density Residential (MDR), and Medium/High-density Residential (MHDR) land use designations.

D. ENVIRONMENTAL EFFECTS OF THE PROJECT

The SEIR will address the following environmental issues that were not fully analyzed at a project-specific level in the Dumbarton TOD Specific Plan EIR including: aesthetics, air quality and air toxics, biological resources, energy, geology and soils, greenhouse gases, hazards and hazardous materials, hydrology/water quality, noise, and transportation/traffic. Cumulative impacts, alternatives to the project, effects found not to be significant, and growth-inducing impacts will also be examined. A brief discussion of several of the potential environmental issues related to the proposed Gateway Station West development is presented below.

Aesthetics

The SEIR will include a summary of the visual impact analysis that will be prepared to assess the degree to which the proposed project could modify scenic resources and alter the existing visual character of the site and surroundings. Although the project site is within an industrial area, it is also adjacent to the existing Plummer Creek Mitigation Bank and in the vicinity of the

San Francisco Bay Trail, the Don Edwards San Francisco Bay National Wildlife Refuge, the Newark Slough, and further afield, San Francisco Bay. The SEIR will identify whether any project features would be visible from Key Observation Points associated with these nearby scenic and recreational resources. Finally, the aesthetics analysis will address the potential for the project to produce new sources of light or glare and the project's consistency with relevant City of Newark and Dumbarton TOD Specific Plan design guidelines. Mitigation measures and/or design features will be identified to reduce and avoid aesthetics impacts, as applicable.

Air Quality/Air Toxics

The SEIR will describe the existing air quality conditions in the Bay Area and, based on an Air Quality and Greenhouse Gas (GHG) Technical Report and air toxics assessment, it will evaluate the air quality impacts of the proposed Corrective Action Plan (CAP; described further below) remediation activities and subsequent construction of proposed residences. The project site is proximate to existing and future residential uses and the project would place new residences next to existing light industrial uses. Air quality impacts to future residents from the existing industrial development will also be addressed, as well as anticipated criteria pollutant emissions associated with project construction and operations. Mitigation measures and/or design features will be identified to reduce and avoid air quality impacts, as applicable.

Biological Resources

A Biological Technical Report will document the existing biological resources on the site, and nearby, and it will assess suitability of the site as habitat for the salt marsh harvest mouse and other sensitive species. The SEIR will describe the existing vegetation communities, plant and wildlife species, and jurisdictional resources on site and in the vicinity and will discuss potential impacts of the proposed project upon sensitive biological resources. Mitigation measures and/or design features will be identified as applicable to lessen or avoid biological resources impacts.

Energy

As part of the Air Quality/GHG Technical Report, estimates of the project's energy consumption will be prepared and summarized in the SEIR in accordance with recent case law and modifications to the State CEQA Guidelines. The SEIR analysis will include an assessment of the electrical, vehicular, and water conveyance and solid waste-related energy demands associated with project construction and operations. Mitigation measures and/or design features will be identified to reduce and avoid energy impacts, as applicable.

Geology and Soils

A Preliminary Geotechnical Investigation for the project site will be summarized in the SEIR. The SEIR analysis will include discussions of the site's underlying geologic formation(s), surface soils, and seismic features, and will identify potential geologic and seismic hazards. Potential hazardous material impacts to soils will be discussed in detail in the Hazards and Hazardous Materials section of the SEIR (as described below), and cross-referenced in the Geology and Soils section of the SEIR. Mitigation measures and/or design features will be identified to reduce and avoid geology and soils impacts, as applicable.

Greenhouse Gas Emissions

The Air Quality/GHG Technical Report will include an evaluation of GHG emissions associated with project construction and operations, which will be summarized in the SEIR. The SEIR will confirm that the proposed project incorporates applicable GHG reduction measures previously identified in the Dumbarton TOD Specific Plan EIR; and will address the project's compliance with applicable GHG reduction policies included in the Bay Area Air Quality Management District's 2010 CEQA Air Quality Guidelines, and the City of Newark's 2010 Climate Action Plan Initial Framework and 2013 Draft General Plan.

Hazardous Materials

The project site is heavily disturbed as a result of past industrial and other uses including: construction and operation of settling basins and drainage ditches, manipulation of site hydrology, removal of rock/gravel, the placement and removal of magnesia and gypsum, storage of construction equipment and materials, and skeet shooting and pistol ranges. In addition, a bedrock outcrop in the southeastern portion of the site is comprised of serpentine bedrock that contains chrysotile, a form of naturally occurring asbestos. A Phase I Environmental Site Assessment (ESA) identified recognized and historical environmental conditions (RECs and HRECs) related to past industrial uses, as well as naturally occurring conditions. Additionally, the northeastern portion of the site contains four wells that are part of a groundwater monitoring network used to track impacts to groundwater originating off site from the nearby Ashland Chemical Company's property.

The SEIR will summarize the relevant portions of the Phase I ESA. The proposed project includes a CAP to address industrial activities that have resulted in hazardous materials impacts to groundwater and soil, and identifies associated remediation measures. The SEIR will address RECs and HRECs as well as the implementation of a final CAP to allow residential development of the site. The SEIR and CAP will provide documentation and analysis showing that hazardous material impacts will be mitigated to achieve residential environmental screening levels or other approved goals. The SEIR will also address the implications of constructing residences adjacent to the existing light industrial development in the vicinity. A survey of proximate hazardous materials users will be completed to identify businesses and other facilities that use and/or store toxic or hazardous substances. Mitigation measures will be identified, as applicable, to lessen or avoid hazardous materials impacts.

Hydrology/Water Quality

A project-specific Drainage Study and a Water Quality Technical Report (WQTR) will be prepared and summarized in the SEIR. The hydrology and water quality analyses will address pre- and post-development flows and drainage patterns both on and off site, adequacy of downstream drainage features, and potential effects of project construction and operations on surface and ground water quality. Consideration will be given to the existing wetlands on site that would be preserved as part of project development, as well as to the site's proximity to the Plummer Creek Mitigation Bank and San Francisco Bay. In addition, potential hazardous materials impacts to groundwater will be discussed in detail in the Hazards and Hazardous Materials section of the SEIR (as noted above), and cross-referenced in the Hydrology/Water Quality section of the SEIR. Consistent with the recommendations in the Drainage Study and WQTR, the SEIR will identify typical water quality control features and Best Management

Practices (BMPs) to be utilized during construction and operations to minimize potential impacts. Such features and BMPs are typically incorporated as project design features; however, mitigation measures may also be identified to reduce and avoid hydrology and water quality impacts, as applicable.

Noise

A Noise Technical Report will be prepared and summarized in the SEIR. The noise analysis will address construction noise and vibration and operational noise (including stationary and traffic sources), as well as off-site sources, and determine the project's consistency with the City's noise ordinance and General Plan noise standards. As a result of the site's proximity to the future Dumbarton Rail Corridor, an estimate of noise levels associated with multi-modal rail operations will be included in the SEIR. Potential construction noise effects on sensitive human and wildlife receptors in the vicinity of the project site also will be addressed. Mitigation measures and/or design features will be identified to reduce and avoid impacts as applicable.

Transportation/Traffic

A Traffic Technical Memorandum will be prepared and summarized in the SEIR. Although the proposed project is nearly consistent with the number of residential units proposed for the site in the Dumbarton TOD Specific Plan EIR, a larger percentage of those units would be single-family residential thereby potentially representing a higher trip generation rate than the volumes assumed in the Specific Plan EIR. The traffic memorandum and SEIR section will provide a comparison between the two and account for changes in anticipated traffic and circulation within the Specific Plan area, including proposed transit amenities. The project's Frontage Concept Design also will be addressed to determine consistency with the Specific Plan objective of "compact, connected, safe and walkable neighborhoods." Mitigation measures and/or design features will be identified to reduce and avoid noise impacts, as applicable.

Cumulative Impacts

The SEIR will include a discussion of cumulative impacts from the project in combination with other past, pending, and reasonably foreseeable future development in the area, building upon what has already been disclosed in the Dumbarton TOD Specific Plan EIR. Mitigation and avoidance measures will be identified for significant cumulative impacts, as applicable.

Alternatives to the Project

In conformance with CEQA, alternatives to the proposed project will be evaluated, including a "No Project" alternative. Other alternatives analyzed will be identified and analyzed based on their ability to reduce or avoid environmental impacts while meeting the basic objectives of the project.

Growth-Inducing Impacts

The SEIR will discuss the ways in which the proposed project may foster growth in the surrounding environment beyond levels identified in the Dumbarton TOD Specific Plan EIR.

Other Sections

The SEIR will include copies of the technical reports and all sections required by the State CEQA Guidelines including Effects Found Not to be Significant, Significant Unavoidable Impacts, References, and Authors and Consultants.

E. SCOPING COMMENTS

We are soliciting comments as to the scope and content of the environmental information appropriate to your agency's statutory responsibilities or of interest to your organization; specifically, we are requesting the following:

1. Identify significant environmental effects and mitigation measures that you believe need to be explored in the SEIR with supporting discussion of why you believe these effects may be significant.
2. Describe special studies and other information that you believe are necessary for the City to analyze the significant environmental effects, alternatives, and mitigation measures you have identified.
3. For public agencies that provide infrastructure and public services, identify any facilities that will be required to provide services to support the proposed project;
4. Indicate whether staff from your agency would like to meet with City staff to discuss the scope and content of the SEIR's environmental information;
5. Provide the name, title, telephone number, postal, and email addresses of the contact person from your agency or organization that we can contact regarding your comments; and
6. Identify project alternatives that you believe need to be explored in the SEIR.

Comments may be sent to:

Terrence Grindall
City of Newark
Community Development Department
37101 Newark Boulevard
Newark, CA 94560
<Terrence.Grindall@newark.org>

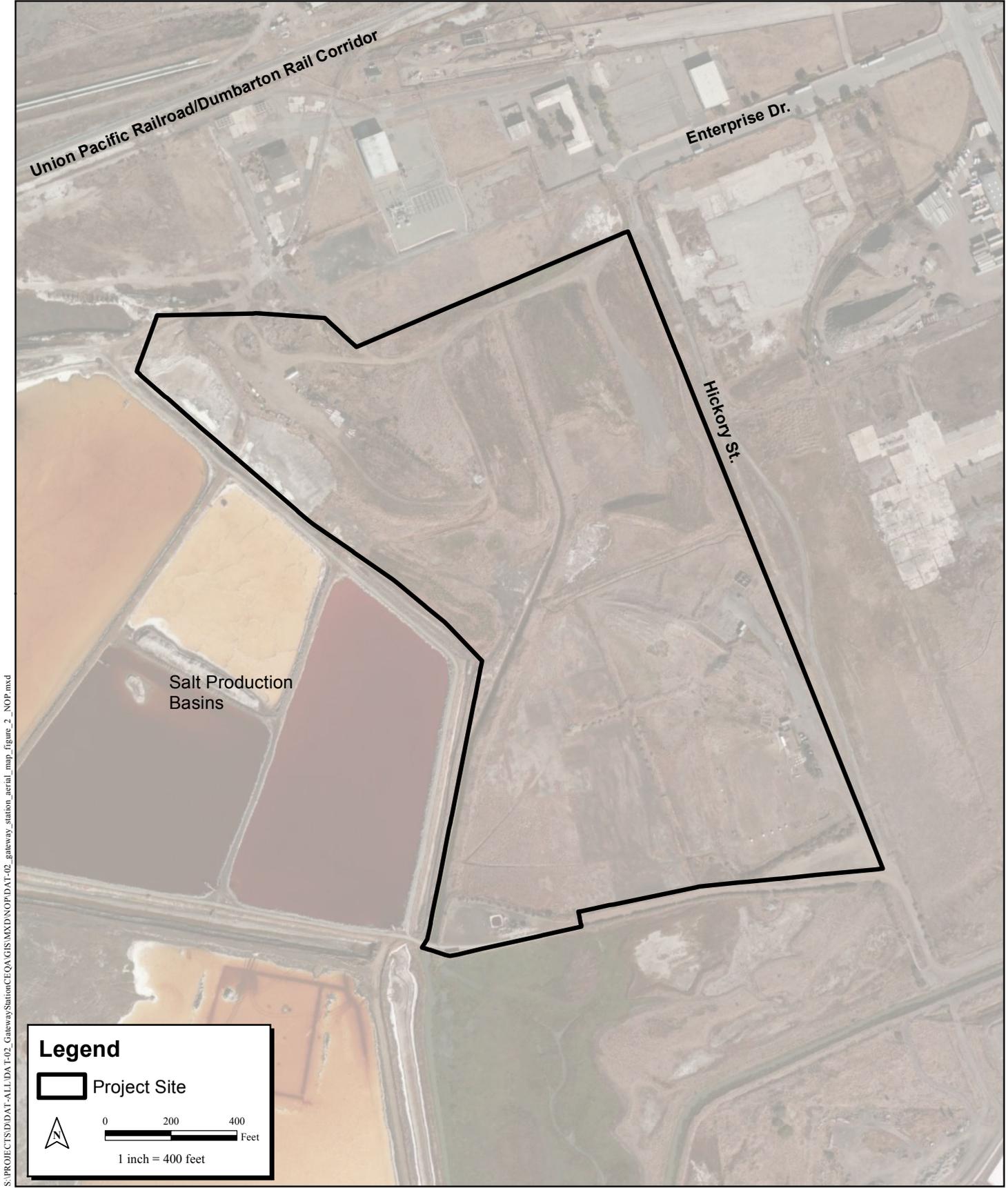


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Base Map: USGS, ESRI 2014
 Map Date: 07-31-2014

Site & Vicinity Map

GATEWAY STATION WEST



S:\PROJECTS\ID\DAT-ALL\DAT-02_GatewayStation\CEQA GIS\MXD\NO\DAT-02_gateway_station_aerial_mmp_figure_2_NOP.mxd

Legend

 Project Site

 0 200 400 Feet

1 inch = 400 feet

Aerial Source: ESRI, 2010.
Map Date: 07/31/2014

Aerial Map

GATEWAY STATION WEST

DEPARTMENT OF TRANSPORTATION

DISTRICT 4

P.O. BOX 23660

OAKLAND, CA 94623-0660

PHONE (510) 286-6053

FAX (510) 286-5559

TTY 711

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*Serious Drought.
Help save water!*

September 8, 2014

ALA084459
ALA/84/PM 3.5
SCH# 2014082022

Mr. Terrence Grindall
Community Development Department
City of Newark
37101 Newark Boulevard
Newark, CA 94560

Dear Mr. Grindall:

Gateway Station West Residential – Notice of Preparation (NOP)

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the project referenced above. We have reviewed the NOP and have the following comments to offer.

Traffic Impact Study (TIS)

One of Caltrans' ongoing responsibilities is to collaborate with local agencies to avoid, eliminate, or reduce to insignificance potential adverse impacts by local development on State highways. We recommend using the Caltrans *Guide for the Preparation of Traffic Impact Studies* (TIS Guide) for determining which scenarios and methodologies to use in the analysis. The TIS Guide is a starting point for collaboration between the lead agency and Caltrans in determining when a TIS is needed. The appropriate level of study is determined by the particulars of a project, the prevailing highway conditions, and the forecasted traffic. The TIS Guide is available at the following website address:

http://dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf.

The TIS should include:

1. Vicinity map, regional location map, and a site plan clearly showing project access in relation to nearby State roadways. Ingress and egress for all project components should be clearly identified. The State right-of-way (ROW) should be clearly identified. The maps should also include project driveways, local roads and intersections, parking, and transit facilities.
2. Project-related trip generation, distribution, and assignment. The assumptions and methodologies used to develop this information should be detailed in the study, and should be supported with appropriate documentation.

3. Average Daily Traffic, AM and PM peak hour volumes and levels of service (LOS) on all roadways where potentially significant impacts may occur, including crossroads and controlled intersections for existing, existing plus project, cumulative and cumulative plus project scenarios. Calculation of cumulative traffic volumes should consider all traffic-generating developments, both existing and future, that would affect study area roadways and intersections. The analysis should clearly identify the project's contribution to area traffic and any degradation to existing and cumulative LOS. Caltrans' LOS threshold, which is the transition between LOS C and D, and is explained in detail in the TIS Guide, should be applied to all State facilities.
4. Schematic illustration of traffic conditions including the project site and study area roadways, trip distribution percentages and volumes as well as intersection geometrics (i.e., lane configurations) for the scenarios described above.
5. The project site building potential as identified in the General Plan. The project's consistency with both the Circulation Element of the General Plan and the Congestion Management Agency's Congestion Management Plan should be evaluated.
6. Identification of mitigation for any roadway mainline section or intersection with insufficient capacity to maintain an acceptable LOS with the addition of project-related and/or cumulative traffic.

Lead Agency

As the lead agency, the City of Newark (City) is responsible for all project mitigation, including any needed improvements to State highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

This information should also be presented in the Mitigation Monitoring and Reporting Plan of the environmental document. Required roadway improvements should be completed prior to issuance of the Certificate of Occupancy.

Vehicle Trip Reduction

Caltrans commends the City for the Dumbarton Transit Oriented Development (TOD) Specific Plan and for proposing this particular project under the TOD. Caltrans encourages the City to continue locating any needed housing, jobs and neighborhood services near major mass transit centers, with connecting streets configured to facilitate walking and biking, as a means of promoting mass transit use and reducing regional vehicle miles traveled and traffic impacts on the State highways.

We also commend and encourage the City to continue developing Travel Demand Management (TDM) policies to promote usage of nearby public transit lines and reduce vehicle trips on the State Highway System. These policies could include lower parking ratios, car-sharing programs, bicycle parking and showers for residents, and providing transit passes to residents, among others.

In addition, please ensure secondary impacts on pedestrians and bicyclists resulting from any traffic impact mitigation measures are analyzed. The analysis should describe any pedestrian and bicycle mitigation measures and safety countermeasures that would in turn be needed as a means of maintaining and improving access to transit facilities and reducing vehicle trips and traffic impacts on State highways.

Habitat Restoration and Management

Project level activities related to habitat restoration and management should be done in coordination with local and regional Habitat Conservation Plans, and with Caltrans where our programs share stewardship responsibilities for habitats, species, and/or migration routes.

Potential for impacts to Caltrans mitigation site(s) in the vicinity of the proposed project should be disclosed and analyzed in the environmental document. If there is the potential for any impacts to a mitigation site, the Lead Agency should consult with Caltrans District 4 Division of Environmental Planning and Engineering at (510) 286-7182.

Sea Level Rise

The effects of sea level rise may have impacts on transportation facilities located in the project area. Executive Order (EO) S-13-08 directs State agencies planning construction projects in areas vulnerable to sea level rise to begin planning for potential impacts by considering a range of sea level rise scenarios for the years 2050 and 2100. Higher water levels may increase erosion rates, change environmental characteristics that affect material durability, lead to increased groundwater levels and change sediment movement along shores and at estuaries and river mouths, as well as affect soil pore pressure at dikes and levees on which transportation facilities are constructed. All these factors must be addressed through geotechnical and hydrological studies conducted in coordination with Caltrans.

Traffic Impact Fees

Please identify traffic impact fees to be used for project mitigation. Development plans should require traffic impact fees based on projected traffic and/or based on associated cost estimates for public transportation facilities necessitated by development. Scheduling and costs associated with planned improvements on State ROW should be listed, in addition to identifying viable funding sources correlated to the pace of improvements for roadway improvements, if any.

Mr. Terrence Grindall/City of Newark

September 8, 2014

Page 4

Should you have any questions regarding this letter, please contact Brian Brandert of my staff at (510) 286-5505 or brian.brandert@dot.ca.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Erik Alm', with a stylized flourish at the end.

ERIK ALM, AICP

District Branch Chief

Local Development - Intergovernmental Review

c: Scott Morgan, State Clearinghouse

PUBLIC UTILITIES COMMISSION

505 Van Ness Avenue
SAN FRANCISCO, CA 94102
(415) 703-1815



August 20, 2014

Terrence Grindall
City of Newark
37101 Newark Blvd
Newark, CA 94560

Dear Mr. Grindall:

Re: SCH 2014082022 Newark Gateway Station West Residential - NOP

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires Commission approval for the construction or alteration of crossings and grants the Commission exclusive power on the design, alteration, and closure of crossings in California. The Commission's Rail Crossings Engineering Branch (RCEB) is in receipt of the Notice of Preparation (NOP) for the proposed Gateway Station West Residential project. The City of Newark (City) is the lead agency.

The project consists of the development of 669 single and multi-family residential units on approximately 41 acres of the site. The Willow Street crossing (DOT# 750021M) is located north east of the project site.

Any development adjacent to or near the railroad right-of-way (ROW) should be planned with the safety of the rail corridor in mind. New developments will increase traffic volumes of both motorists and pedestrians not only on streets and at intersections, but also at any adjacent at-grade rail crossing. This can lead to several problems including but not limited to trespassing, pedestrian injury or fatality, and vehicular cueing accidents. Any traffic impact studies undertaken for the project should also address rail crossing safety analysis and associated proposed mitigation measures. Safety analysis should include queuing on tracks, pedestrian movements, turning movements and sightlines. Additional safety improvement measures may include the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes (e.g., addition or upgrade of crossing warning devices, active and passive signs, medians, curbs, tactile warning surfaces and edge lines on sidewalks at railroad crossings, channelization fencing, pedestrian swing gates, and bike lanes).

RCEB would like to be involved with safety improvements associated with the project to ensure that the development is made with the safety of the rail corridor in mind. This includes considering pedestrian circulation patterns or destinations with respect to railroad ROW and compliance with the Americans with Disabilities Act (ADA). As part of the project, RCEB recommends at a minimum the following safety improvements at the Willow Street crossing to better address our safety concerns:

Terrence Grindall
August 20, 2014
Page 2 of 2

- Installation of sidewalks and ADA-compliant detectable warning devices on all approaches;
- Installation of bicycle lanes to ensure the safety of bicyclists while riding through the crossing;
- There appears to be a driveway immediately adjacent to the railroad crossing. The City should consider removing or relocating the driveway further from the crossing;
- Installation of raised medians on both approaches in order to avoid gate drive around; and
- Grade separation of the crossing.

In addition, construction of a new crossing or modification to an existing crossing requires authorization from the Commission. RCEB representatives are available for consultation on any potential safety impacts or concerns on the nearby crossings. More information can be found at: <http://www.cpuc.ca.gov/PUC/safety/Rail/Crossings/index.htm>.

If you have any questions in this matter, please contact me at (415) 703-1815, siavash.mozaffari@cpuc.ca.gov.

Sincerely,

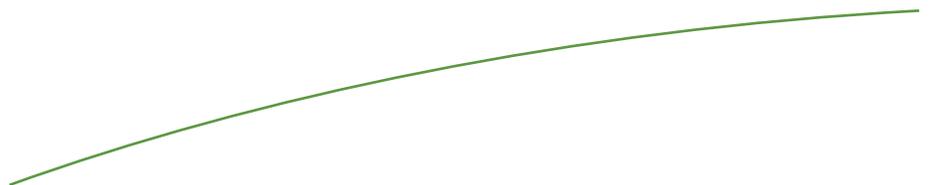


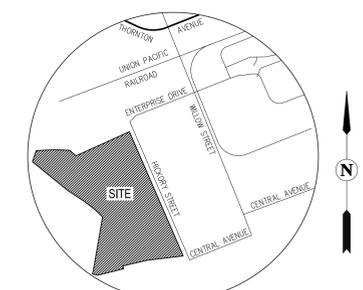
Sia Mozaffari
Utilities Engineer
Rail Crossings Engineering Section
Safety and Enforcement Division



Appendix B

TENTATIVE MAP AND DRAWINGS





VICINITY MAP
NOT TO SCALE

GENERAL NOTES:

- OWNER/DEVELOPER: DUMBARTON AREA 2, LLC
500 LA GONDA WAY, SUITE 102
DANVILLE, CA 94526
CONTACT: GLENN BROWN
(925) 362-3749
- ENGINEER: CARLSON, BARBEE & GIBSON, INC.
5007 SINCE BOULEVARD
PLEASANTON, CA 94566
CONTACT: GREG MILLER
(925) 866-0322
- SOILS ENGINEER: BERLOGAR, STEVENS & ASSOCIATES
5007 SINCE BOULEVARD
PLEASANTON, CA 94566
CONTACT: FRANK BERLOGAR
(925) 484-0220
(925) 846-9645 (FAX)
- EXISTING USE: LIGHT INDUSTRIAL
- SUBDIVISION AREA DEVELOPEABLE AREA: 54.534
41.024
- NUMBER OF UNITS: 589 UNITS
- THIS PROPERTY LIES IN THE JURISDICTION OF:
 - FIRE PROTECTION: CITY OF NEWARK FIRE PROTECTION DISTRICT
 - DOMESTIC WATER: ALAMEDA COUNTY COUNTY WATER DISTRICT
 - SANITARY SEWER: UNION SANITARY DISTRICT
 - STORM DRAIN WITHIN STREETS, LANES & PASEOS: CITY OF NEWARK (SDE)
 - STORM DRAIN WITHIN PRIVATE YARDS: PRIVATELY MAINTAINED BY HOMEOWNERS (PSDE)
 - GAS & ELECTRIC SERVICE: PACIFIC GAS & ELECTRIC
 - TELEPHONE SERVICE: AT&T
- ROADWAYS AND PARCELS: UNLESS OTHERWISE NOTED (I.E. PUBLIC) ALL ROADWAYS AND PARCELS ARE TO BE MAINTAINED BY THE HOA ESTABLISHED WITH THE PROJECT. PUBLIC ACCESS EASEMENTS WILL BE DEDICATED OVER PARCEL E FOR PUBLIC USE.
- PROPOSED LAND USE SUMMARY: SEE TABLE (THIS SHEET)
- ASSESSORS PARCEL NUMBERS: 537-0852-009
537-0852-010
537-0852-011
- BENCHMARK: CITY OF NEWARK OFFICIAL BENCHMARK NO. 62, ALSO BEING AN ALAMEDA COUNTY BENCHMARK, THE TOP OF CURB AT STORM WATER INLET AT THE NORTH-EAST CORNER OF THORNTON AVENUE AT WILLOW STREET, ELEVATION TAKEN AS 11.39 (NAVD 88) (8.661 NAVD 29 PER CITY OF NEWARK RECORDS).
- TOPOGRAPHY: PREPARED BY HAW GEOSPATIAL, INC. DATED MAY 2005
- FLOOD ZONE: ZONED X AND AE
FLOOD INSURANCE RATE MAP (FIRM)
COMMUNITY PANEL NUMBER: 60009 0443 G
- THIS PROJECT MAY BE BUILT IN PHASES AND MULTIPLE FINAL MAPS MAY BE FILED. A PHASING PLAN WILL BE PROVIDED TO THE CITY OF NEWARK PRIOR TO FINAL MAP APPROVAL.
- LOTS 1 - 321 WILL BE RESIDENTIAL LOTS
LOTS 322 - 361 (UNITS 322-589) WILL BE CONDOMINIUM UNITS.
- LOT DIMENSIONS AND AREAS ARE APPROXIMATE AND ARE ROUNDED TO THE NEAREST WHOLE NUMBER. EXACT DIMENSIONS AND AREAS WILL BE PROVIDED ON THE FINAL MAP.
- ALL BUILDINGS SHALL BE EQUIPPED WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 15.09.020.G OF THE NEWARK MUNICIPAL CODE.
- GRADING SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL DESIGN.
- ALL UTILITIES SHOWN ARE TO BE USED AS A GUIDE AND MAY CHANGE DURING FINAL DESIGN.
- GENERAL PLAN DESIGNATION: CONSERVATION/OPEN SPACE (PORTION), LOW-MEDIUM DENSITY RESIDENTIAL (PORTION), MEDIUM DENSITY RESIDENTIAL (PORTION), HIGH DENSITY RESIDENTIAL (PORTION), SALT HARVESTING, REFINING & PRODUCTION (PORTION).
- ZONING: EXISTING: M1-H HIGH TECHNOLOGY PARK DISTRICT
PROPOSED: DUMBARTON FORM BASED CODE

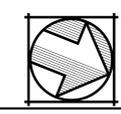
SHEET INDEX

- TM-1 TITLE SHEET AND SITE PLAN
- TM-2 PRELIMINARY LOTTING PLAN
- TM-3 PRELIMINARY GRADING AND DRAINAGE PLAN
- TM-4 PRELIMINARY UTILITY PLAN AND STREET SECTIONS
- TM-5 PRELIMINARY STORMWATER CONTROL PLAN
- TM-6 FIRE ACCESS PLAN
- TM-7 FIRE ACCESS PLAN
- TM-8 TEMPORARY ACCESS PLAN

TITLE SHEET AND SITE PLAN
VESTING TENTATIVE MAP
TRACT 8099
GATEWAY STATION WEST

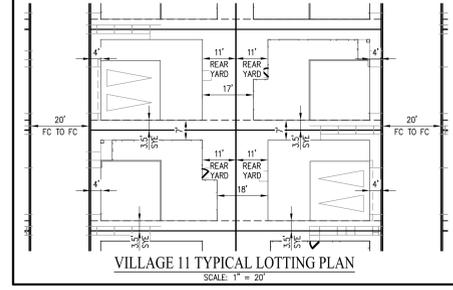
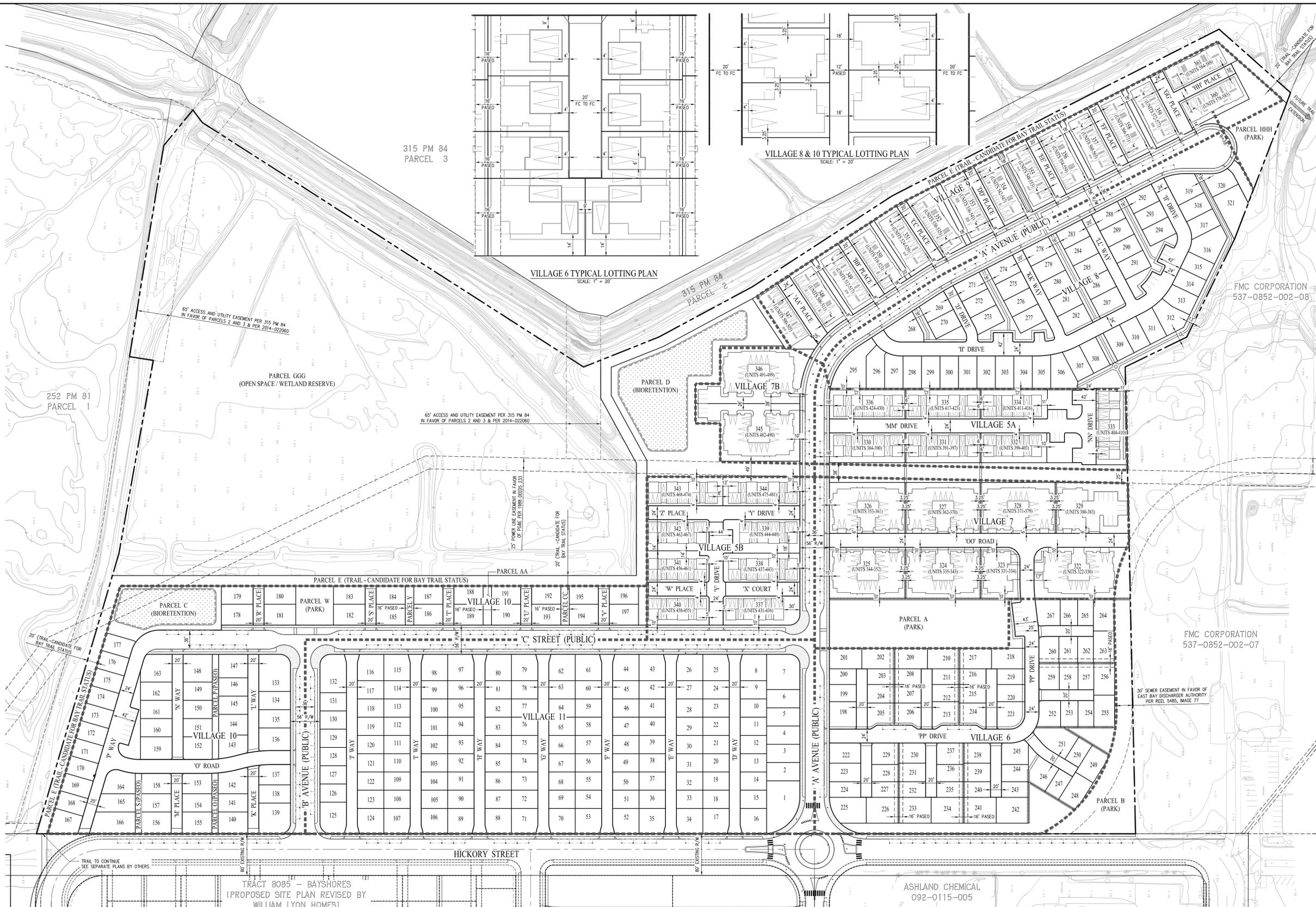
CITY OF NEWARK ALAMEDA COUNTY CALIFORNIA

Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS - SURVEYORS - PLANNERS
2633 CANNON RAVEN, SUITE 300
SAN RAMON, CALIFORNIA 94583 (925) 866-0322
www.cbgi.com



SCALE: 1" = 60'
DATE: JUNE 3, 2015

SHEET NO.
TM-1
OF 8 SHEETS



PARKING SUMMARY

PARKING REQUIRED:
OFF-STREET COVERED SPACES PER UNIT (2 PER UNIT) = (321x2)+(288x2) = 1,178 SPACES
GUEST SPACES = 20% OF MULTI-FAMILY UNITS + 1 = (288/100)x20+1 = 1,233 SPACES
TOTAL PARKING REQUIRED = 1,233 SPACES

PARKING PROVIDED:
OFF-STREET COVERED SPACES (589x2) = 1,178 SPACES
GUEST ON-SITE PARALLEL SPACES (N-TRACT) = 152 SPACES
OFF-SITE PARALLEL SPACES (HICKORY STREET) = 53 SPACES
ON-SITE 90 DEGREE SPACES (N-TRACT) = 54 SPACES
ON-SITE ACCESSIBLE SPACES (N-TRACT) = 12 SPACES
TOTAL GUEST PARKING = 271 SPACES
TOTAL PARKING PROVIDED = 1,449 SPACES

(*17.60.090A.2.C OF NEWARK MUNICIPAL CODE REQUIRES 20% +1)

NOTE:
PARKING SPACES ARE SHOWN ON SHEET TM

LAND USE SUMMARY

LAND USE	AREA (AC)
SINGLE FAMILY LOTS	15.29
MULTI FAMILY LOTS	8.31
PUBLIC STREETS	4.47
PRIVATE STREETS & ALLEYS	5.78
PARKS	2.24
PASEOS/OPEN SPACE	1.64
TRAIL	1.58
WATER QUALITY	1.67
OPEN SPACE	13.55
TOTAL PROJECT AREA	54.53

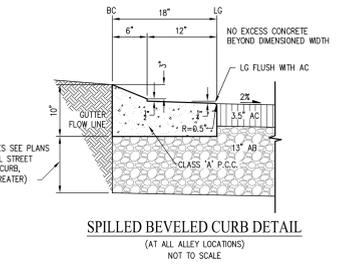
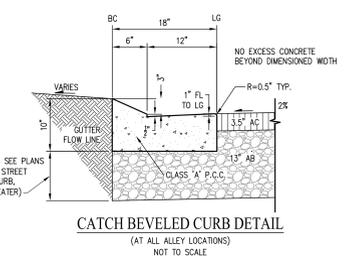
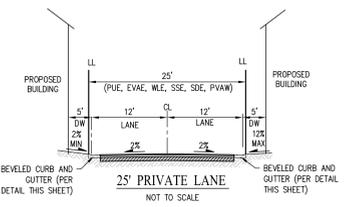
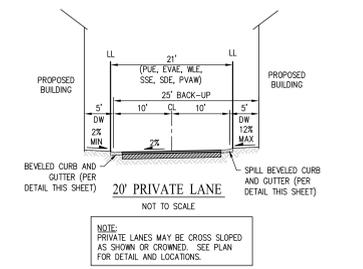
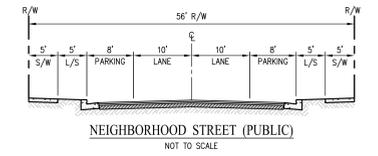
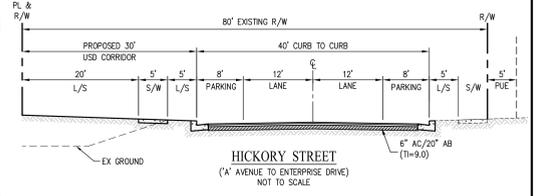
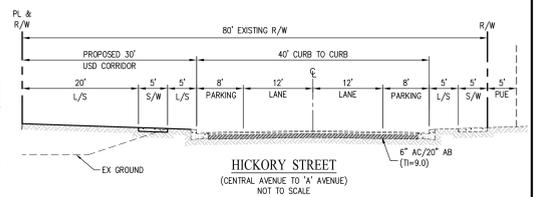
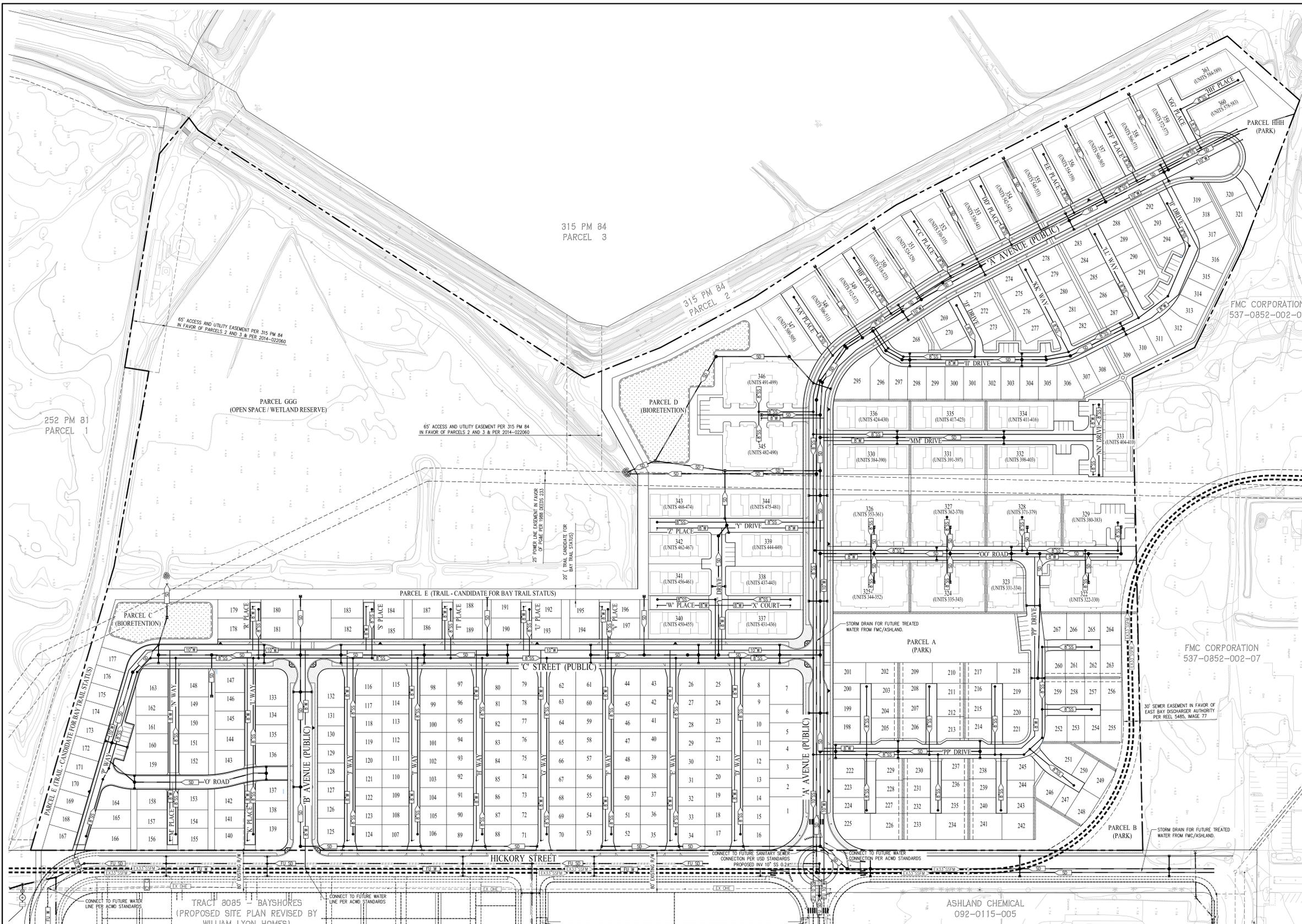
UNIT SUMMARY

VILLAGE	NUMBER OF UNITS
VILLAGE 5A & 5B - UA LOFT SPLIT	58
VILLAGE 6 - UA SFD CLUSTER	70
VILLAGE 7A & 7B - UA P9	80
VILLAGE 8 - 35 x 55 UA ALLEY	54
VILLAGE 9 - UA PLATS	90
VILLAGE 10 - 35 x 55 UA ALLEY	65
VILLAGE 11 - 35 x 55 UA FRONT	132
TOTAL	589

MINIMUM BUILDING SETBACKS

LOT SIZE	REQUIRED SINGLE FAMILY DETACHED (ALLEY LOADED)	
	REQUIRED SINGLE FAMILY DETACHED (ALLEY LOADED)	ATTACHED (ALLEY LOADED)
WIDTH, FT	30-60	15-35
DEPTH, FT	50-150	50-90
SETBACKS		
FRONT		
PORCH/STOOPS, FT	6	6
BUILDING FACE, FT	8	8
REAR		
MAIN BUILDING, FT	10	10
GARAGE, FT (2)	4	4
SIDE		
MAIN BUILDING, FT	3.25	3.25
MAIN BUILDING AT CORNERS, FT (4)	8.25/5	8.25/5
PORCH/STOOPS AT CORNERS, FT	6	6
GARAGE, FT	3.25	3.25
GARAGE AT CORNERS, FT (4)	8.25/5	8.25/5
MAXIMUM SITE COVERAGE, % (NOT INCLUDING PORCHES) (3)	60	85

- NOTES:
- REQUIRED SETBACKS AREA BASED ON THE TABLE IN SECTION 17.37.080 UNLESS OTHERWISE NOTED.
 - FOR ALL ALLEY-LOADED HOMES, THE SETBACK MAY BE REDUCED TO FOUR FEET TO THE GARAGE DOOR.
 - FRONT SETBACK AND SITE COVERAGE MEASURED TO THE CENTERLINE OF TRAIL AND CENTERLINE OF PASEO PER SECTION 17.37.080 F.
 - SIDE STREET SETBACK OF 5 FEET PER SECTION 17.37.060 D AND 17.37.080 H.

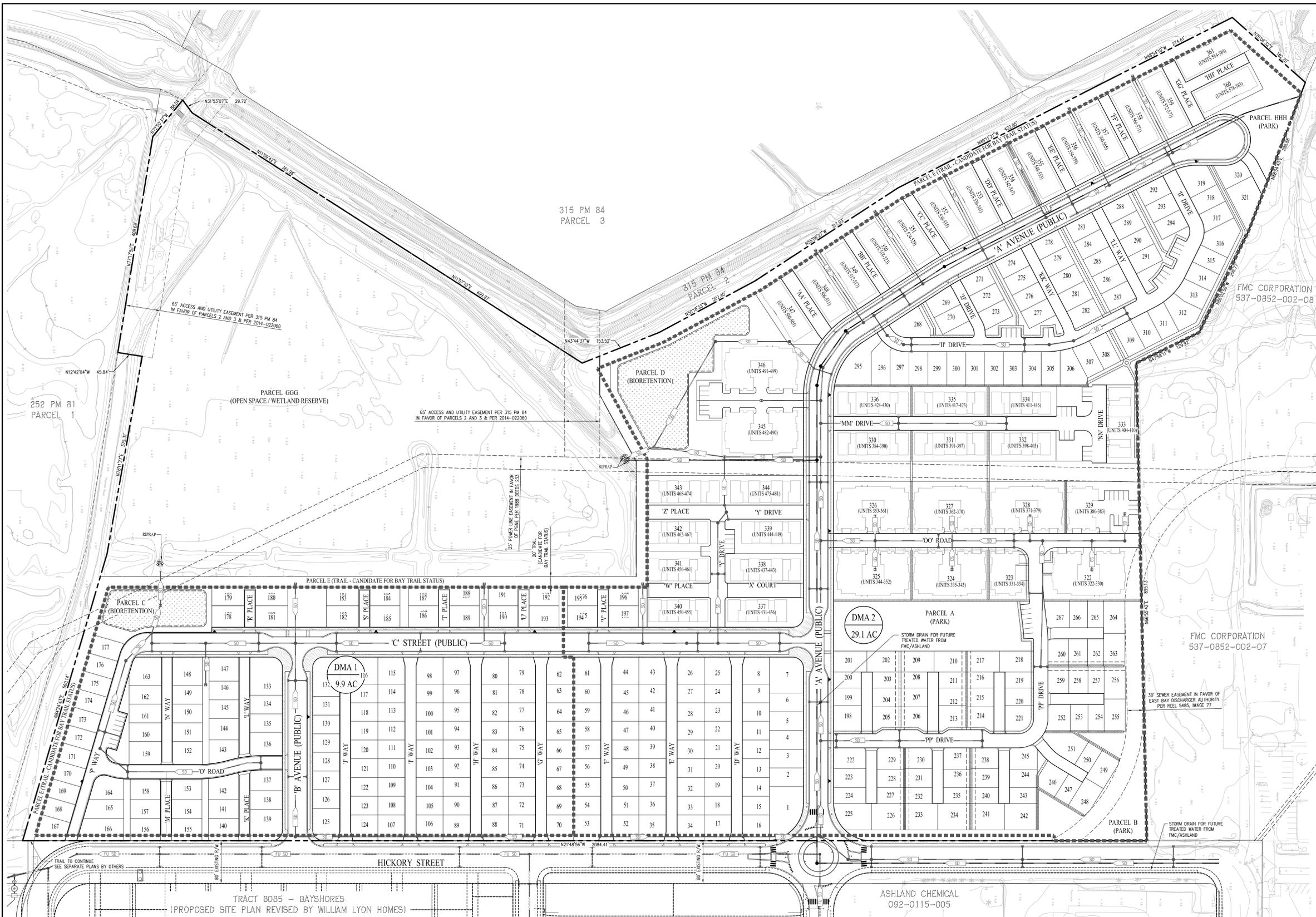


TRACT 8085 - BAYSHORES
(PROPOSED SITE PLAN REVISED BY
WILLIAM LYON, HOMES).

ASHLAND CHEMICAL
092-0115-005

FMC CORPORATION
537-0852-002-07

PRELIMINARY UTILITY PLAN AND STREET SECTIONS
VESTING TENTATIVE MAP
TRACT 8099
GATEWAY STATION WEST



LEGEND

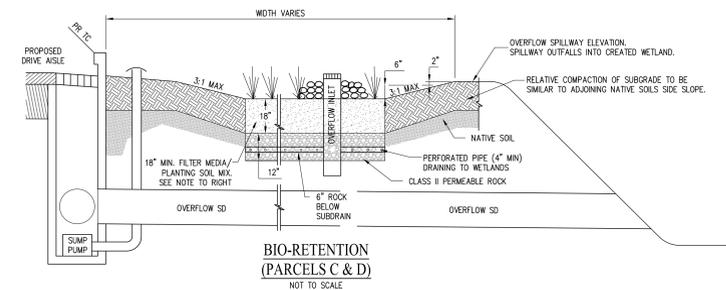
- FIELD INLET
- DIRECTION OF FLOW
- STORM DRAIN
- BIORETENTION AREA
- DMA 1
- DRAINAGE MANAGEMENT AREA BOUNDARY

DRAINAGE MANAGEMENT SUMMARY TABLE

DRAINAGE MANAGEMENT AREA	TOTAL AREA (SF)	TOTAL IMPERVIOUS AREA (SF)	TOTAL PERVIOUS AREA (SF)	SIZING METHOD	BIORETENTION TREATMENT AREA (SF)
DMA 1	431,244	285,957	145,287	FLOW (4% METHOD)	11,438
DMA 2	1,267,596	762,421	505,175	FLOW (4% METHOD)	30,497
TOTAL	1,698,840	1,048,378	650,462		41,935

DMA 1
9.9 AC

DMA 2
29.1 AC



- STORMWATER CONTROL PLAN NOTES:**
- SOL USED IN LANDSCAPE BASED TREATMENT MEASURES SHALL MEET THE SOL SPECIFICATIONS INCLUDED IN THE MOST RECENT VERSION OF THE MUNICIPAL REGIONAL STORMWATER WIDES PERMIT ATTACHMENT L. PROVIDE A SOL CERTIFICATE OF COMPLIANCE AND LAB TESTING RESULTS TO THE CITY OF NEWARK ENGINEERING DIVISION TO VERIFY THAT THE SOL USED IN LANDSCAPE BASED TREATMENT MEASURES MEETS THE SPECIFICATIONS.
 - PRIOR TO BUILDING OCCUPANCY OR ACCEPTANCE OF IMPROVEMENTS, THE PROJECT CIVIL ENGINEER OR LANDSCAPE ARCHITECT MUST SUBMIT A STATEMENT CERTIFYING THAT ALL POST-CONSTRUCTION STORMWATER TREATMENT MEASURES HAVE BEEN INSTALLED PROPERLY.
 - THE CITY OF NEWARK MUST INSPECT AND APPROVE ALL STORMWATER TREATMENT MEASURES PRIOR TO GRANTING CERTIFICATE OF OCCUPANCY. THEREAFTER, CITY STAFF MUST CONDUCT INSPECTIONS AS FREQUENTLY AS ANNUALLY TO VERIFY MAINTENANCE.

**PRELIMINARY STORMWATER CONTROL PLAN
VESTING TENTATIVE MAP
TRACT 8099
GATEWAY STATION WEST**

CITY OF NEWARK ALAMEDA COUNTY CALIFORNIA

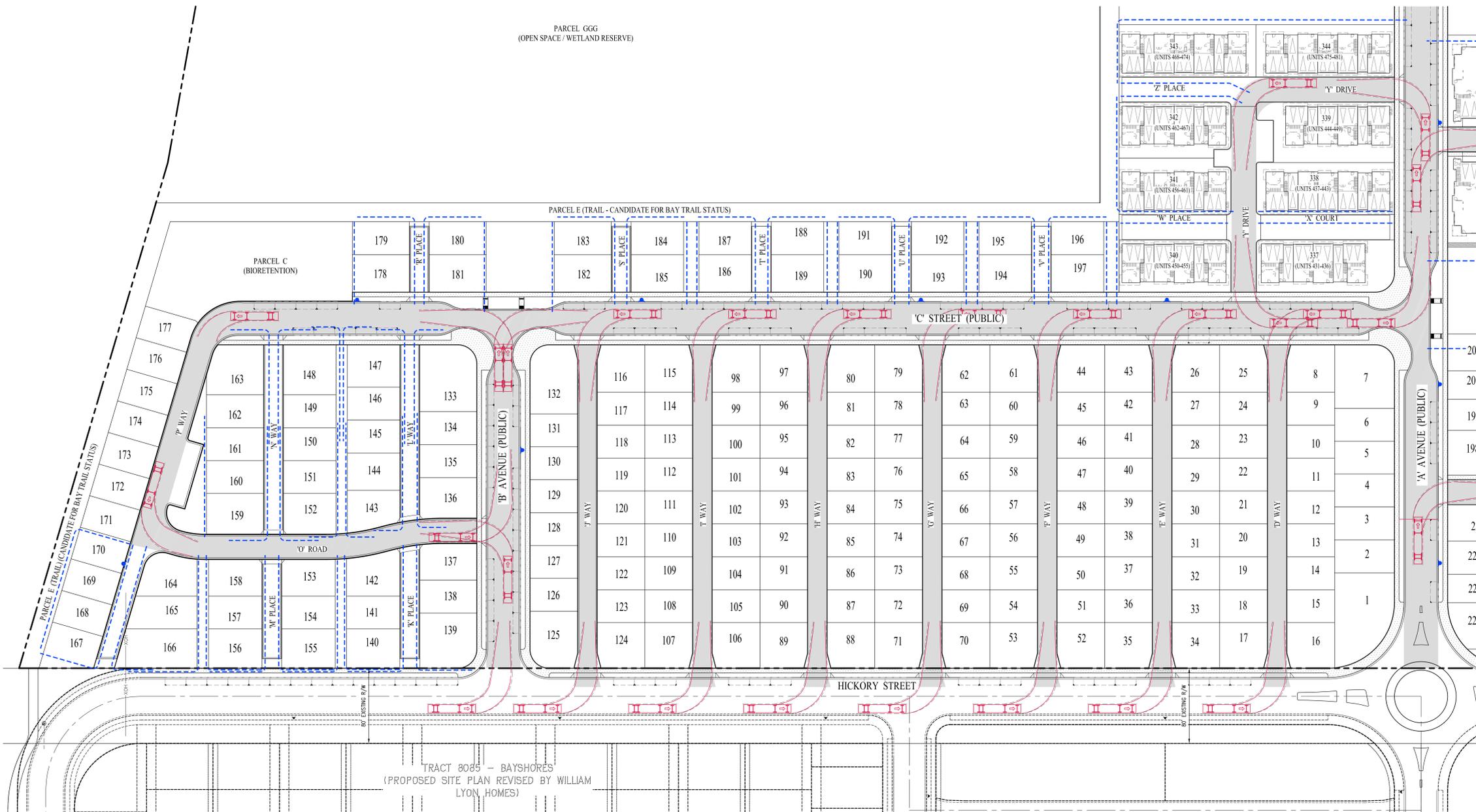
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SHEET NO. **TM-5**
OF 8 SHEETS

SCALE: 1" = 60'

DATE: JUNE 3, 2015



LEGEND

- ALAMEDA COUNTY FIRE TRUCK TURN TEMPLATE FOR THE CITY OF NEWARK
- PROPOSED FIRE HYDRANT
- TYPICAL HOSE PULL FROM FIRE APPARATUS ACCESS ROAD
- FIRE APPARATUS ACCESS ROAD

200'

FIRE ACCESS PLAN
VESTING TENTATIVE MAP
TRACT 8099
GATEWAY STATION WEST

CITY OF NEWARK ALAMEDA COUNTY CALIFORNIA

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CIVIL ENGINEERS - SURVEYORS - PLANNERS

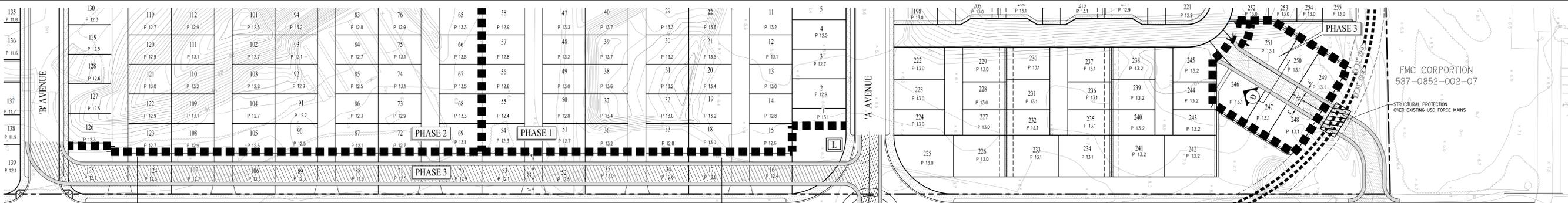
2033 CARRINO RAMON, SUITE 300
SAN RAMON, CALIFORNIA 94583

0001 866-0322
www.cbgi.com

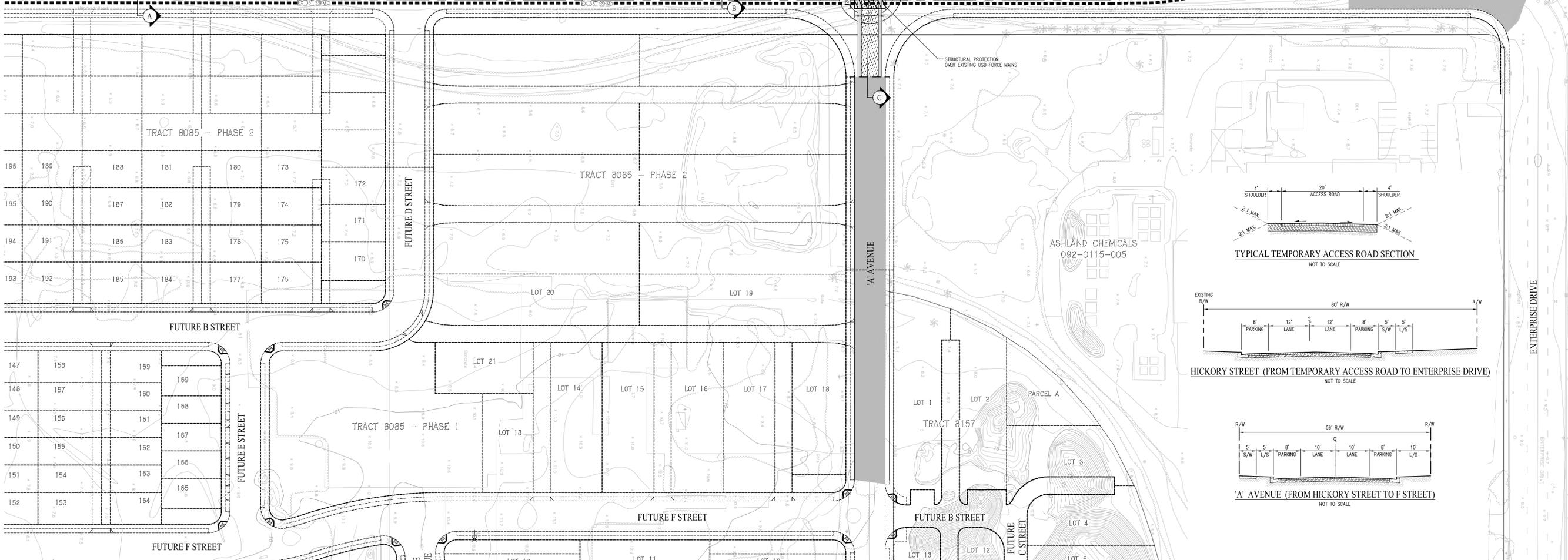
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DATE: JUNE 3, 2015

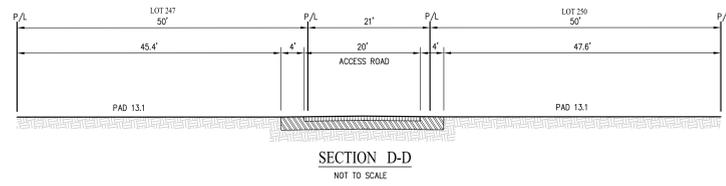
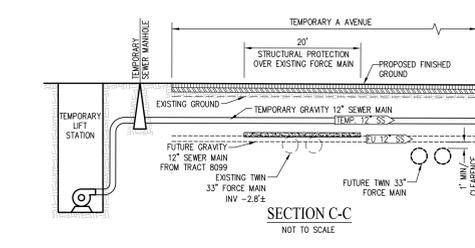
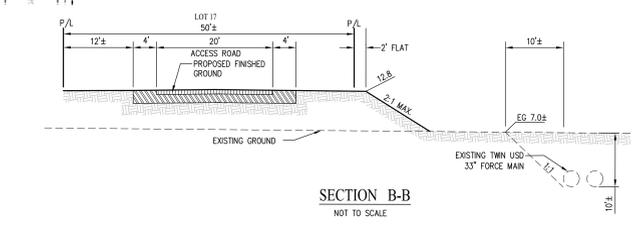
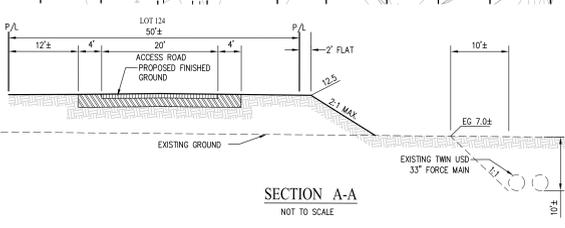
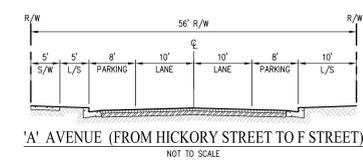
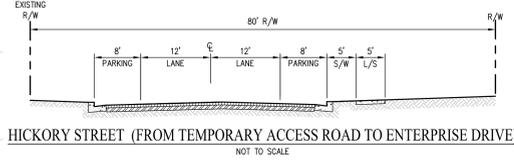
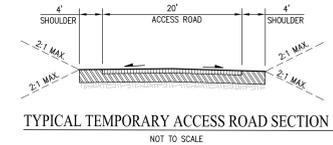
SHEET NO. TM-6 OF 8 SHEETS



FMC CORPORATION
537-0852-002-07



ASHLAND CHEMICALS
092-0115-005

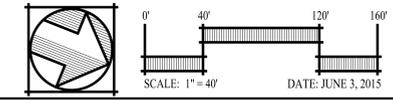
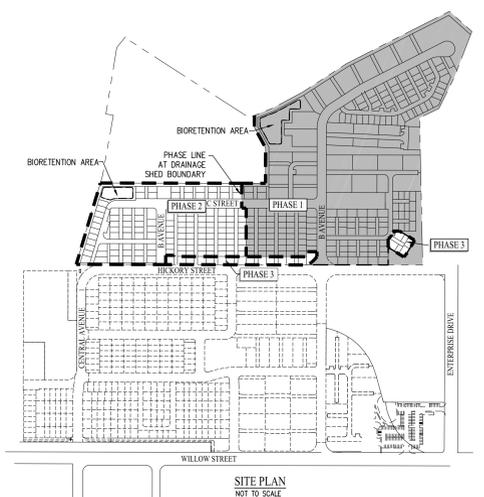


- NOTES:
1. PHASE 1 INCLUDES TWO POINTS OF ACCESS, THE TEMPORARY ACCESS ROAD AND A AVENUE.
 2. TEMPORARY HICKORY STREET WILL BE CONSTRUCTED WITH PHASE 2.
 3. THE PHASE 1 AND PHASE 2 BOUNDARY DELINEATION IS BASED ON THE SITES DRAINAGE SHED BOUNDARY.

LEGEND

- TEMPORARY ACCESS ROAD (THROUGH FUTURE ALLEY)
- TEMPORARY A AVENUE
- PERMANENT A AVENUE & PERMANENT HICKORY STREET
- TEMPORARY ACCESS ROAD (ADJACENT TO FUTURE HICKORY STREET)
- PHASE BOUNDARY
- TEMPORARY LIFT STATION

UNIT COUNT	
PHASE 1	451 UNITS
PHASE 2	132 UNITS
PHASE 3	6 UNITS
TOTAL	589 UNITS



**TEMPORARY ACCESS PLAN
VESTING TENTATIVE MAP
TRACT 8099
GATEWAY STATION WEST**

CITY OF NEWARK ALAMEDA COUNTY CALIFORNIA

cbg Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS - SURVEYORS - PLANNERS
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SAN RAMON, CALIFORNIA 94583

SHEET NO.
TM-8
OF 8 SHEETS

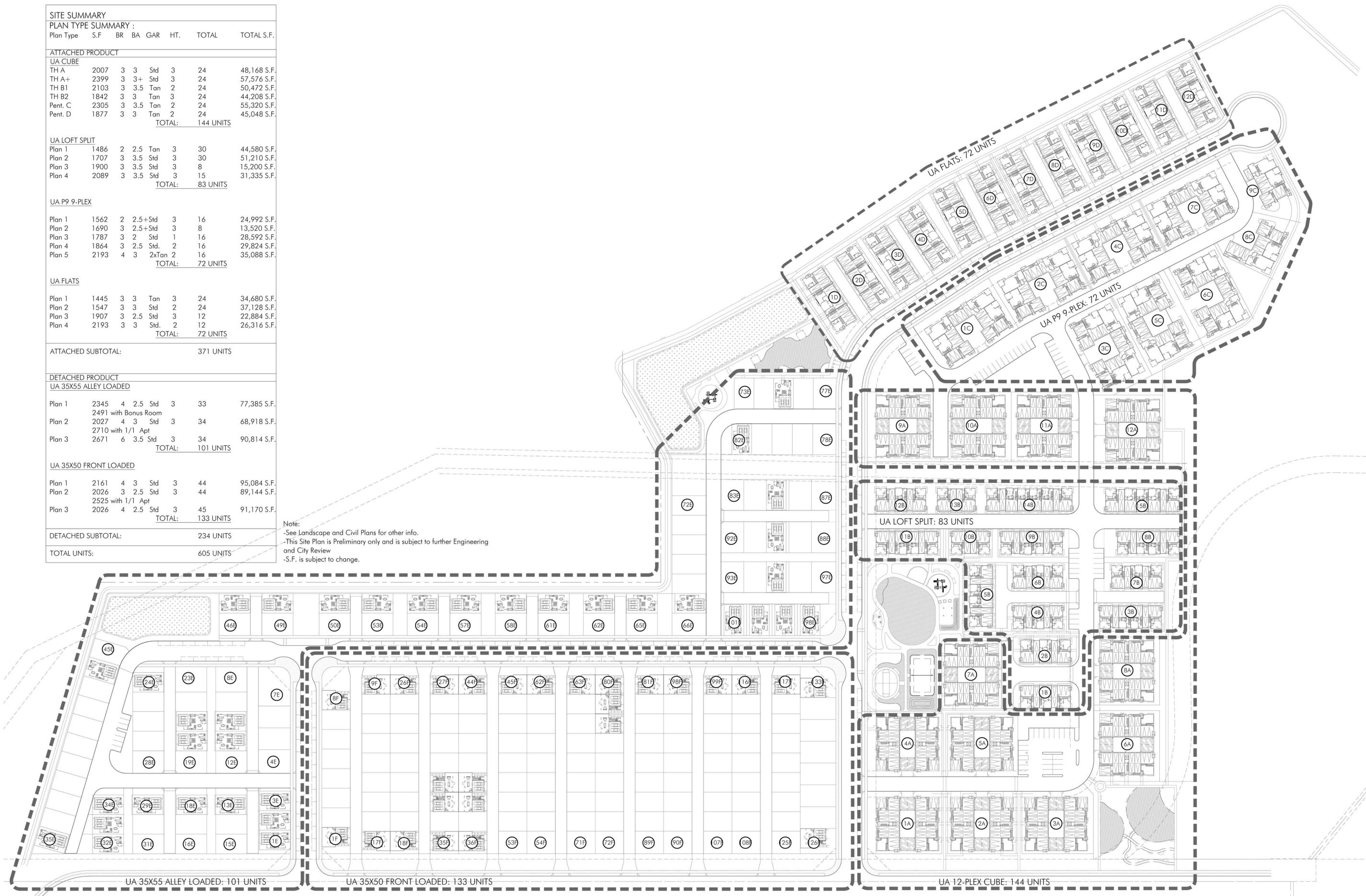
DATE: JUNE 3, 2015

03/08-45/CAC/15/06/02



SITE SUMMARY							
PLAN TYPE SUMMARY :							
Plan Type	S.F	BR	BA	GAR	HT.	TOTAL	TOTAL S.F.
ATTACHED PRODUCT							
UA CUBE							
TH A	2007	3	3	Std	3	24	48,168 S.F.
TH A+	2399	3	3+	Std	3	24	57,576 S.F.
TH B1	2103	3	3.5	Tan	2	24	50,472 S.F.
TH B2	1842	3	3	Tan	3	24	44,208 S.F.
Pent. C	2305	3	3.5	Tan	2	24	55,320 S.F.
Pent. D	1877	3	3	Tan	2	24	45,048 S.F.
TOTAL:						144 UNITS	
UA LOFT SPLIT							
Plan 1	1486	2	2.5	Tan	3	30	44,580 S.F.
Plan 2	1707	3	3.5	Std	3	30	51,210 S.F.
Plan 3	1900	3	3.5	Std	3	8	15,200 S.F.
Plan 4	2089	3	3.5	Std	3	15	31,335 S.F.
TOTAL:						83 UNITS	
UA P9 9-PLEX							
Plan 1	1562	2	2.5+Std	3	16	24,992 S.F.	
Plan 2	1690	3	2.5+Std	3	8	13,520 S.F.	
Plan 3	1787	3	2	Std	1	16	28,592 S.F.
Plan 4	1864	3	2.5	Std.	2	16	29,824 S.F.
Plan 5	2193	4	3	2xTan	2	16	35,088 S.F.
TOTAL:						72 UNITS	
UA FLATS							
Plan 1	1445	3	3	Tan	3	24	34,680 S.F.
Plan 2	1547	3	3	Std	2	24	37,128 S.F.
Plan 3	1907	3	2.5	Std	3	12	22,884 S.F.
Plan 4	2193	3	3	Std.	2	12	26,316 S.F.
TOTAL:						72 UNITS	
ATTACHED SUBTOTAL:						371 UNITS	
DETACHED PRODUCT							
UA 35X55 ALLEY LOADED							
Plan 1	2345	4	2.5	Std	3	33	77,385 S.F.
Plan 2	2491 with Bonus Room	4	3	Std	3	34	68,918 S.F.
Plan 3	2027	4	3	Std	3	34	90,814 S.F.
Plan 3	2710 with 1/1 Apt	6	3.5	Std	3	34	90,814 S.F.
TOTAL:						101 UNITS	
UA 35X50 FRONT LOADED							
Plan 1	2161	4	3	Std	3	44	95,084 S.F.
Plan 2	2026	3	2.5	Std	3	44	89,144 S.F.
Plan 3	2525 with 1/1 Apt	4	2.5	Std	3	45	91,170 S.F.
Plan 3	2026	4	2.5	Std	3	45	91,170 S.F.
TOTAL:						133 UNITS	
DETACHED SUBTOTAL:						234 UNITS	
TOTAL UNITS:						605 UNITS	

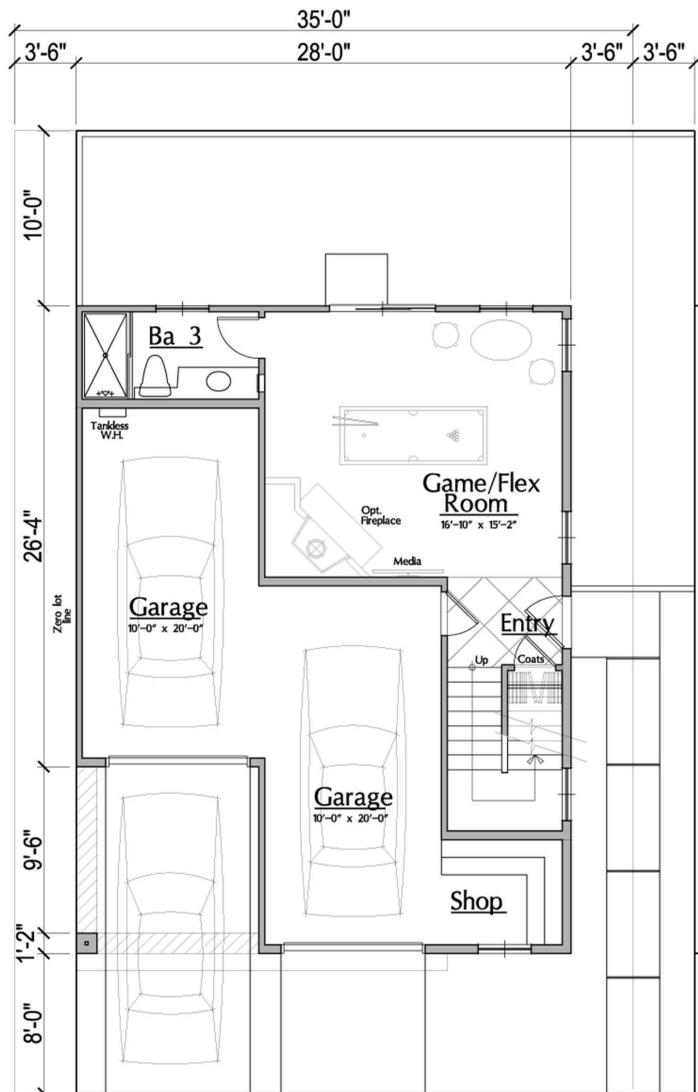
Note:
 -See Landscape and Civil Plans for other info.
 -This Site Plan is Preliminary only and is subject to further Engineering and City Review
 -S.F. is subject to change.



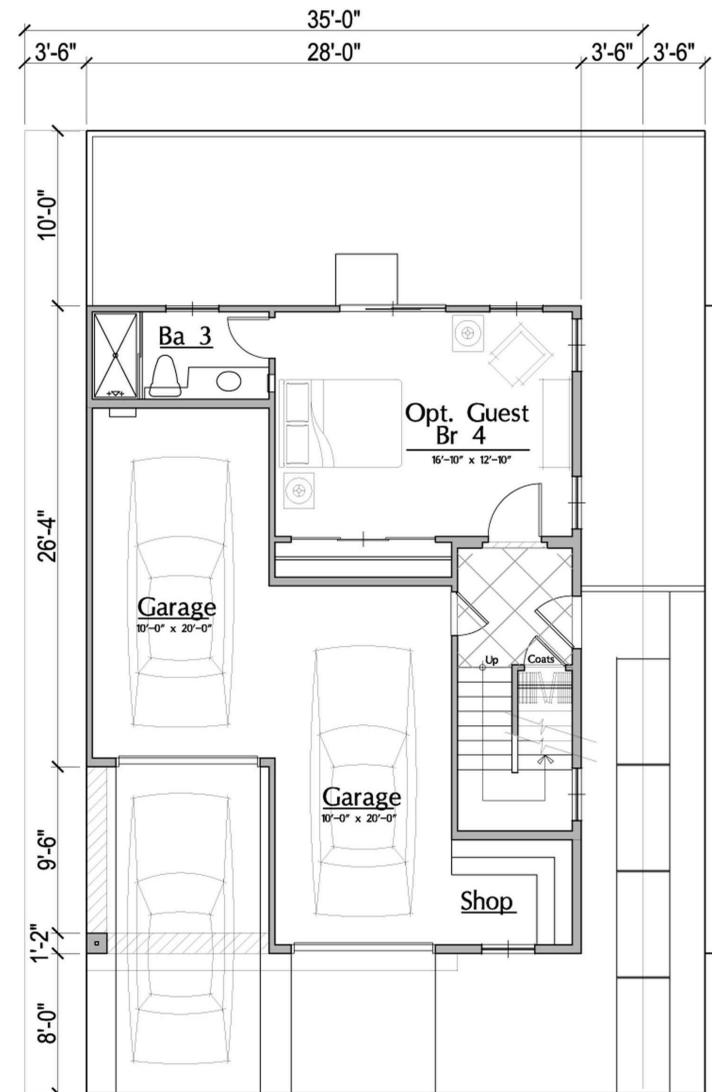
UA 35X55 ALLEY LOADED: 101 UNITS

UA 35X50 FRONT LOADED: 133 UNITS

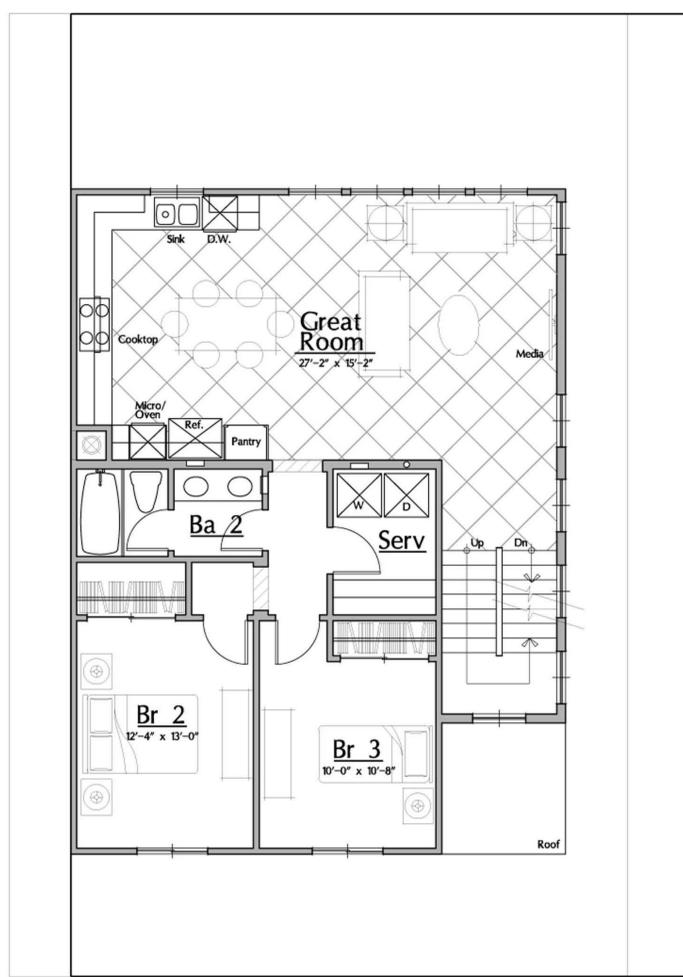
UA 12-PLEX CUBE: 144 UNITS



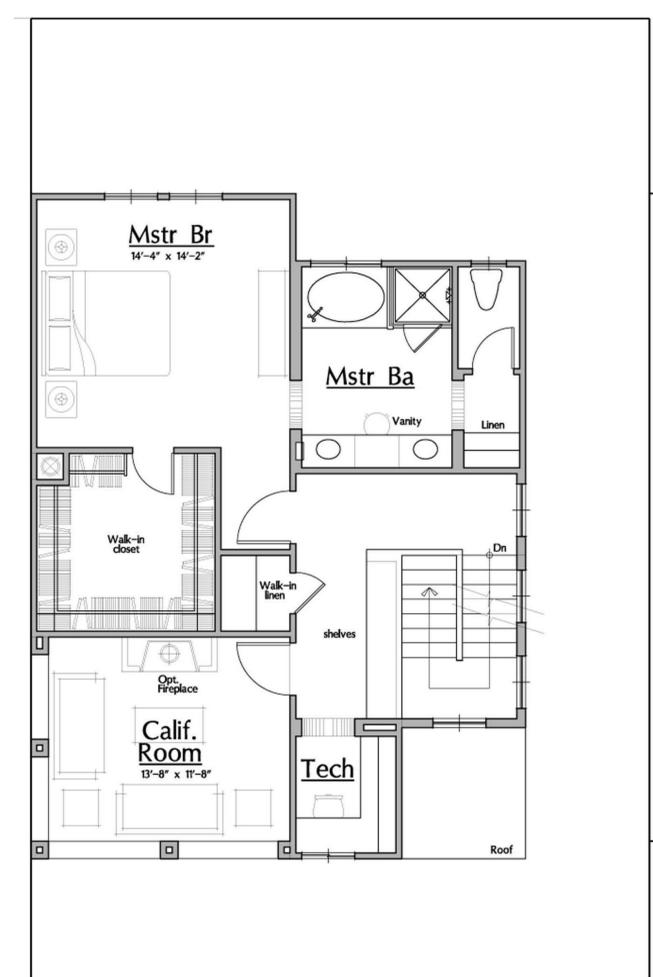
FIRST LEVEL SCALE: 1/4" = 1'-0"



FIRST LEVEL (OPTIONAL) SCALE: 1/4" = 1'-0"

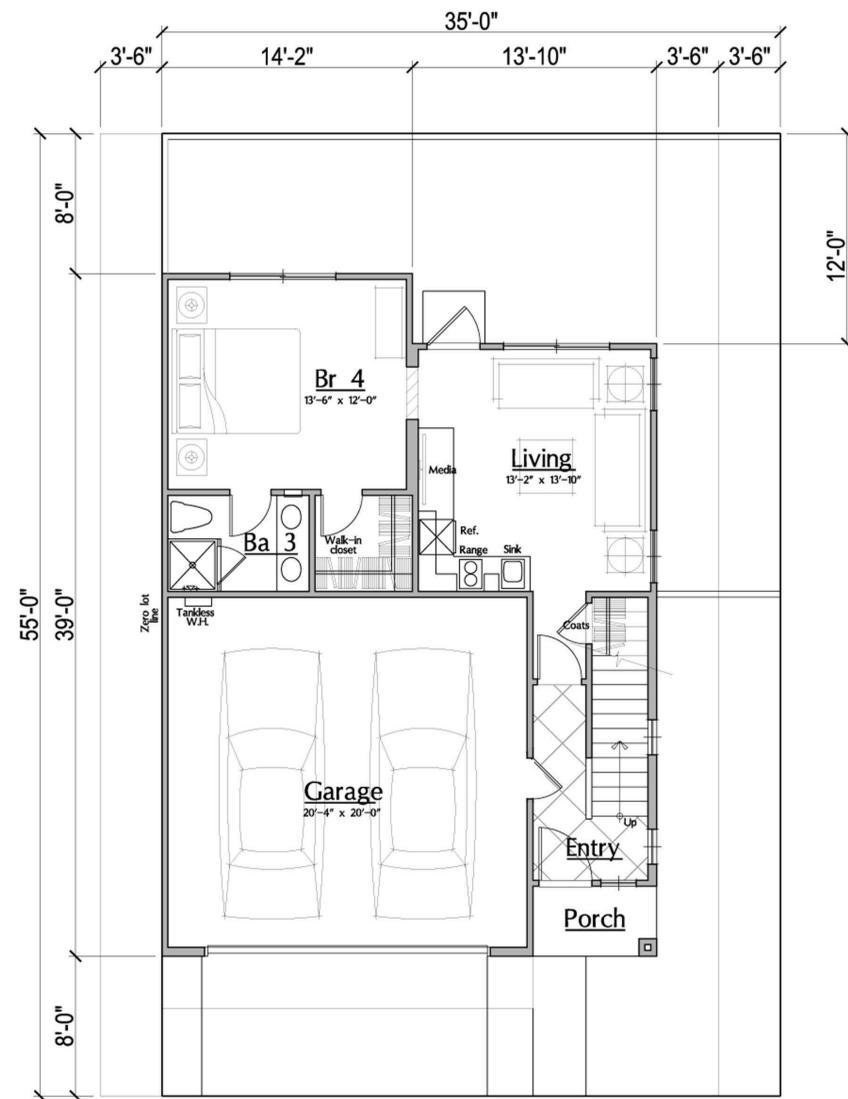


SECOND LEVEL SCALE: 1/4" = 1'-0"



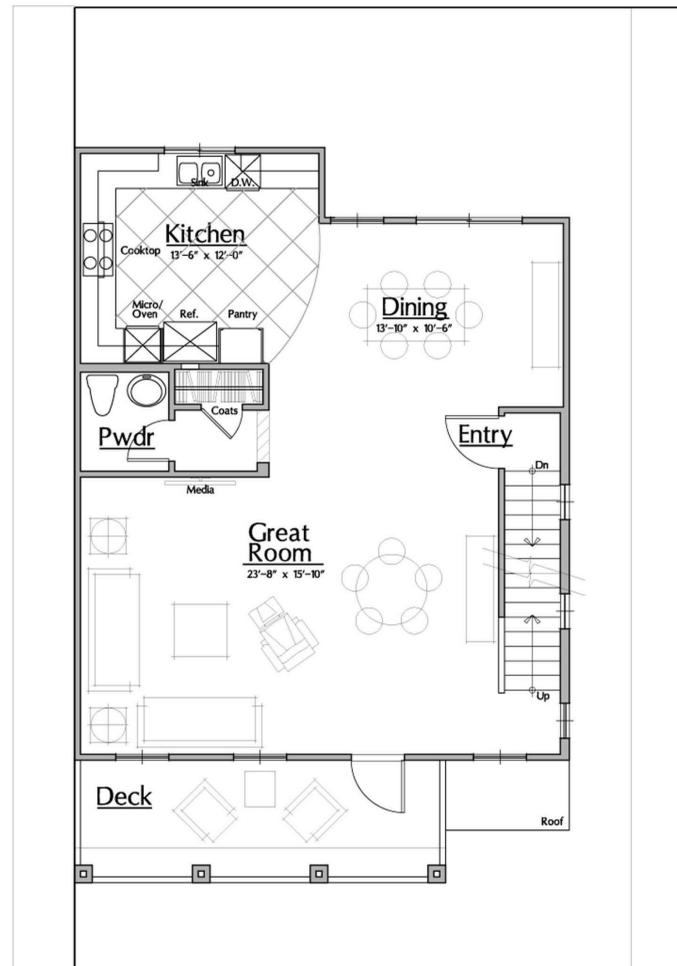
THIRD LEVEL SCALE: 1/4" = 1'-0"

UNIT SUMMARY - PLAN 1
 PLAN 1: 2,161 S.F.
 (OPTIONAL FIRST FLOOR)



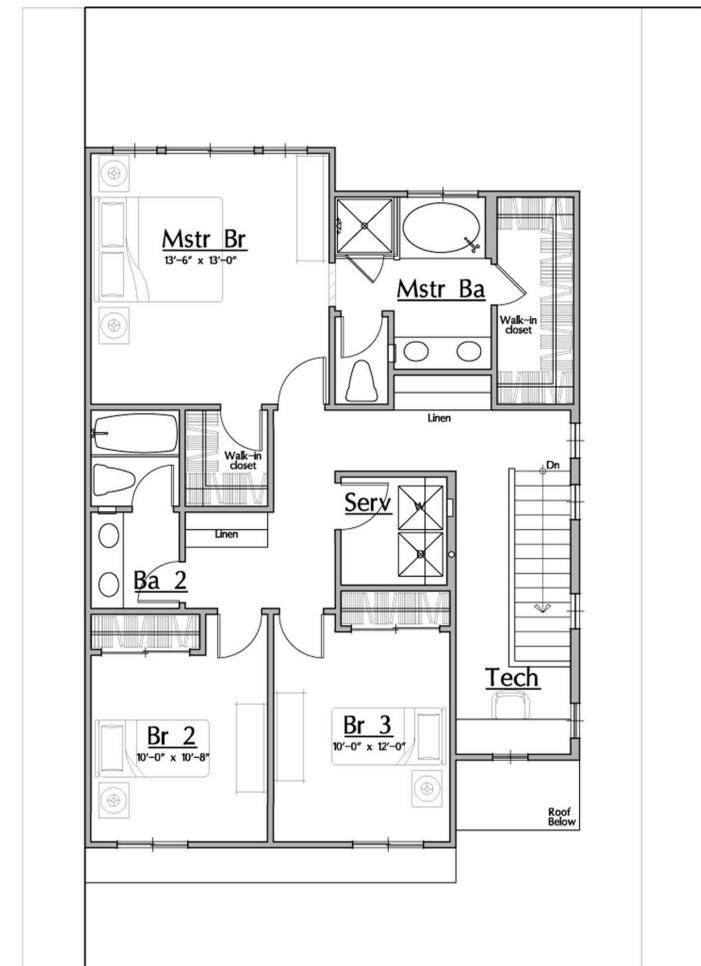
FIRST LEVEL

SCALE: 1/4" = 1'-0"



SECOND LEVEL

SCALE: 1/4" = 1'-0"

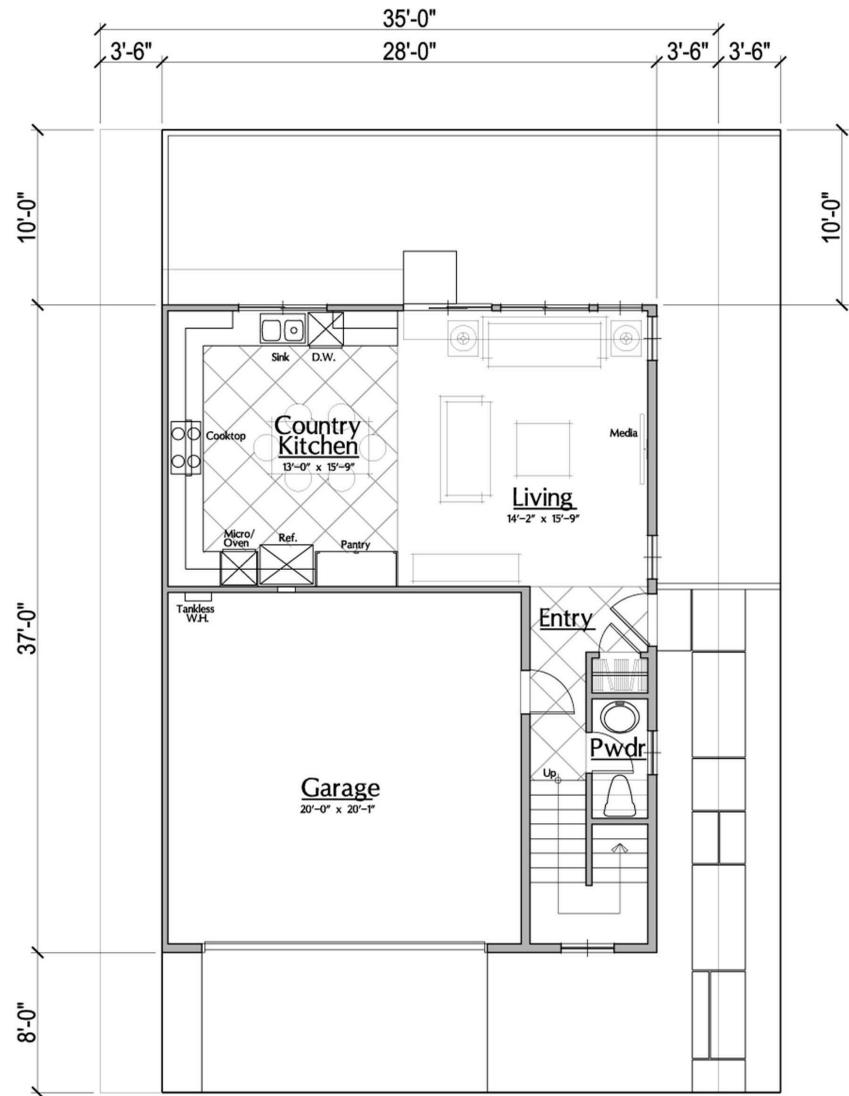


THIRD LEVEL

SCALE: 1/4" = 1'-0"

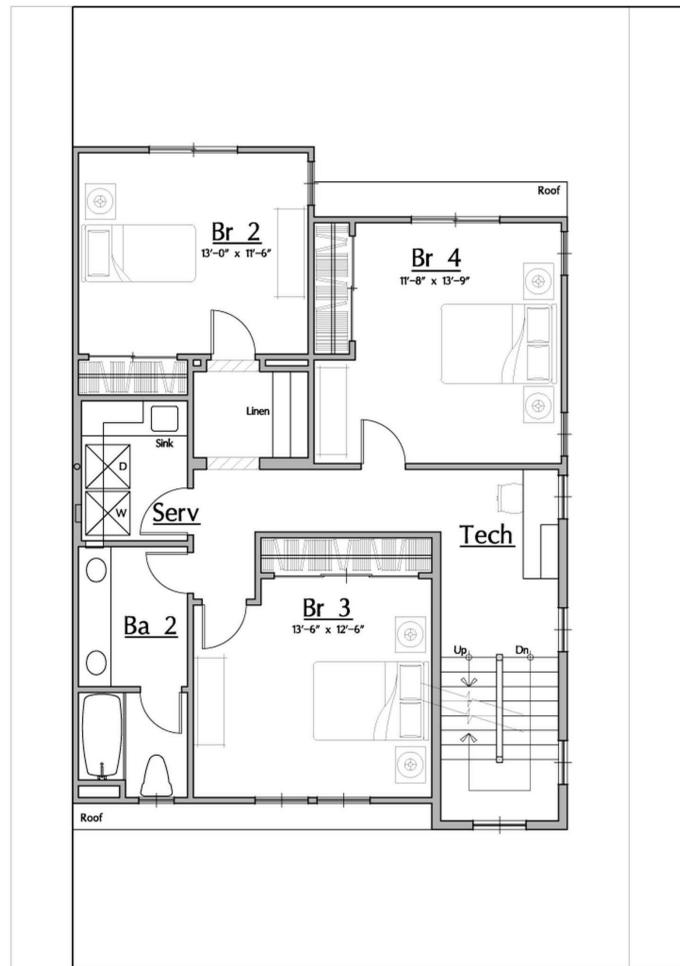
UNIT SUMMARY - PLAN 2

PLAN 2 MAIN HOUSE: 2,026 S.F.
 APARTMENT SUITE: 499 S.F.
 TOTAL WITH APT: 2,525 S.F.



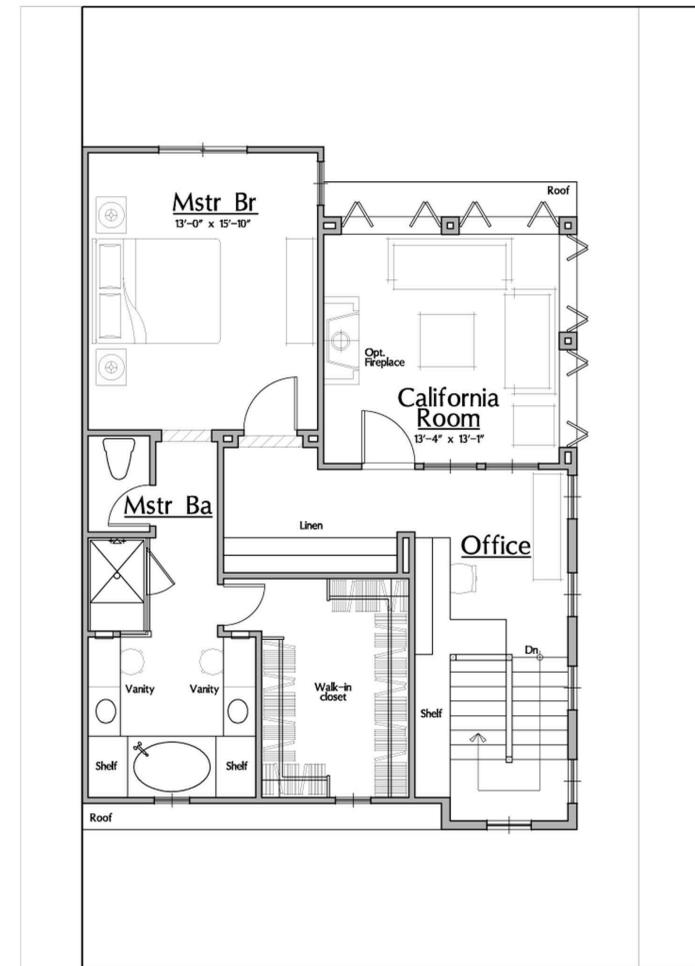
FIRST LEVEL

SCALE: 1/4" = 1'-0"



SECOND LEVEL

SCALE: 1/4" = 1'-0"



THIRD LEVEL

SCALE: 1/4" = 1'-0"

UNIT SUMMARY - PLAN 3

PLAN 3 TOAL HOUSE: 2,026 S.F.

CALIFORNIA ROOM: 202 S.F.



FRONT ELEVATION AGRARIAN
PLAN 1

SCALE: 1/4" = 1'-0"



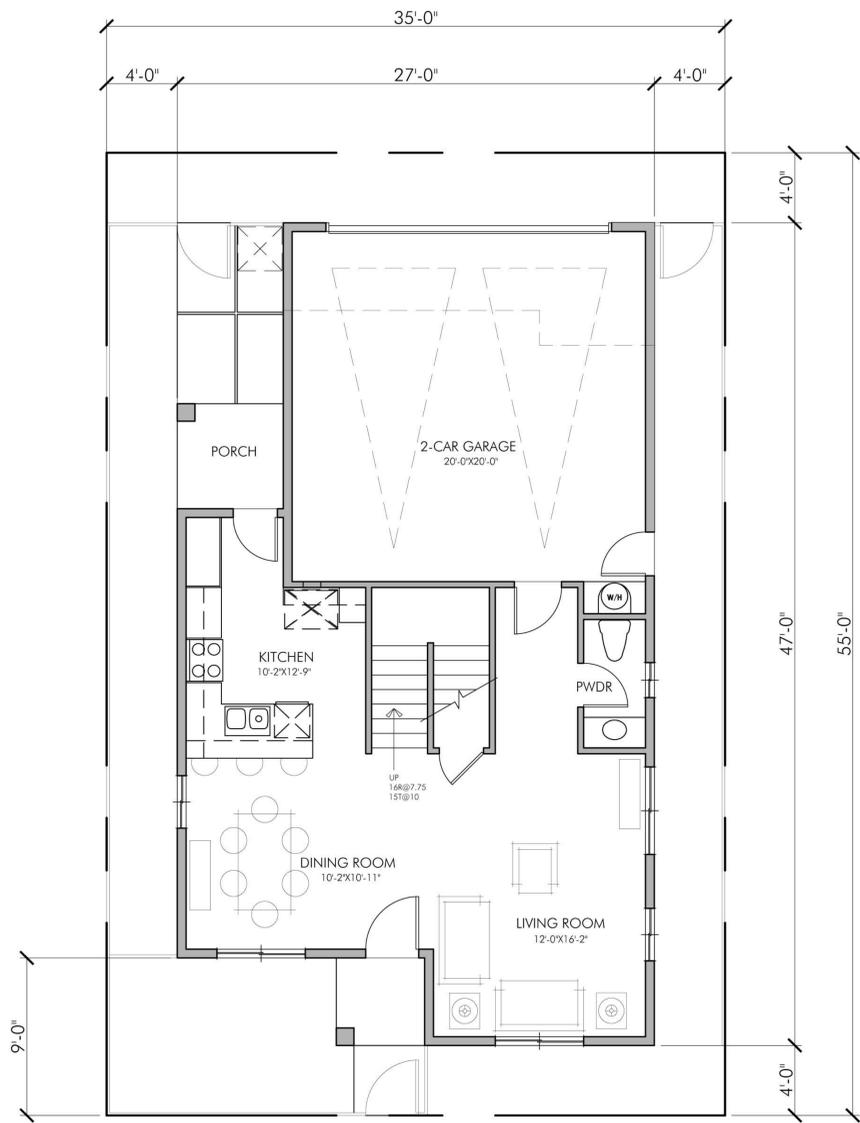
FRONT ELEVATION CRAFTSMAN
PLAN 2

SCALE: 1/4" = 1'-0"



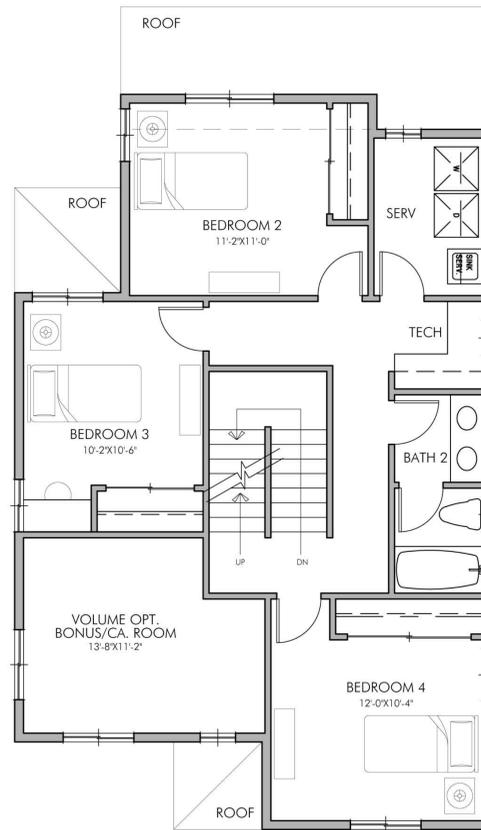
FRONT ELEVATION FARMHOUSE
PLAN 3

SCALE: 1/4" = 1'-0"



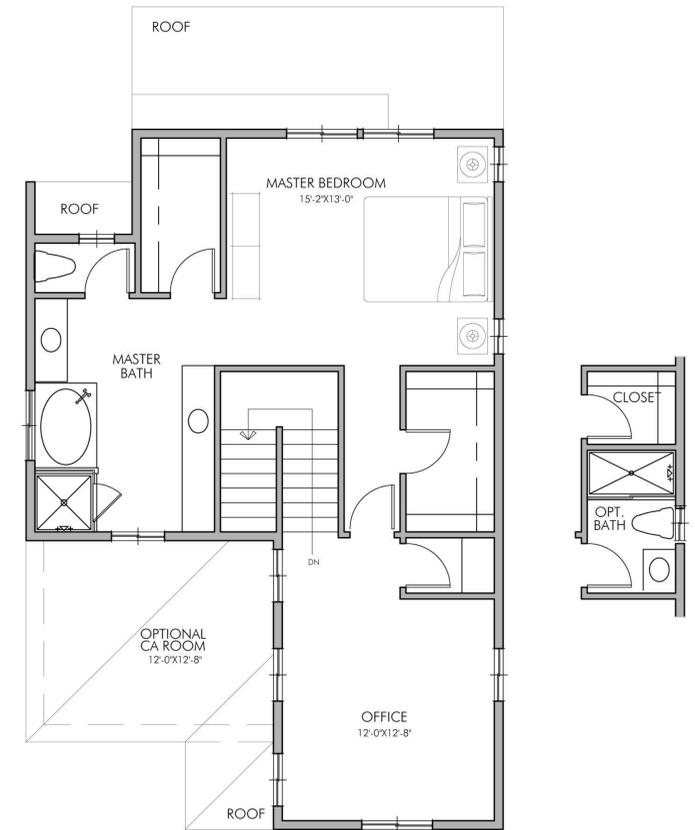
FIRST LEVEL

SCALE: 1/4" = 1'-0"



SECOND LEVEL

SCALE: 1/4" = 1'-0"



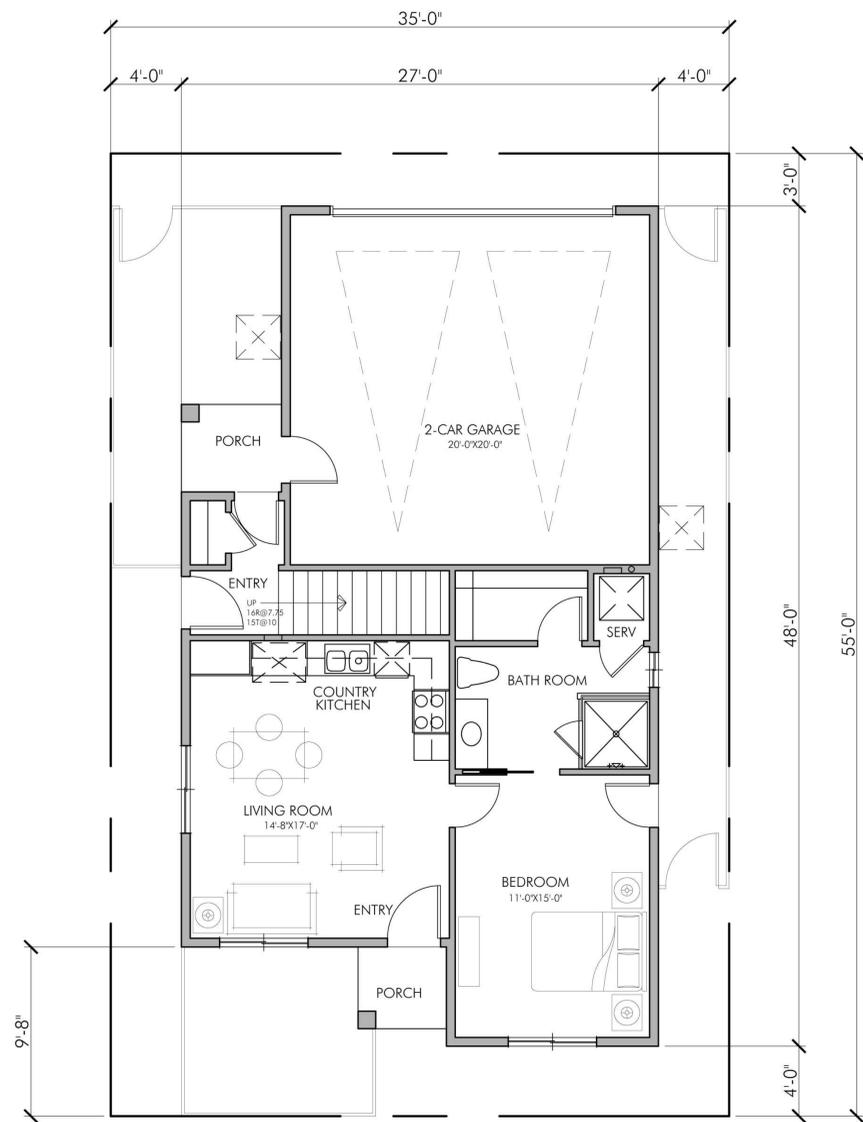
THIRD LEVEL

SCALE: 1/4" = 1'-0"

UNIT SUMMARY - PLAN 1

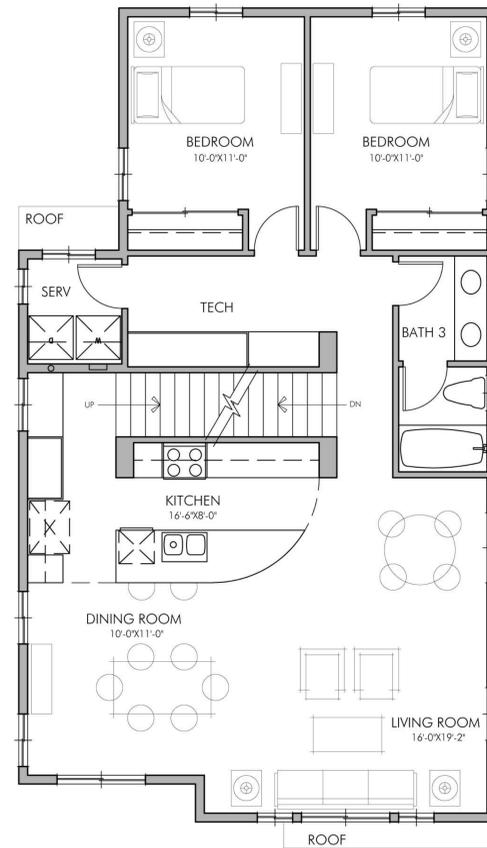
TOTAL MAIN HOUSE: 2,345 S.F.

PLAN 1 W/ BONUS ROOM: 2,491 S.F.



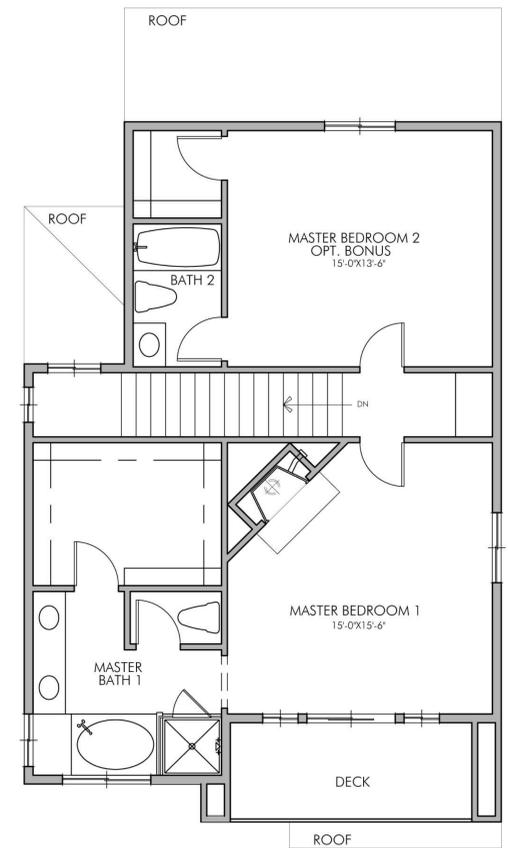
FIRST LEVEL

SCALE: 1/4" = 1'-0"



SECOND LEVEL

SCALE: 1/4" = 1'-0"

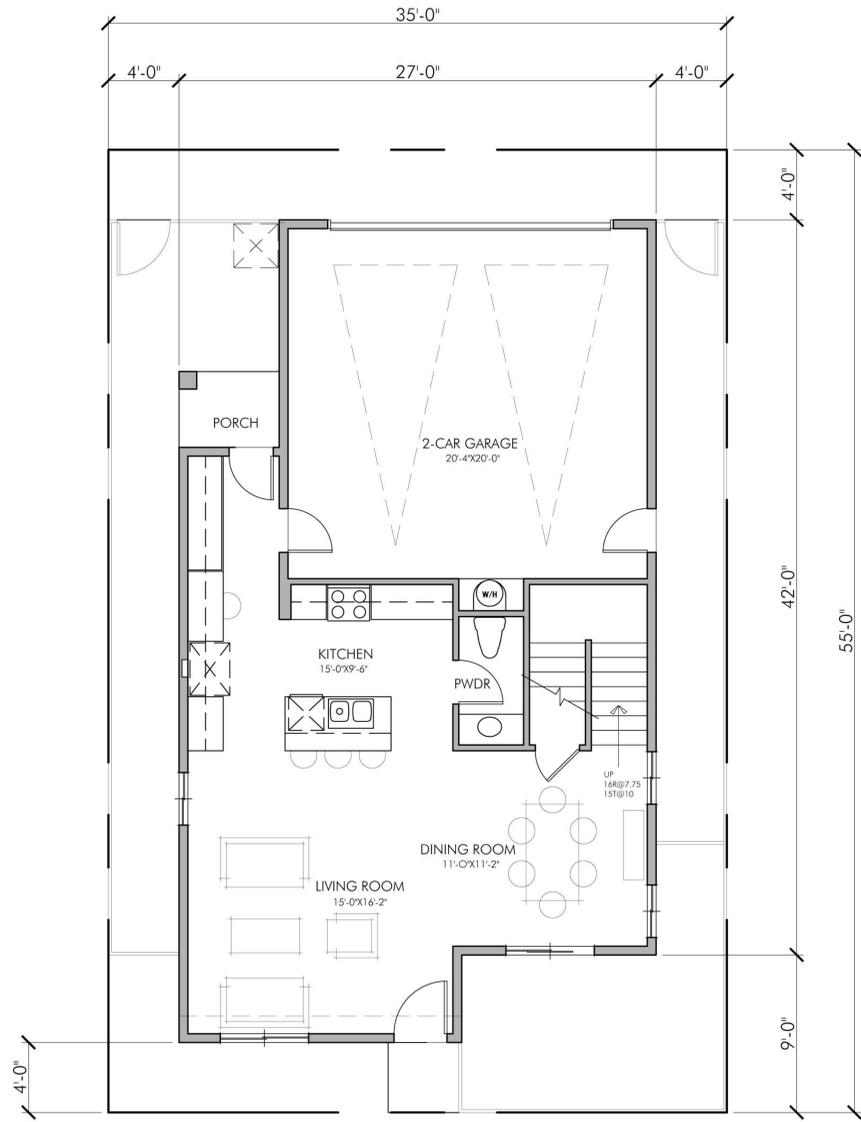


THIRD LEVEL

SCALE: 1/4" = 1'-0"

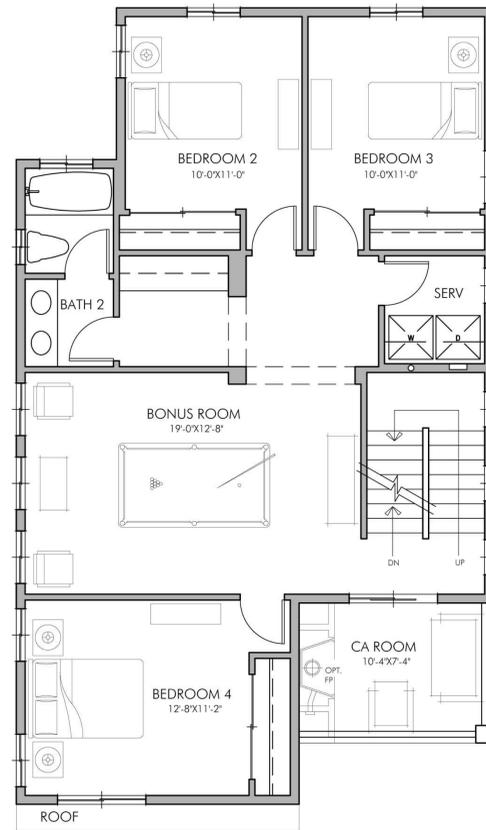
UNIT SUMMARY - PLAN 2

TOTAL MAIN HOUSE: 2,027 S.F.
 TOTAL WITH APT. 2,710 S.F.



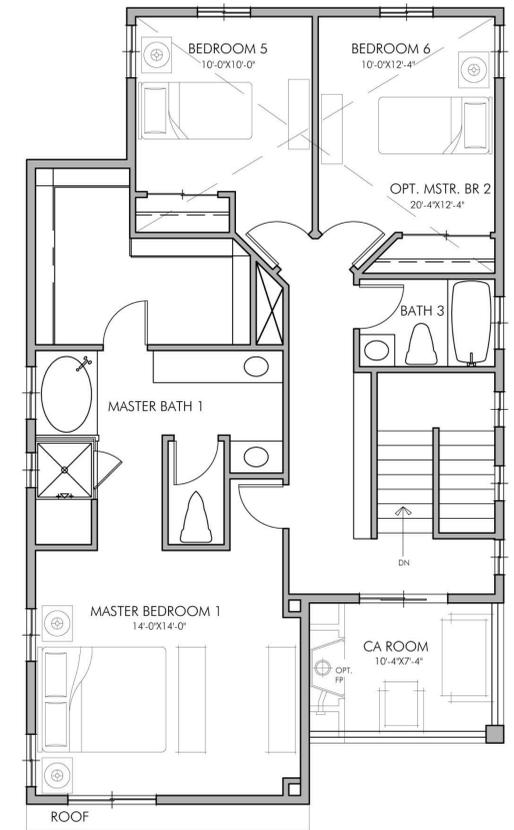
FIRST LEVEL

SCALE: 1/4" = 1'-0"



SECOND LEVEL

SCALE: 1/4" = 1'-0"



THIRD LEVEL

SCALE: 1/4" = 1'-0"

UNIT SUMMARY - PLAN 3

TOTAL MAIN HOUSE: 2,671 S.F.



FRONT ELEVATION FARMHOUSE
PLAN 1

SCALE: 1/4" = 1'-0"



FRONT ELEVATION CRAFTSMAN
PLAN 2

SCALE: 1/4" = 1'-0"



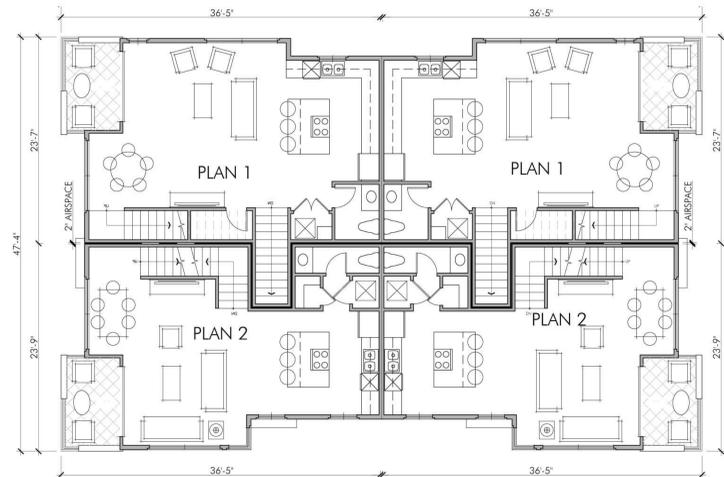
FRONT ELEVATION FARMHOUSE
PLAN 3

SCALE: 1/4" = 1'-0"



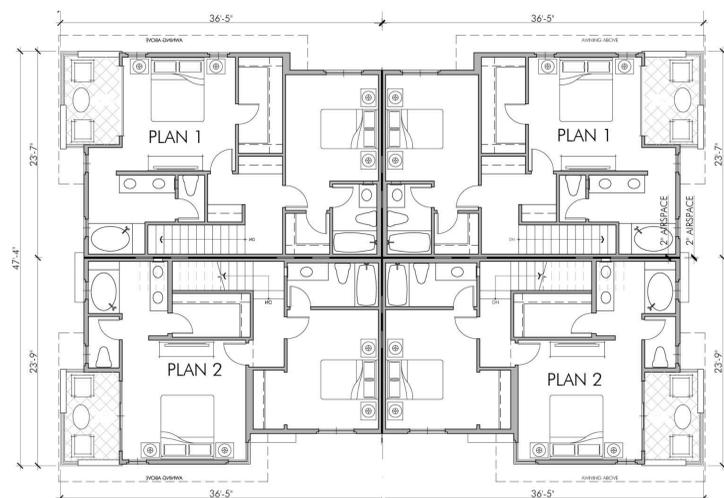
4 - PLEX FIRST LEVEL

SCALE: 1/8" = 1'-0"



4 - PLEX SECOND LEVEL

SCALE: 1/8" = 1'-0"



4 - PLEX THIRD LEVEL

SCALE: 1/8" = 1'-0"

UNIT SUMMARY - 4 PLEX

PLAN 1:	1,486 S.F.	2BR/2.5 BATH
PLAN 2:	1,707 S.F.	3BR/3.5 BATH



LEFT ELEVATION
CONTEMPORARY AGRARIAN SCALE: 1/8" = 1'-0"



REAR ELEVATION
CONTEMPORARY AGRARIAN SCALE: 1/8" = 1'-0"

MATERIALS LIST CONTEMPORARY AGRARIAN

- 30/30 CEMENT PLASTER EXTERIOR FINISH.
- CEMENT BOARD HORIZONTAL SIDING.
- METAL VERTICAL SIDING - POWDER COATED.
- LOW SLOPE BUILT UP OR SINGLE PLY ROOF.
- ANODIZED ALUMINUM WINDOW FRAMES - COLOR: WHITE.
- FIBER GLASS ENTRY DOORS WITH GLASS.
- GALVANIZED METAL LOUVER AWNINGS - POWDER COATED.
- PERFORATED GALVANIZED METAL DECK RAILING PANELS WITH PERIMETER TUBING POWDER COATED.
- GALVANIZED METAL BANDING AT FLOOR LINE AT DECKS - PAINTED.
- GALVANIZED METAL PARAPET FLASHING CAP - PAINTED
- GALVANIZED METAL ENTRY DOOR AWNINGS - POWDER COATED
- METAL ROLL UP GARAGE DOORS WITH GLAZING
- STANDING SEAM GALVANIZED METAL SLOPING ROOF WITH METAL BRACKETS AT EAVE.



LEFT ELEVATION
CONTEMPORARY AGRARIAN SCALE: 1/8" = 1'-0"



FRONT ELEVATION
CONTEMPORARY AGRARIAN SCALE: 1/8" = 1'-0"



LEFT ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"



REAR ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"

MATERIALS LIST AGRARIAN

- 30/30 CEMENT PLASTER EXTERIOR FINISH - COLORS WHITE, SAGE GREEN, GREY, ROSE
- GALVANIZED METAL LOUVER AWNINGS - POWDER COATED.
- DECK COLUMNS WITH CEMENT BOARD FACING AND TRIM.
- CEMENT BOARD EXTERIOR HORIZONTAL SIDING
- LOW SLOPE BUILT UP OR SINGLE PLY ROOF.
- ASPHALT SHINGLE SLOPING ROOF
- ANODIZED ALUMINUM WINDOW FRAMES - WHITE
- FIBER GLASS ENTRY DOORS WITH GLASS.
- GALVANIZED METAL DECK RAILING - POWDER COATED.
- CEMENT BOARD DECK FLOOR BANDING.
- GALVANIZED METAL PARAPET FLASHING CAP - PAINTED
- METAL CORBELS AT FLOOR OVERHANGS AND GABLES - PAINTED
- GALVANIZED METAL TRELLIS - POWDER COATED.



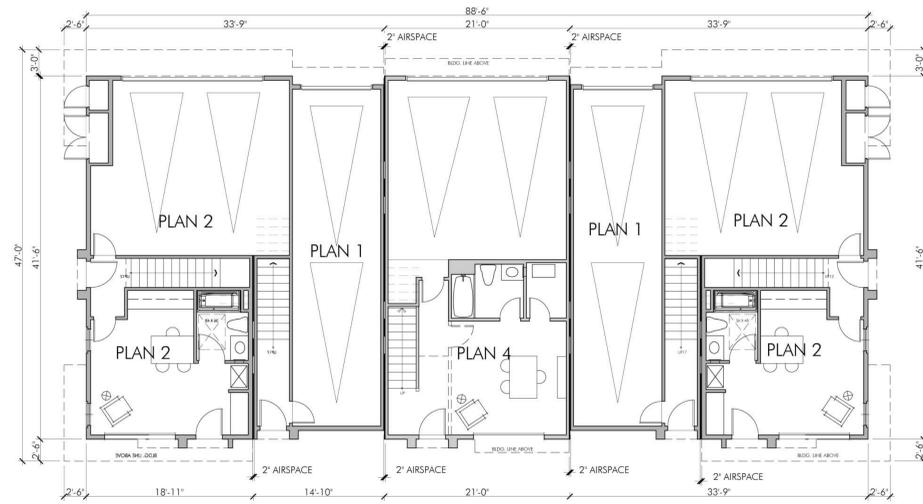
LEFT ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"



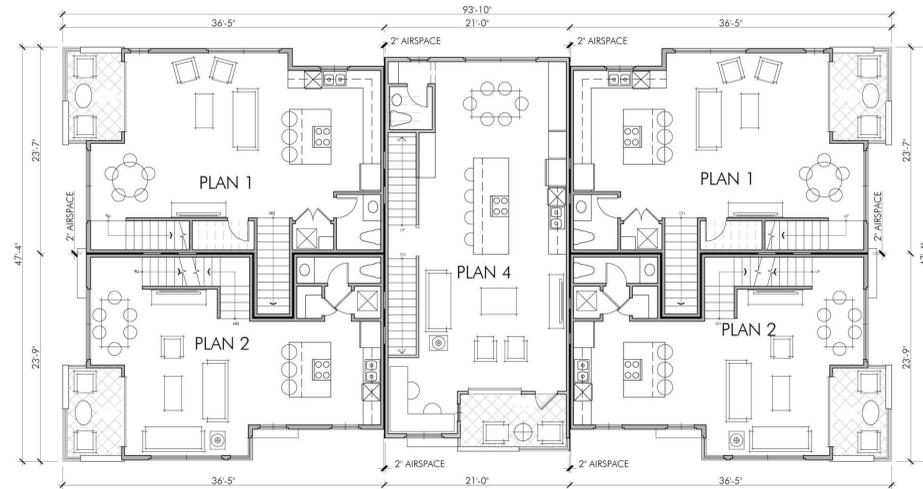
FRONT ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"



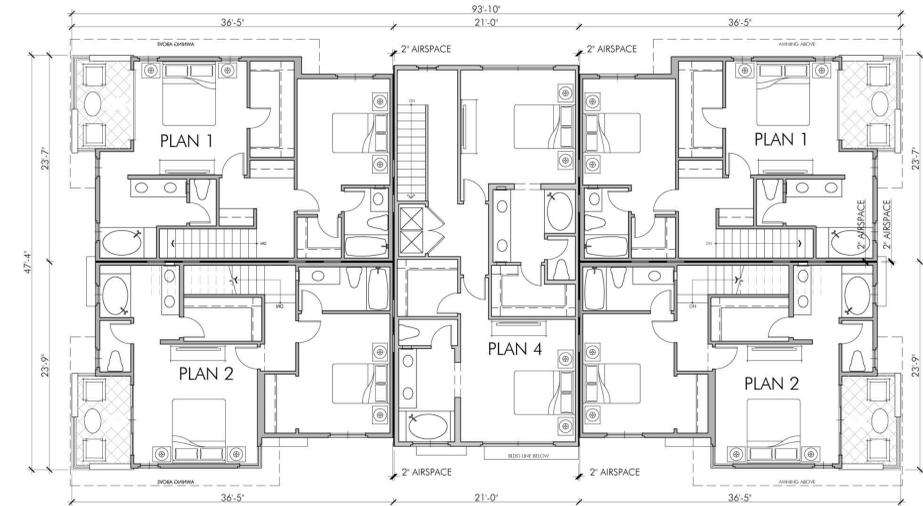
5-PLEX FIRST LEVEL

SCALE: 1/8" = 1'-0"



5-PLEX SECOND LEVEL

SCALE: 1/8" = 1'-0"



5-PLEX THIRD LEVEL

SCALE: 1/8" = 1'-0"

UNIT SUMMARY - 5 PLEX

PLAN 1:	1,486 S.F.	2BR/2.5 BATH
PLAN 2:	1,707 S.F.	3BR/3.5 BATH
PLAN 4:	2,089 S.F.	3BR/3.5 BATH



LEFT ELEVATION

CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"



REAR ELEVATION

CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"

MATERIALS LIST CONTEMPORARY AGRARIAN

- 30/30 CEMENT PLASTER EXTERIOR FINISH.
- CEMENT BOARD HORIZONTAL SIDING.
- METAL VERTICAL SIDING - POWDER COATED.
- LOW SLOPE BUILT UP OR SINGLE PLY ROOF.
- ANODIZED ALUMINUM WINDOW FRAMES - COLOR: WHITE.
- FIBER GLASS ENTRY DOORS WITH GLASS.
- GALVANIZED METAL LOUVER AWNINGS - POWDER COATED.
- PERFORATED GALVANIZED METAL DECK RAILING PANELS WITH PERIMETER TUBING POWDER COATED.
- GALVANIZED METAL BANDING AT FLOOR LINE AT DECKS - PAINTED.
- GALVANIZED METAL PARAPET FLASHING CAP - PAINTED
- GALVANIZED METAL ENTRY DOOR AWNINGS - POWDER COATED
- METAL ROLL UP GARAGE DOORS WITH GLAZING
- STANDING SEAM GALVANIZED METAL SLOPING ROOF WITH METAL BRACKETS AT EAVE.



LEFT ELEVATION

CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"



FRONT ELEVATION

CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"



6-PLEX FIRST LEVEL

SCALE: 1/8" = 1'-0"



6-PLEX SECOND LEVEL

SCALE: 1/8" = 1'-0"



6-PLEX THIRD LEVEL

SCALE: 1/8" = 1'-0"

UNIT SUMMARY - 6 PLEX

PLAN 1:	1,486 S.F.	2BR/2.5 BATH
PLAN 2:	1,707 S.F.	3BR/3.5 BATH
PLAN 3:	1,900 S.F.	4BR/3.5 BATH
PLAN 4:	2,089 S.F.	4BR/3.5 BATH



LEFT ELEVATION
CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"



REAR ELEVATION
CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"

MATERIALS LIST CONTEMPORARY AGRARIAN

- 30/30 CEMENT PLASTER EXTERIOR FINISH.
- CEMENT BOARD HORIZONTAL SIDING.
- METAL VERTICAL SIDING - POWDER COATED.
- LOW SLOPE BUILT UP OR SINGLE PLY ROOF.
- ANODIZED ALUMINUM WINDOW FRAMES - COLOR: WHITE.
- FIBER GLASS ENTRY DOORS WITH GLASS.
- GALVANIZED METAL LOUVER AWNINGS - POWDER COATED.
- PERFORATED GALVANIZED METAL DECK RAILING PANELS WITH PERIMETER TUBING POWDER COATED.
- GALVANIZED METAL BANDING AT FLOOR LINE AT DECKS - PAINTED.
- GALVANIZED METAL PARAPET FLASHING CAP - PAINTED
- GALVANIZED METAL ENTRY DOOR AWNINGS - POWDER COATED
- METAL ROLL UP GARAGE DOORS WITH GLAZING
- STANDING SEAM GALVANIZED METAL SLOPING ROOF WITH METAL BRACKETS AT EAVE.



LEFT ELEVATION
CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"



FRONT ELEVATION
CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"



LEFT ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"



REAR ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"

MATERIALS LIST AGRARIAN

- 30/30 CEMENT PLASTER EXTERIOR FINISH - COLORS WHITE, SAGE GREEN, GREY, ROSE
- GALVANIZED METAL LOUVER AWNINGS - POWDER COATED.
- DECK COLUMNS WITH CEMENT BOARD FACING AND TRIM.
- CEMENT BOARD EXTERIOR HORIZONTAL SIDING
- LOW SLOPE BUILT UP OR SINGLE PLY ROOF.
- ASPHALT SHINGLE SLOPING ROOF
- ANODIZED ALUMINUM WINDOW FRAMES - WHITE
- FIBER GLASS ENTRY DOORS WITH GLASS.
- GALVANIZED METAL DECK RAILING - POWDER COATED.
- CEMENT BOARD DECK FLOOR BANDING.
- GALVANIZED METAL PARAPET FLASHING CAP - PAINTED
- METAL CORBELS AT FLOOR OVERHANGS AND GABLES - PAINTED
- GALVANIZED METAL TRELLIS - POWDER COATED.



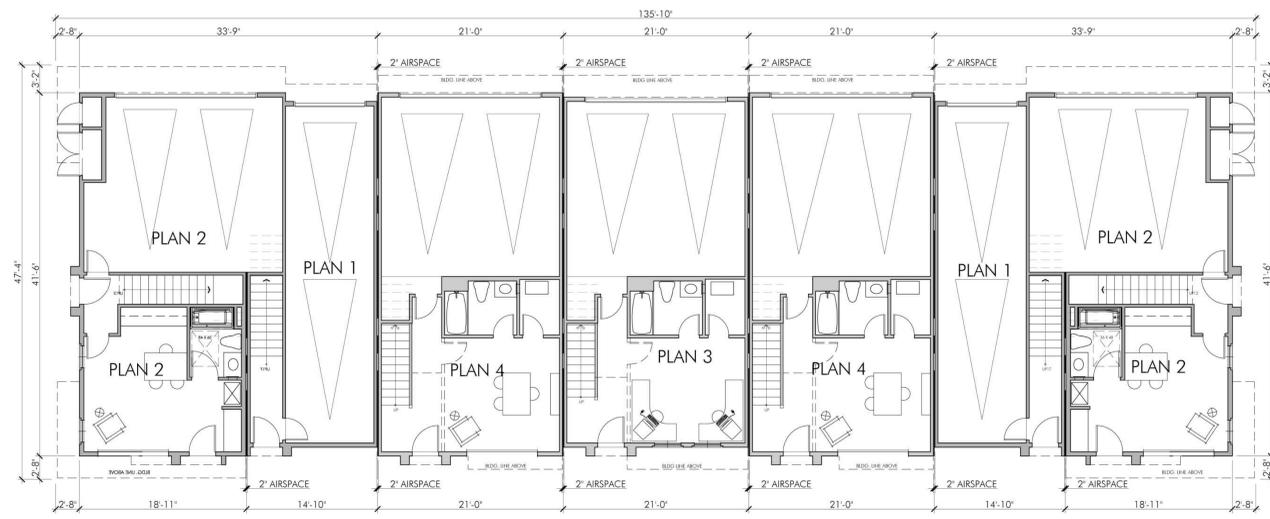
LEFT ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"



FRONT ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"



7-PLEX FIRST LEVEL

SCALE: 1/8" = 1'-0"



7-PLEX SECOND LEVEL

SCALE: 1/8" = 1'-0"



7-PLEX THIRD LEVEL

SCALE: 1/8" = 1'-0"

UNIT SUMMARY - 7 PLEX

PLAN 1:	1,486 S.F.	2BR/2.5 BATH
PLAN 2:	1,707 S.F.	3BR/3.5 BATH
PLAN 3:	1,900 S.F.	4BR/3.5 BATH
PLAN 4:	2,089 S.F.	4BR/3.5 BATH



LEFT ELEVATION
CONTEMPORARY AGRARIAN SCALE: 1/8" = 1'-0"



REAR ELEVATION
CONTEMPORARY AGRARIAN SCALE: 1/8" = 1'-0"

MATERIALS LIST CONTEMPORARY AGRARIAN

- 30/30 CEMENT PLASTER EXTERIOR FINISH.
- CEMENT BOARD HORIZONTAL SIDING.
- METAL VERTICAL SIDING - POWDER COATED.
- LOW SLOPE BUILT UP OR SINGLE PLY ROOF.
- ANODIZED ALUMINUM WINDOW FRAMES - COLOR: WHITE.
- FIBER GLASS ENTRY DOORS WITH GLASS.
- GALVANIZED METAL LOUVER AWNINGS - POWDER COATED.
- PERFORATED GALVANIZED METAL DECK RAILING PANELS WITH PERIMETER TUBING POWDER COATED.
- GALVANIZED METAL BANDING AT FLOOR LINE AT DECKS - PAINTED.
- GALVANIZED METAL PARAPET FLASHING CAP - PAINTED
- GALVANIZED METAL ENTRY DOOR AWNINGS - POWDER COATED
- METAL ROLL UP GARAGE DOORS WITH GLAZING
- STANDING SEAM GALVANIZED METAL SLOPING ROOF WITH METAL BRACKETS AT EAVE.



LEFT ELEVATION
CONTEMPORARY AGRARIAN SCALE: 1/8" = 1'-0"



FRONT ELEVATION
CONTEMPORARY AGRARIAN SCALE: 1/8" = 1'-0"



LEFT ELEVATION

AGRARIAN

SCALE: 1/8" = 1'-0"



REAR ELEVATION

AGRARIAN

SCALE: 1/8" = 1'-0"

MATERIALS LIST AGRARIAN

- 30/30 CEMENT PLASTER EXTERIOR FINISH - COLORS WHITE, SAGE GREEN, GREY, ROSE
- GALVANIZED METAL LOUVER AWNINGS - POWDER COATED.
- DECK COLUMNS WITH CEMENT BOARD FACING AND TRIM.
- CEMENT BOARD EXTERIOR HORIZONTAL SIDING
- LOW SLOPE BUILT UP OR SINGLE PLY ROOF.
- ASPHALT SHINGLE SLOPING ROOF
- ANODIZED ALUMINUM WINDOW FRAMES - WHITE
- FIBER GLASS ENTRY DOORS WITH GLASS.
- GALVANIZED METAL DECK RAILING - POWDER COATED.
- CEMENT BOARD DECK FLOOR BANDING.
- GALVANIZED METAL PARAPET FLASHING CAP - PAINTED
- METAL CORBELS AT FLOOR OVERHANGS AND GABLES - PAINTED
- GALVANIZED METAL TRELLIS - POWDER COATED.



LEFT ELEVATION

AGRARIAN

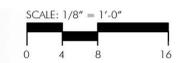
SCALE: 1/8" = 1'-0"



FRONT ELEVATION

AGRARIAN

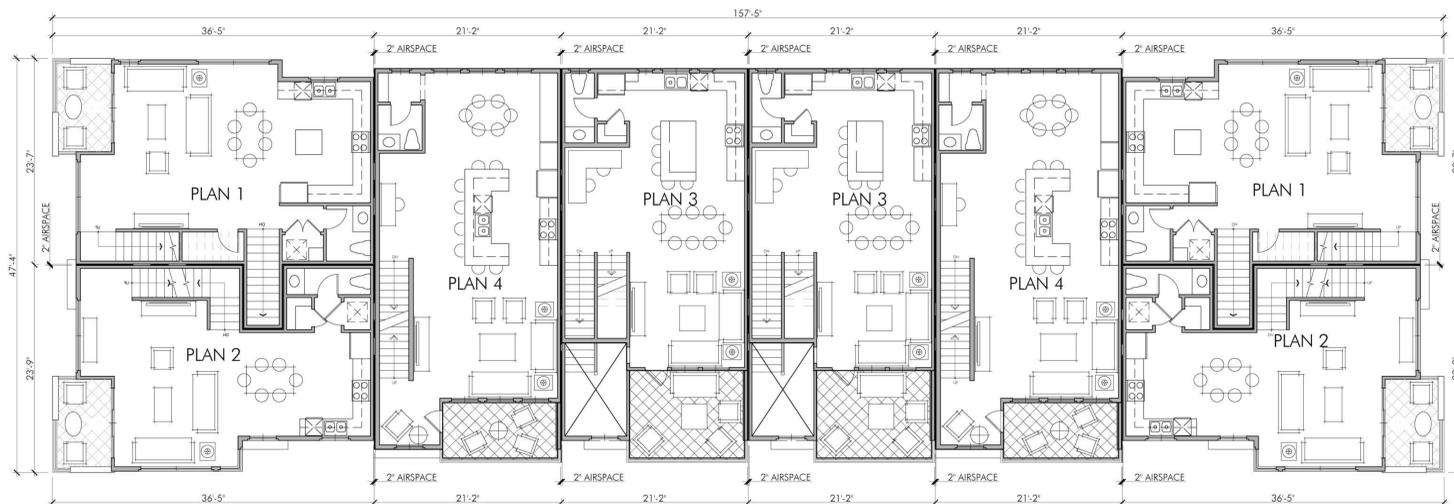
SCALE: 1/8" = 1'-0"





8-PLEX FIRST LEVEL

SCALE: 1/8" = 1'-0"



8-PLEX SECOND LEVEL

SCALE: 1/8" = 1'-0"



8-PLEX THIRD LEVEL

SCALE: 1/8" = 1'-0"

UNIT SUMMARY - 8 PLEX

PLAN 1:	1,486 S.F.	2BR/2.5 BATH
PLAN 2:	1,707 S.F.	3BR/3.5 BATH
PLAN 3:	1,900 S.F.	4BR/3.5 BATH
PLAN 4:	2,089 S.F.	4BR/3.5 BATH



LEFT ELEVATION
CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"



REAR ELEVATION
CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"

MATERIALS LIST CONTEMPORARY AGRARIAN

- 30/30 CEMENT PLASTER EXTERIOR FINISH.
- CEMENT BOARD HORIZONTAL SIDING.
- METAL VERTICAL SIDING - POWDER COATED.
- LOW SLOPE BUILT UP OR SINGLE PLY ROOF.
- ANODIZED ALUMINUM WINDOW FRAMES - COLOR: WHITE.
- FIBER GLASS ENTRY DOORS WITH GLASS.
- GALVANIZED METAL LOUVER AWNINGS - POWDER COATED.
- PERFORATED GALVANIZED METAL DECK RAILING PANELS WITH PERIMETER TUBING POWDER COATED.
- GALVANIZED METAL BANDING AT FLOOR LINE AT DECKS - PAINTED.
- GALVANIZED METAL PARAPET FLASHING CAP - PAINTED
- GALVANIZED METAL ENTRY DOOR AWNINGS - POWDER COATED
- METAL ROLL UP GARAGE DOORS WITH GLAZING
- STANDING SEAM GALVANIZED METAL SLOPING ROOF WITH METAL BRACKETS AT EAVE.



LEFT ELEVATION
CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"



FRONT ELEVATION
CONTEMPORARY AGRARIAN

SCALE: 1/8" = 1'-0"



LEFT ELEVATION

AGRARIAN

SCALE: 1/8" = 1'-0"



REAR ELEVATION

AGRARIAN

SCALE: 1/8" = 1'-0"

MATERIALS LIST AGRARIAN

- 30/30 CEMENT PLASTER EXTERIOR FINISH - COLORS WHITE, SAGE GREEN, GREY, ROSE
- GALVANIZED METAL LOUVER AWNINGS - POWDER COATED.
- DECK COLUMNS WITH CEMENT BOARD FACING AND TRIM.
- CEMENT BOARD EXTERIOR HORIZONTAL SIDING
- LOW SLOPE BUILT UP OR SINGLE PLY ROOF.
- ASPHALT SHINGLE SLOPING ROOF
- ANODIZED ALUMINUM WINDOW FRAMES - WHITE
- FIBER GLASS ENTRY DOORS WITH GLASS.
- GALVANIZED METAL DECK RAILING - POWDER COATED.
- CEMENT BOARD DECK FLOOR BANDING.
- GALVANIZED METAL PARAPET FLASHING CAP - PAINTED
- METAL CORBELS AT FLOOR OVERHANGS AND GABLES - PAINTED
- GALVANIZED METAL TRELLIS - POWDER COATED.



LEFT ELEVATION

AGRARIAN

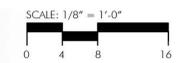
SCALE: 1/8" = 1'-0"



FRONT ELEVATION

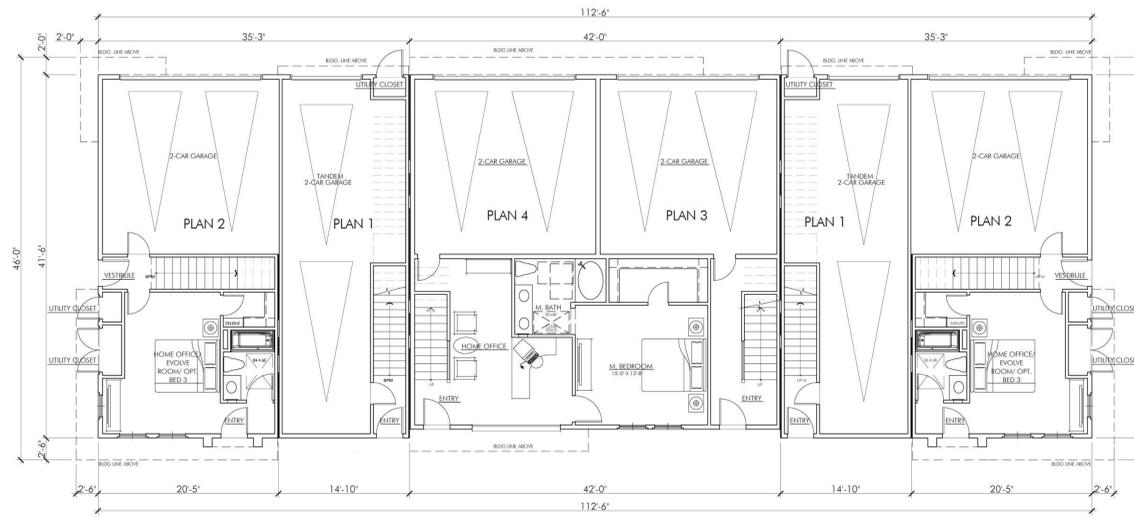
AGRARIAN

SCALE: 1/8" = 1'-0"



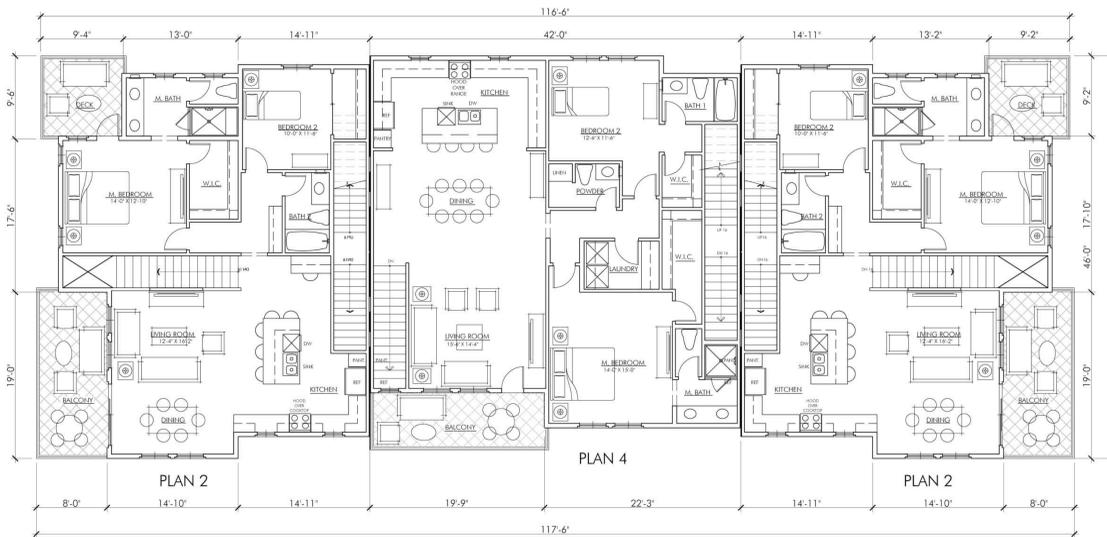
URBAN ARENA





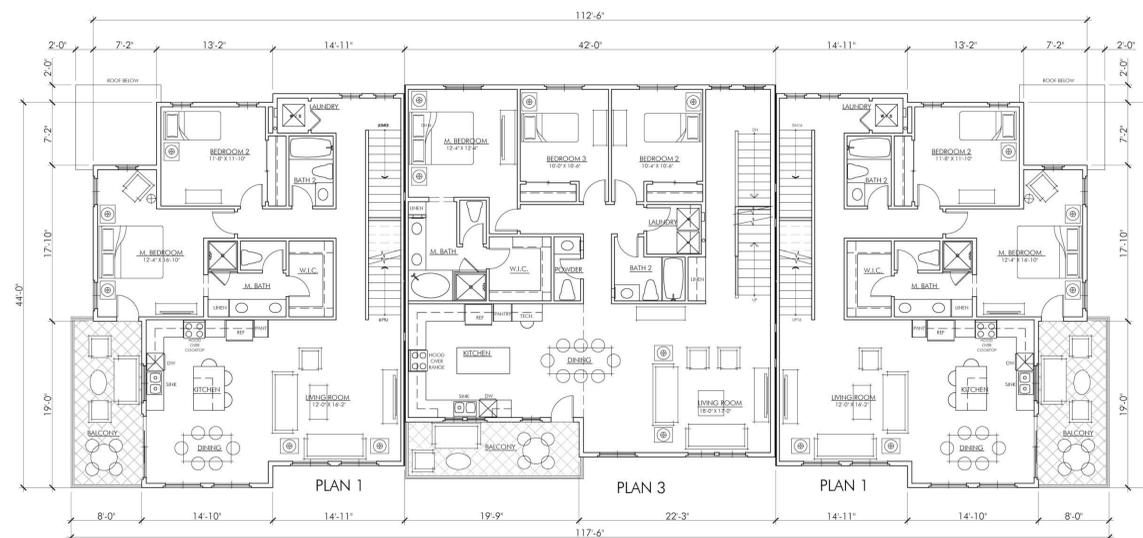
6-PLEX FIRST LEVEL

SCALE: 1/8" = 1'-0"



6-PLEX SECOND LEVEL

SCALE: 1/8" = 1'-0"



6-PLEX THIRD LEVEL

SCALE: 1/8" = 1'-0"

UNIT SUMMARY - 6 PLEX

PLAN 1:	1,445 S.F.	3BR/3 BATH
PLAN 2:	1,547 S.F.	3BR/3 BATH
PLAN 3:	1,907 S.F.	3BR/2.5 BATH
PLAN 4:	2,193 S.F.	3BR/3.5 BATH + OFFICE



6-PLEX LEFT ELEVATION
CONTEMPORARY AGRARIAN A SCALE: 1/8" = 1'-0"



6-PLEX REAR ELEVATION
CONTEMPORARY AGRARIAN A SCALE: 1/8" = 1'-0"



6-PLEX RIGHT ELEVATION
CONTEMPORARY AGRARIAN A SCALE: 1/8" = 1'-0"



6-PLEX FRONT ELEVATION
CONTEMPORARY AGRARIAN A SCALE: 1/8" = 1'-0"



6-PLEX LEFT ELEVATION
CONTEMPORARY AGRARIAN B SCALE: 1/8" = 1'-0"



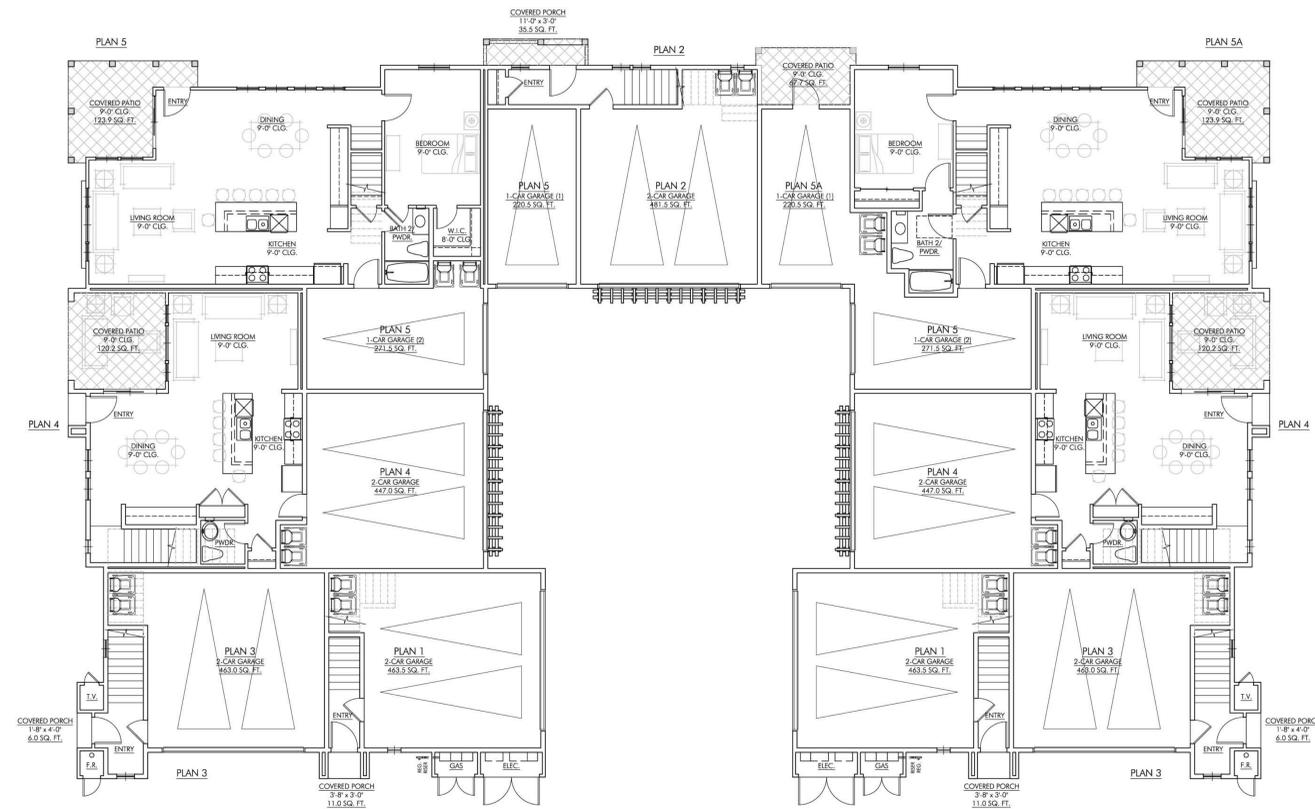
6-PLEX REAR ELEVATION
CONTEMPORARY AGRARIAN B SCALE: 1/8" = 1'-0"



6-PLEX RIGHT ELEVATION
CONTEMPORARY AGRARIAN B SCALE: 1/8" = 1'-0"



6-PLEX FRONT ELEVATION
CONTEMPORARY AGRARIAN B SCALE: 1/8" = 1'-0"



UA P9 9-PLEX FIRST LEVEL

SCALE: 1/8" = 1'-0"

UNIT SUMMARY - P9-9 PLEX

PLAN 1:	1,582 S.F.	2BR / 2.5 BATH + DEN + LOFT
PLAN 2:	1,690 S.F.	3BR / 2.5 BATH + DEN
PLAN 3:	1,787 S.F.	3BR / 2 BATH
PLAN 4:	1,864 S.F.	3BR / 2.5 BATH
PLAN 5:	1,948 S.F.	4BR / 3 BATH



UA P9 9-PLEX SECOND LEVEL

SCALE: 1/8" = 1'-0"



LEFT ELEVATION

SCALE: 1/8" = 1'-0"



MOTORCOURT LEFT ELEVATION

SCALE: 1/8" = 1'-0"



RIGHT ELEVATION

SCALE: 1/8" = 1'-0"



MOTORCOURT RIGHT ELEVATION

SCALE: 1/8" = 1'-0"



FRONT ELEVATION

SCALE: 1/8" = 1'-0"



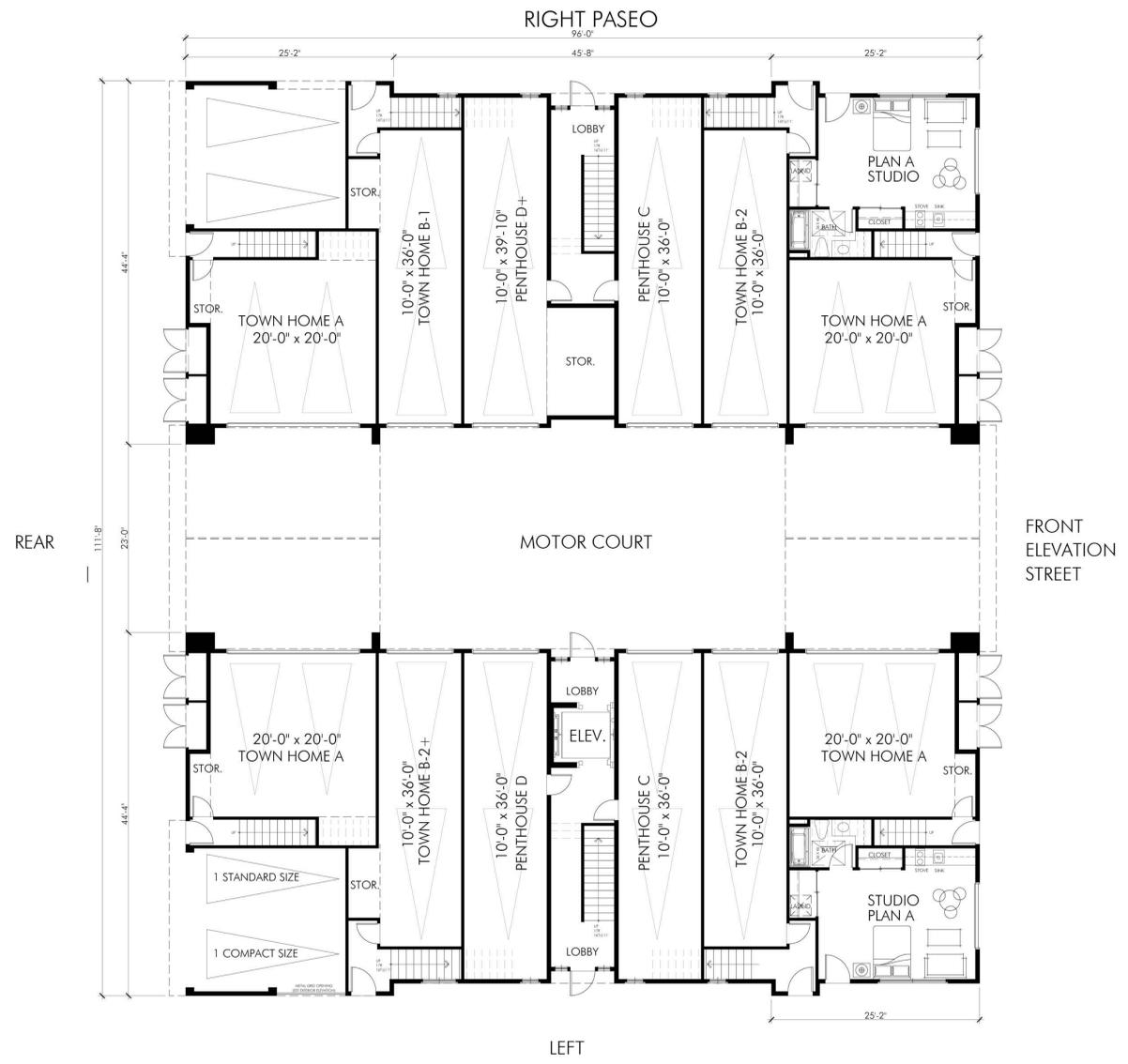
REAR ELEVATION

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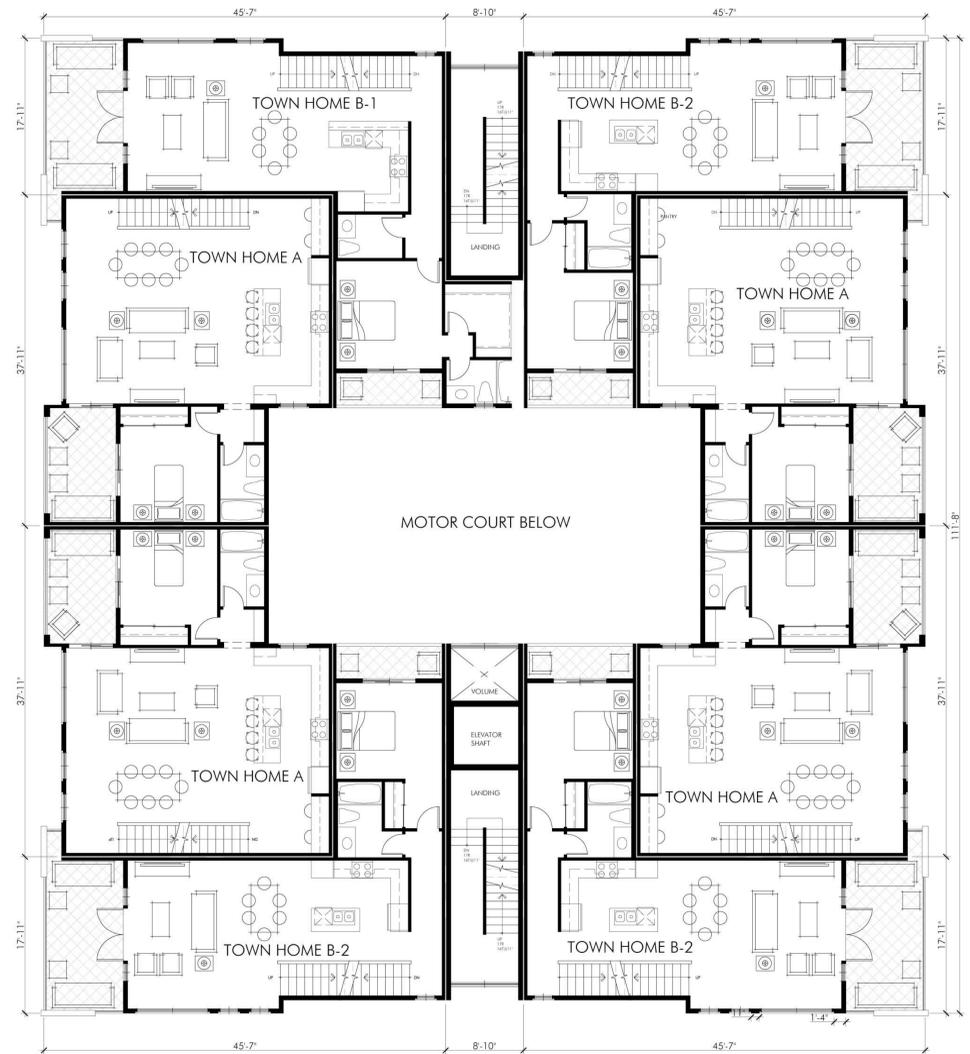
MOTORCOURT REAR ELEVATION

SCALE: 1/8" = 1'-0"



12 PLEX CUBE FIRST LEVEL

SCALE: 1/8" = 1'-0"

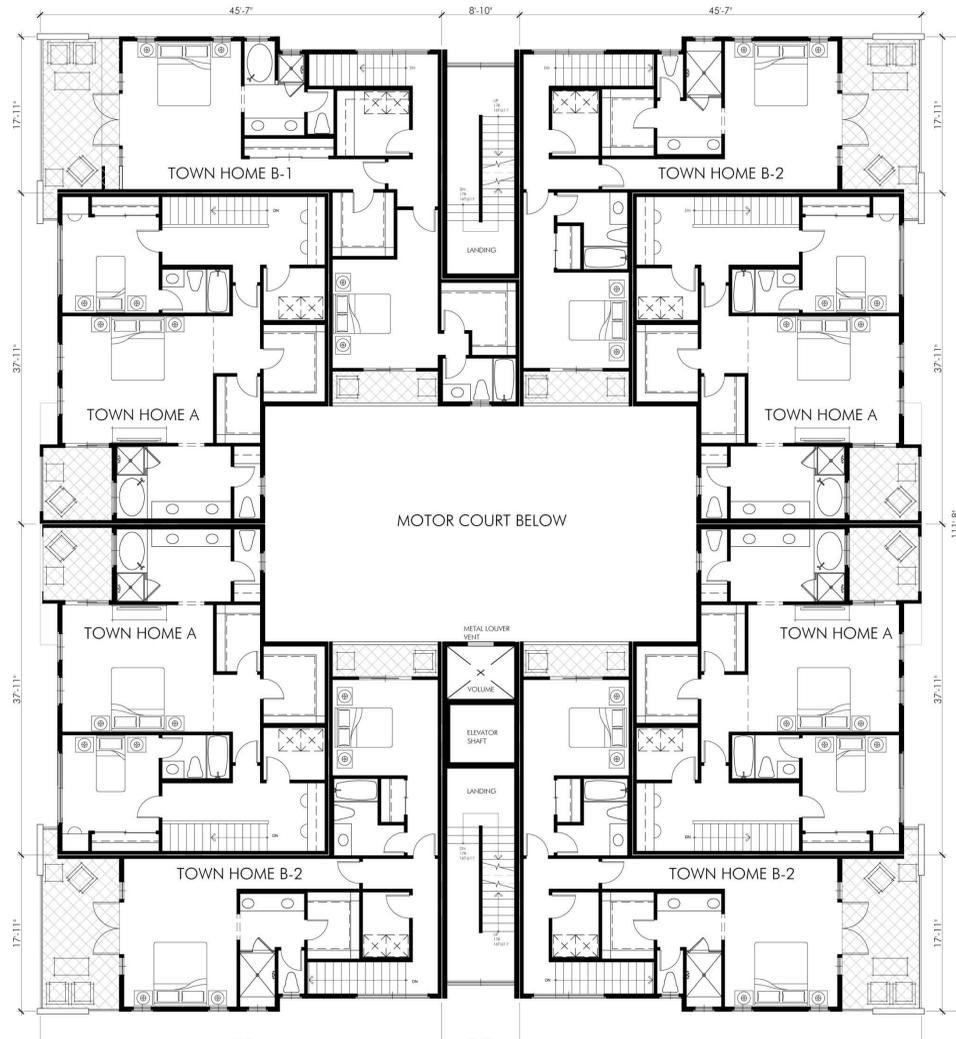


12 PLEX CUBE SECOND LEVEL

SCALE: 1/8" = 1'-0"

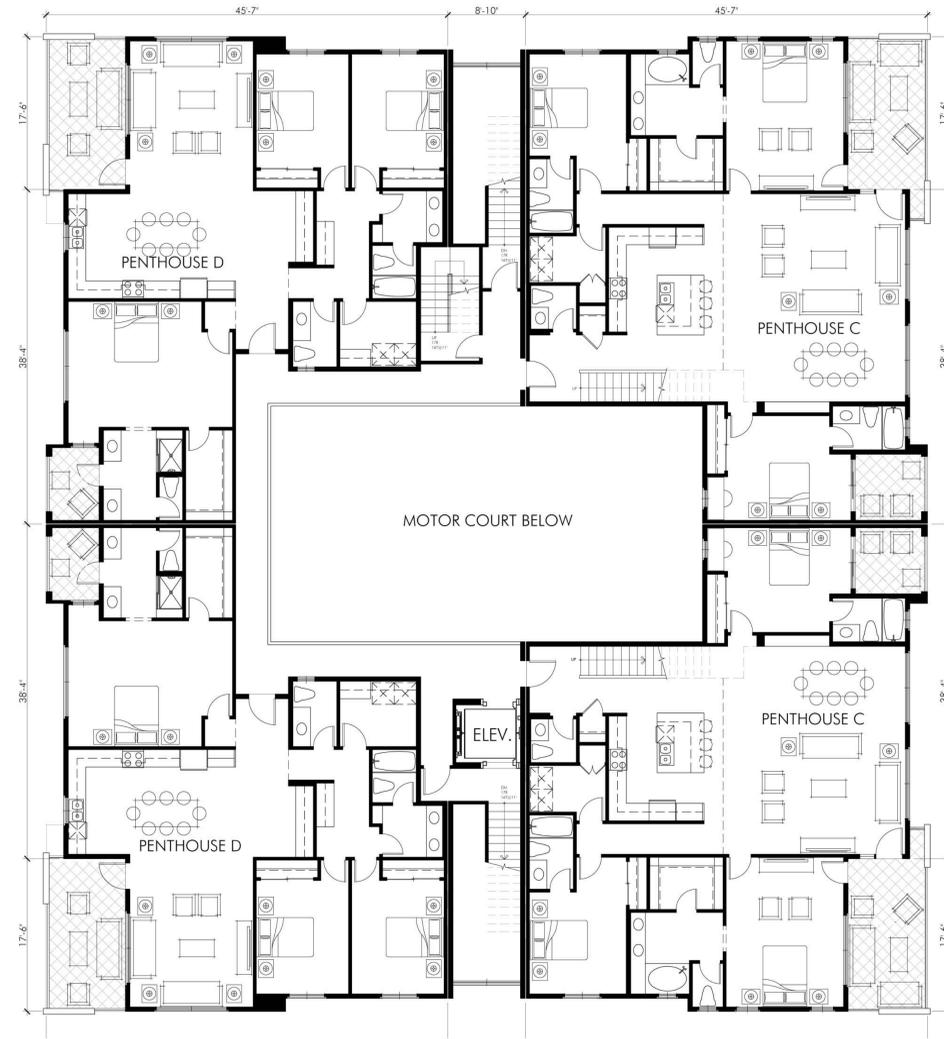
UNIT SUMMARY - UA CUBE

TH - A	2,007 S.F.	3 BR/3 BA
TH - A+	2,399 S.F.	3 BA/3 BA + STUDIO
TH - B1	2,103 S.F.	3 BR/3.5 BA
TH - B2	1,842 S.F.	3 BR/3 BA
PENTHOUSE C	2,305 S.F.	3 BR/3.5 BA
PENTHOUSE D	1,877 S.F.	3 BR/3 BA



12 PLEX CUBE THIRD LEVEL

SCALE: 1/8" = 1'-0"



12 PLEX CUBE FOURTH LEVEL

SCALE: 1/8" = 1'-0"



12 PLEX FRONT ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"



12 PLEX FRONT PERSPECTIVE
AGRARIAN

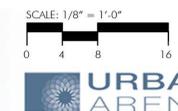


12 PLEX SIDE ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"

MATERIAL LIST

- UA CUBE LEVATION ("Ranch Agrarian Style")
- 30/30 CEMENT PLASTER EXTERIOR FINISH- COLOR: WHITE
 - COMPOSITE WOOD OR CEMENT BOARD EXTERIOR HORIZONTAL SIDING – COLOR: WARM GREY.
 - COMPOSITE WOOD OR CEMENT SHINGLE EXTERIOR SIDING – COLOR: BROWN.
 - COMPOSITE TRI-LAMINATE SHINGLE ROOF.
 - LOW SLOPE BUILT UP OR SINGLE PLY ROOF.
 - WOOD TRELLIS.
 - WOOD BRACKETS AT EAVES.
 - ANODIZED ALUMINUM WINDOW FRAMES.
 - FIBERGLASS ENTRY DOORS WITH GLASS – COLOR: TUSCAN RED, NAVY BLUE, DARK GRAY.
 - FIBERGLASS WINDOW ACCENT SHUTTERS – COLOR: WHITE
 - DECORATIVE ARCHITECTURAL COMPOSITE MATERIAL GUARDRAILS AT DECKS – COLOR: WHITE
 - DECORATIVE ARCHITECTURAL COMPOSITE MATERIAL FLOWER BOXES - COLOR WHITE
 - ENTRY DOOR AWNINGS WITH WOOD BRACKETS AND COMPOSITE TILE.
 - HIGH DENSITY FOAM CORBELS AT FLOOR OVERHANGS – COLOR: WHITE





12 PLEX FRONT ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"



12 PLEX REAR PERSEPECTIVE
AGRARIAN

SCALE: 1/8" = 1'-0"



12 PLEX SIDE ELEVATION
AGRARIAN

SCALE: 1/8" = 1'-0"

MATERAL LIST

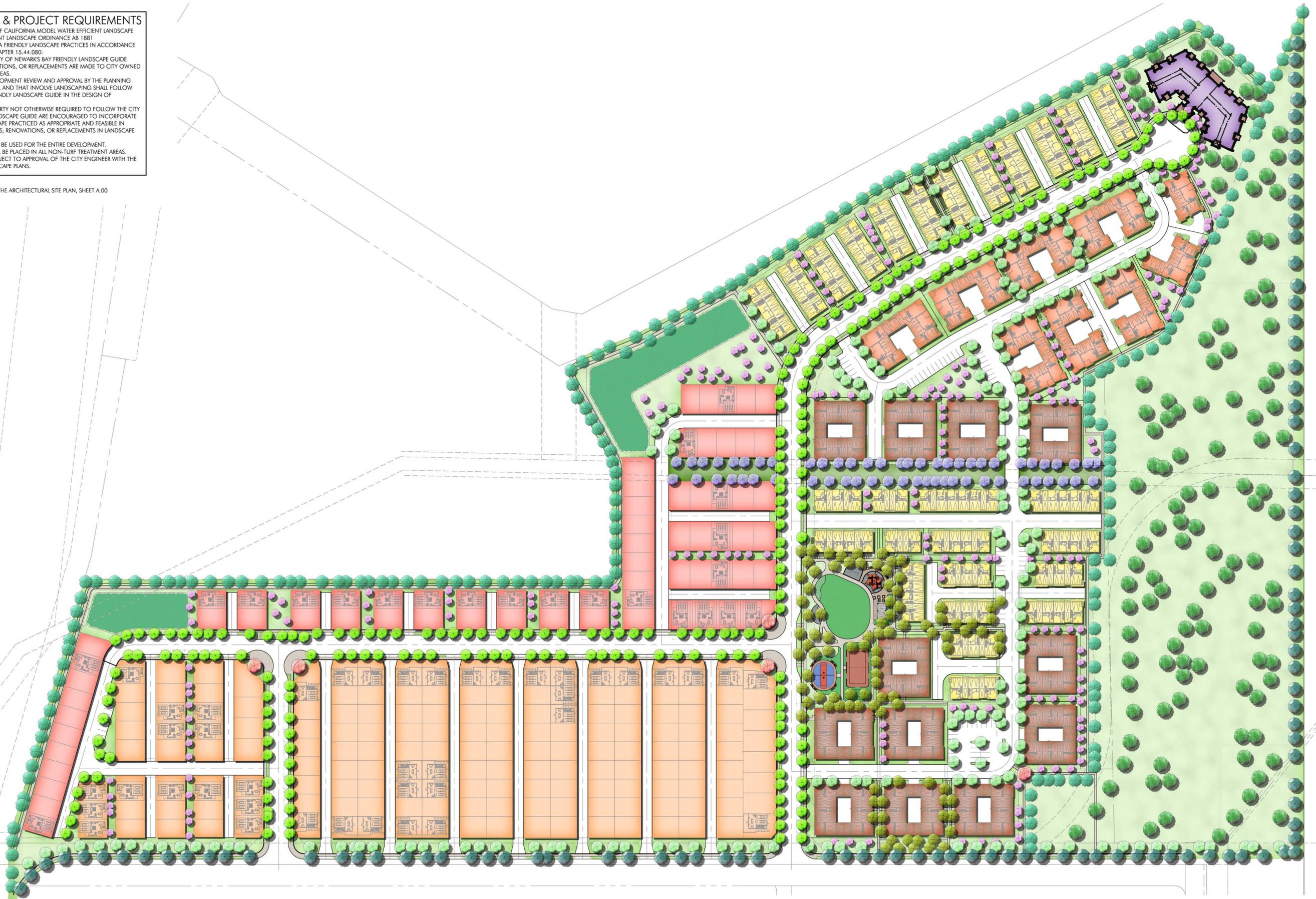
UA CUBE LEVATION ("Ranch Agrarian Style")

- 30/30 CEMENT PLASTER EXTERIOR FINISH- COLOR: WHITE
- COMPOSITE WOOD OR CEMENT BOARD EXTERIOR HORIZONTAL SIDING – COLOR: COOL GREY.
- COMPOSITE WOOD OR CEMENT SHINGLE EXTERIOR SIDING – COLOR: GREEN
- COMPOSITE TRI-LAMINATE SHINGLE ROOF.
- LOW SLOPE BUILT UP OR SINGLE PLY ROOF.
- WOOD TRELLIS.
- WOOD BRACKETS AT EAVES.
- ANODIZED ALUMINUM WINDOW FRAMES.
- FIBERGLASS ENTRY DOORS WITH GLASS – COLOR: NAVY BLUE, DARK GRAY, FOREST GREEN
- FIBERGLASS WINDOW ACCENT SHUTTERS – COLOR: BLUE
- DECORATIVE ARCHITECTURAL COMPOSITE MATERIAL GUARDRAILS AT DECKS – COLOR: WHITE
- DECORATIVE ARCHITECTURAL COMPOSITE MATERIAL FLOWER BOXES - COLOR BLUE
- ENTRY DOOR AWNINGS WITH WOOD BRACKETS AND COMPOSITE TILE.
- HIGH DENSITY FOAM CORBELS AT FLOOR OVERHANGS – COLOR: WHITE

ADDITIONAL NOTES & PROJECT REQUIREMENTS

1. PROJECT TO IMPLEMENT THE STATE OF CALIFORNIA MODEL WATER EFFICIENT LANDSCAPE ORDINANCE - MODEL WATER EFFICIENT LANDSCAPE ORDINANCE AB 1881
2. PROJECT TO IMPLEMENT THE BAY AREA FRIENDLY LANDSCAPE PRACTICES IN ACCORDANCE WITH NEWARK MUNICIPAL CODE, CHAPTER 15.44.080:
 - A. THE CITY SHALL FOLLOW THE CITY OF NEWARK'S BAY FRIENDLY LANDSCAPE GUIDE WHENEVER ADDITIONS, RENOVATIONS, OR REPLACEMENTS ARE MADE TO CITY OWNED OR CONTROLLED LANDSCAPE AREAS.
 - B. ALL PROJECTS REQUIRING DEVELOPMENT REVIEW AND APPROVAL BY THE PLANNING COMMISSION OR CITY COUNCIL AND THAT INVOLVE LANDSCAPING SHALL FOLLOW THE CITY OF NEWARK'S BAY FRIENDLY LANDSCAPE GUIDE IN THE DESIGN OF LANDSCAPE AREAS.
 - C. LANDSCAPERS OF PRIVATE PROPERTY NOT OTHERWISE REQUIRED TO FOLLOW THE CITY OF NEWARK'S BAY FRIENDLY LANDSCAPE GUIDE ARE ENCOURAGED TO INCORPORATE AS MANY BAY FRIENDLY LANDSCAPE PRACTICES AS APPROPRIATE AND FEASIBLE IN PROJECTS INVOLVING ADDITIONS, RENOVATIONS, OR REPLACEMENTS IN LANDSCAPE AREAS.
3. AUTOMATIC IRRIGATION SYSTEMS TO BE USED FOR THE ENTIRE DEVELOPMENT.
4. A 3-INCH LAYER OF BARK MULCH WILL BE PLACED IN ALL NON-TURF TREATMENT AREAS.
5. ALL FINAL PLANT SELECTIONS ARE SUBJECT TO APPROVAL OF THE CITY ENGINEER WITH THE FINAL CONSTRUCTION-STAGE LANDSCAPE PLANS.

*FOR UNIT COUNT SUMMARY, REFER TO THE ARCHITECTURAL SITE PLAN, SHEET A.00



PLANTING LEGEND

TREES

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	WUCOLS	BAY AREA FRIENDLY
	ARBUTUS UNEDO	STRAWBERRY TREE	36" BOX	LOW	+
	BETULA PENDULA	EUROPEAN WHITE BIRCH	36" BOX	MEDIUM	
	PLATANUS ACERIFOLIA 'COLUMBIA'	LONDON PLANE TREE	36" BOX	MEDIUM	
	GINKGO BILOBA 'FAIRMONT'	MAIDENHAIR TREE	48" BOX	MEDIUM	
	LAGERSTROEMIA INDICA	GRAPE MYRTLE	24" BOX	LOW	
	MAGNOLIA GRANDIFLORA 'RUSSET'	SOUTHERN MAGNOLIA	60" BOX	MEDIUM	
	PRUNUS CERASIFERA	PURPLE LEAF PLUM	36" BOX STANDARD	MEDIUM	
	PYRUS CALLERYANA 'CHANTICLEER'	ORNAMENTAL PEAR	36" BOX	MEDIUM	
	PODOCARPUS GRACILIOR	FERN PINE	24" BOX	LOW	
	RHUS LANCEA	AFRICAN SUMAC	36" BOX	LOW	
	TRISTANIA CONFERTA	BRISBANE BOX	24" BOX	MEDIUM	
	TRISTANIOPSIS LAURINA	WATER GUM	36" BOX	MEDIUM	
	ULMUS PARVIFOLIA 'TRUE GREEN'	CHINESE EVERGREEN ELM	36" BOX	MEDIUM	
	CERCIS OCCIDENTALIS	WESTERN REDBUD	36" BOX	LOW	+
	SALIX SPP.	WILLOW	36" BOX	MEDIUM	+

SHRUBS

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	WUCOLS	BAY AREA FRIENDLY
	AGAPANTHUS AFRICANUS 'BLUE'	LILY OF THE NILE	1 GAL	MEDIUM	
	ARCTOSTAPHYLOS SPP.	MANZANITA	5 GAL	LOW	+
	ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBUSH	5 GAL	LOW	+
	BUXUS M. JAPONICA 'WINTER GEM'	JAPANESE BOXWOOD	1 GAL	MEDIUM	
	CALAMAGROSTIS X ACUTIFOLIA 'KARL FOERSTER'	FEATHER REED GRASS	5 GAL	MEDIUM	+
	CALLISTEMON VIMINALIS 'LITTLE JOHN'	'LITTLE JOHN' LEMON BOTTLEBRUSH	1 GAL	MEDIUM	
	CAREX TUMULICOLA	FOOTHILL SEDGE	1 GAL	MEDIUM	+
	CEANOOTHUS SPP.	CALIFORNIA LILAC	5 GAL	LOW	+
	CHONDROPETALUM TECTORUM	CAPE RUSH	5 GAL	MEDIUM	
	CISTUS HYBRIDUS	WHITE ROCK ROSE	5 GAL	LOW	+
	CORNUS SERICEA 'BAILEY'	RED TWIG DOGWOOD	15 GAL	MEDIUM	+
	DIANELLA TASMANICA 'VARIEGATA'	VARIEGATED FLAX LILY	1 GAL	MEDIUM	
	DIETES BICOLOR	AFRICAN IRIS	5 GAL	LOW	
	DIETES VEGETA 'VARIEGATA'	VARIEGATED FORTNIGHT LILY	5 GAL	LOW	
	DODONAEA VISCOSA 'SARATOGA'	PURPLE HOPSEED BUSH	5 GAL	LOW	
	ERIOGONUM SPP.	BUCKWHEAT	1 GAL	LOW	+
	GREWIA OCCIDENTALIS	GREWIA	5 GAL COLUMNAR	MEDIUM	
	HELICTOTRICHON SEMPERVIRENS	BLUE OAT GRASS	1 GAL	LOW	
	HEMEROCALLIS 'LEMON YELLOW'	HERMEROCALLIS	5 GAL	MEDIUM	
	HETEROMELES ARBUTIFOLIA	TOYON	5 GAL	LOW	+
	JUNCUS PATENS	JUNCUS	1 GAL	MEDIUM	+
	LANTANA SPP.	LANTANA	5 GAL	LOW	+
	LAVANDULA SPP.	LAVENDER	5 GAL	LOW	+
	LIGUSTRUM J. 'TEXANUM'	TEXAS PRIVET	5 GAL	MEDIUM	
	LIRIOPE 'SUNPROOF'	LIRIOPE	1 GAL	MEDIUM	
	LEYMUS CONDENSATUS 'CANYON PRINCE'	GIANT WILD RYE	5 GAL	LOW	+
	MIMULUS AURANTIACUS	STICKY MONKEYFLOWER	1 GAL	LOW	+
	MUHLENBERGIA CAPILLARIS	PINK MUHLY	1 GAL	LOW	+
	MUHLENBERGIA RIGENS	DEER GRASS	1 GAL	LOW	+
	NANDINA DOMESTICA 'GULF STREAM'	DWARF HEAVENLY BAMBOO	1 GAL	LOW	
	PENNISETUM SETACEUM 'EATON CANYON'	PURPLE FOUNTAIN GRASS	1 GAL	MEDIUM	
	PHLOMIS FRUTICOSA	JERUSALEM SAGE	5 GAL	LOW	+
	PHORMIUM TENAX 'ATROPUREUM'	NEW ZEALAND FLAX	15 GAL	LOW	
	PHORMIUM TENAX 'DUET'	NEW ZEALAND FLAX	5 GAL	LOW	
	PHORMIUM TENAX 'MAORI QUEEN'	NEW ZEALAND FLAX	5 GAL	LOW	
	PITTOSPORUM TOBIRA 'VARIEGATA'	VARIEGATED TOBIRA	5 GAL	LOW	
	PITTOSPORUM TOBIRA 'WHEELER'S DWARF'	DWARF TOBIRA	1 GAL	LOW	
	PODOCARPUS MACROPHYLLUS 'MAKI'	SHRUBBY YEW PINE	5 GAL COLUMNAR	MEDIUM	
	POLYSTICHUM MUNIUM	WESTERN SWORD FERN	1 GAL	MEDIUM	+
	RHAMNUS CALIFORNICA	COFFEEBERRY	5 GAL	LOW	+
	RHAPIOLEPIS INDICA 'SPRING RAPTURE'	INDIAN HAWTHORNE	5 GAL	LOW	
	TAGETES LEMMONII	MEXICAN BUSH MARIGOLD	1 GAL	LOW	+
	VIBURNUM TINUS 'SPRING BOUQUET'	COMPACT LAURISTINUS	5 GAL	MEDIUM	

VINES AND ESPALIERS

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	WUCOLS	BAY AREA FRIENDLY
	CLYTOSTOMA CALLISTEGIOIDES	LAVENDER TRUMPET VINE	5 GAL STAKED	MEDIUM	+
	HARDENBERGIA VIOLACEA	LILAC VINE	5 GAL STAKED	MEDIUM	+
	TRACHELOSPERMUM JASMINOIDES	STAR JASMINE	5 GAL STAKED	MEDIUM	
	VITIS CALIFORNICA	CALIFORNIA WILD GRAPE	5 GAL STAKED	LOW	+
	WISTERIA SPP.	WISTERIA	5 GAL STAKED	MEDIUM	+

GROUNDCOVERS

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE / SPACING	WUCOLS	BAY AREA FRIENDLY
	ARCTOSTAPHYLOS EDMUNDSII	SUR MANZINITA	1 GAL / 6" O.C.	LOW	+
	BACCHARIS PILULARIS	DWARF COYOTE BRUSH	1 GAL / 3" O.C.	LOW	
	CAREX PANSA	PACIFIC DUNE SEDGE	1 GAL / 2" O.C.	LOW	+
	CAREX TUMULICOLA	WESTERN SEDGE	1 GAL / 2" O.C.	MEDIUM	+
	CEANOOTHUS GRISEUS 'HORIZONTALIS'	CREEPING CALIFORNIA LILAC	1 GAL / 4" O.C.	LOW	+
	FESTUCA IDAHOENSIS	IDAHO FESCUE	1 GAL / 2" O.C.	LOW	+
	FESTUCA RUBRA	RED FESCUE	1 GAL / 2" O.C.	LOW	+
	LANTANA SPP.	LANTANA	1 GAL / 6" O.C.	LOW	+
	MAHONIA AQUIFOLIUM	OREGON GRAPE	1 GAL / 5" O.C.	LOW	
	MARATHON IE	TURF	SOD IN ROLLS	HIGH	
	NASSELLA PULCHRA	PURPLE NEEDLEGRASS	1 GAL / 2" O.C.	LOW	+

BAY FRIENDLY LANDSCAPE PRACTICES & INCORPORATION

- ALL SHRUB AND GROUND COVER AREAS (WITH SLOPES LESS THAN 2:1) SHALL RECEIVE A 3" LAYER OF MULCH. SEE PLANTING SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- SOIL TO BE AMENDED WITH QUALITY COMPOST PER SOILS REPORT RECOMMENDATIONS SUCH THAT ORGANIC MATTER IS A MINIMUM OF 3.5% BY DRY WEIGHT OR 1" OF QUALITY COMPOST.
- DURING LANDSCAPE CONSTRUCTION REDUCE AND RECYCLE AT LEAST 50% OF THE LANDSCAPE WASTE.
- PRUNING TO REMOVE DEAD GROWTH AND TO PROMOTE POSITIVE PLANT GROWTH STRUCTURE.
- NO PLANTS LISTED BY CAL-IPC AS BEING INVASIVE WITHIN THE BAY AREA ARE TO BE USED.
- 75% OF PLANTS (LESS TURF) TO BE CALIFORNIA NATIVE, MEDITERRANEAN OR CLIMATE ADAPTED
- NO MORE THAN 25% OF TOTAL LANDSCAPE AREA IS TO BE IRRIGATED AS TURF, WITH SPORT AND MULTIPLE USE FIELDS EXEMPT.
- IRRIGATION CONTROLLER TO BE WEATHER BASED, AUTOMATIC, AND INCLUDE A MOISTURE AND/OR RAIN SENSOR SHUTOFF.
- SPRINKLER AND SPRAY HEADS ARE NOT SPECIFIED FOR AREAS LESS THAN 8' WIDE.

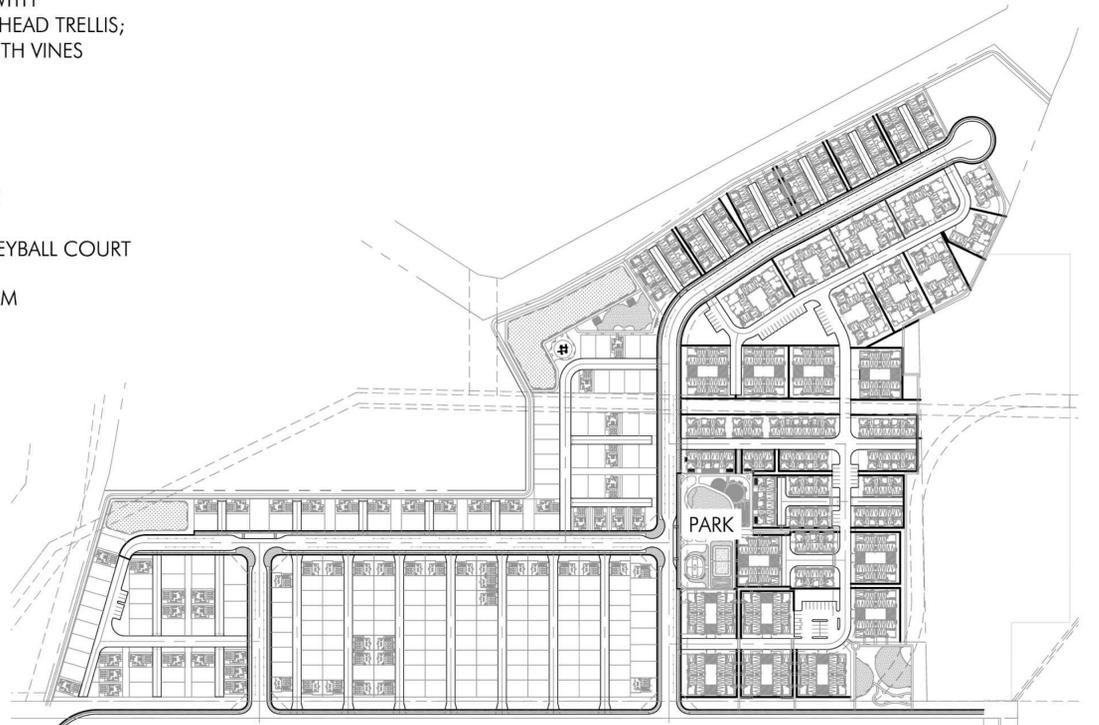
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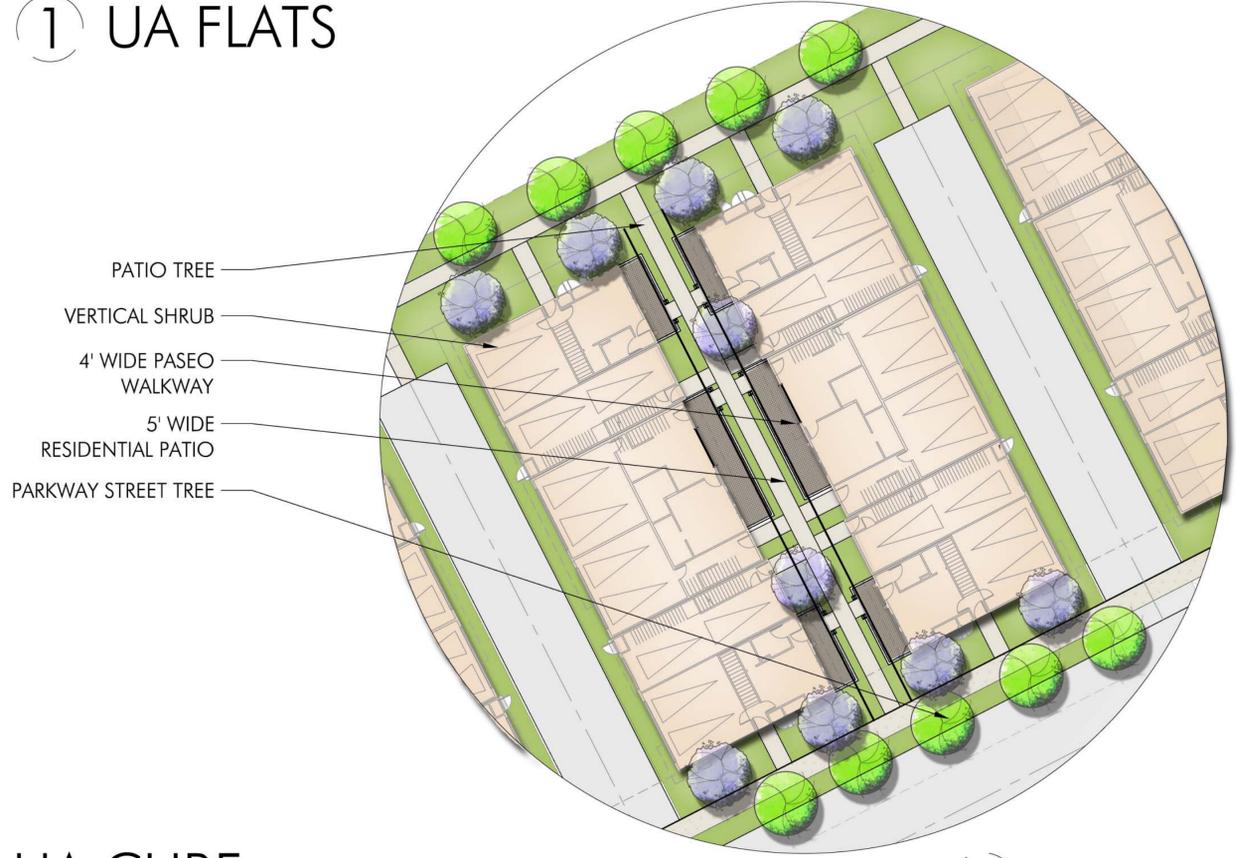
- LARGE PARK TREES
- PERIMETER TREES
- OUTDOOR WORKOUT EQUIPMENT
- PARKWAY BULB OUT
- 7' WIDE INNER WALKWAY
- 3' HIGH BERM
- BACK TO BACK BASKETBALL HOOPS
- SHADE TREE
- PARKWAY STREET TREES
- 4' WIDE SIDEWALK

- BENCH - DUMOR 460-60RB
- SWINGS
- LARGE TOTLOT AGES 5-12 WITH RUBBERIZED SAFETY SURFACE
- OVERHEAD FABRIC SHADE STRUCTURE
- ENHANCED PAVING
- RAISED PLANTERS
- PICNIC TABLE - DUMOR 464-60RB
- RESIDENTIAL PATIOS WITH ENHANCED PAVING
- BBQ AREA WITH STEEL OVERHEAD TRELLIS; PLANTED WITH VINES
- SHADE TREE
- SAND VOLLEYBALL COURT
- 3' HIGH BERM
- PATIO TREE

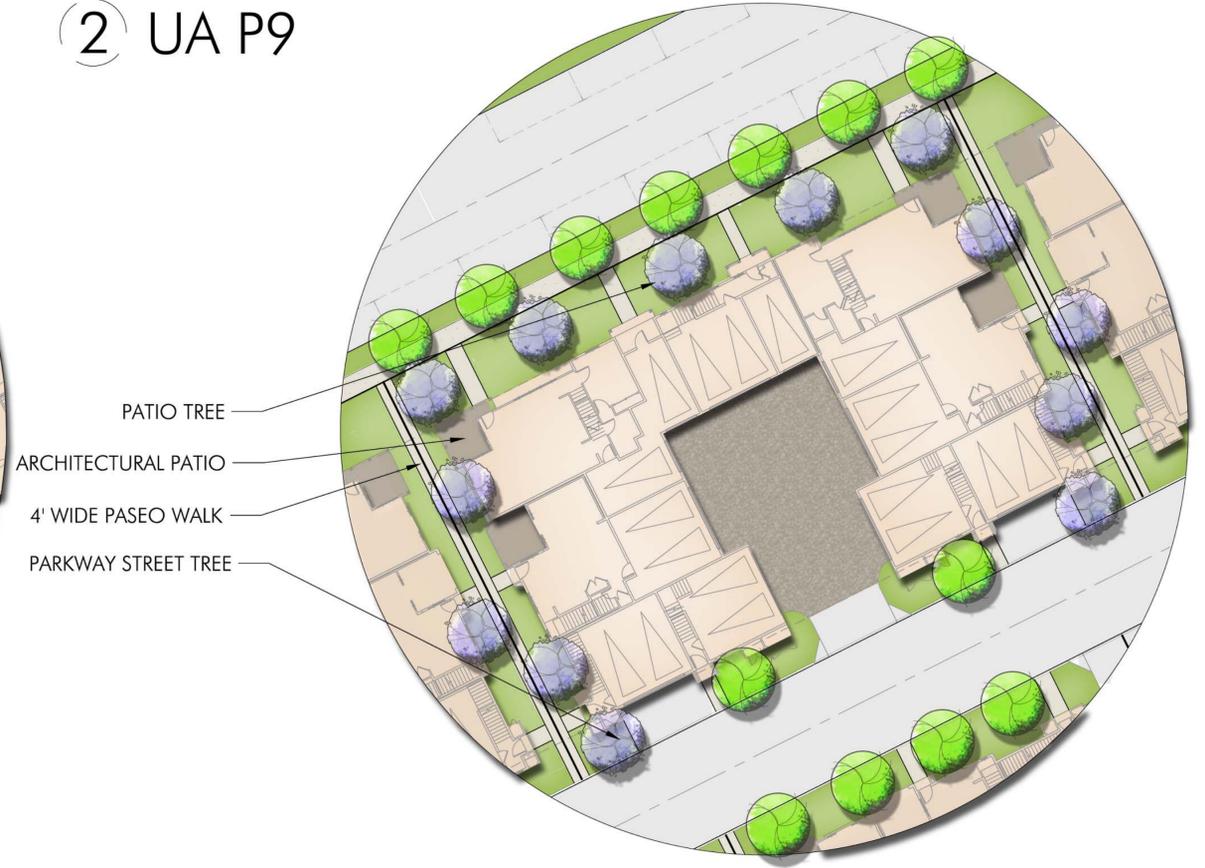


KEY MAP NTS

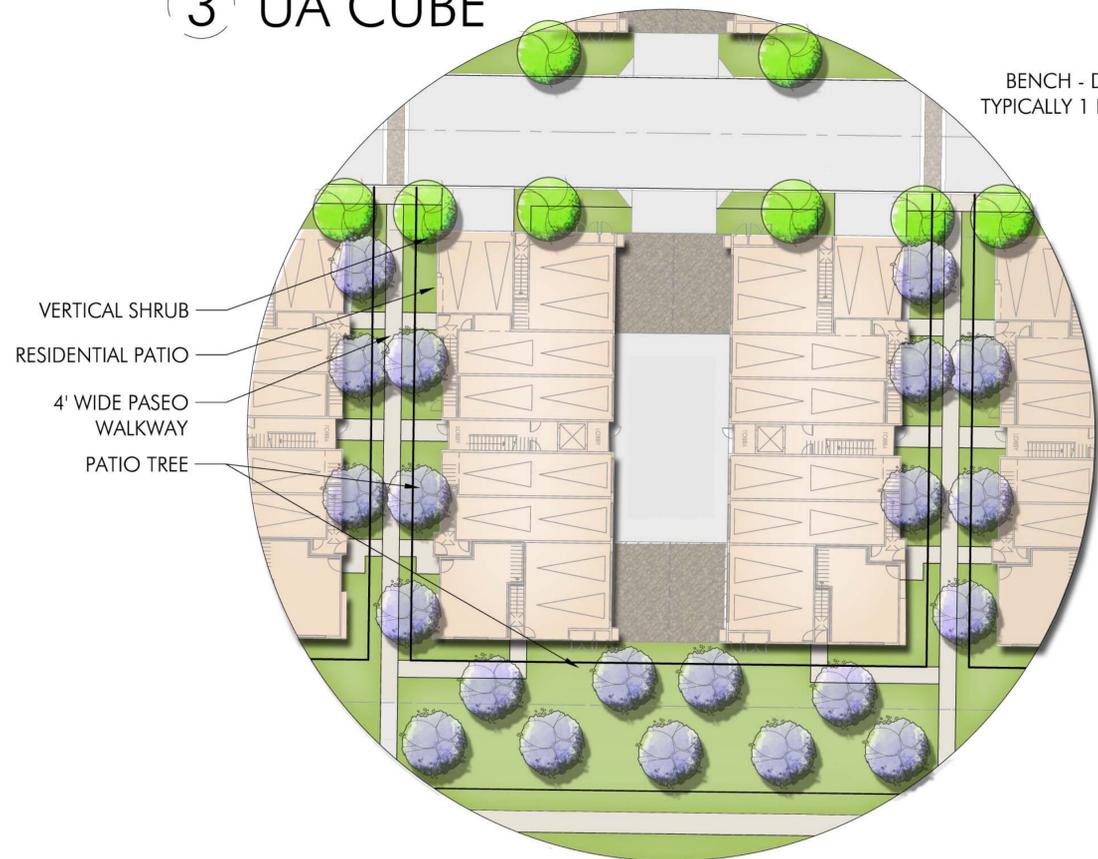
1 UA FLATS



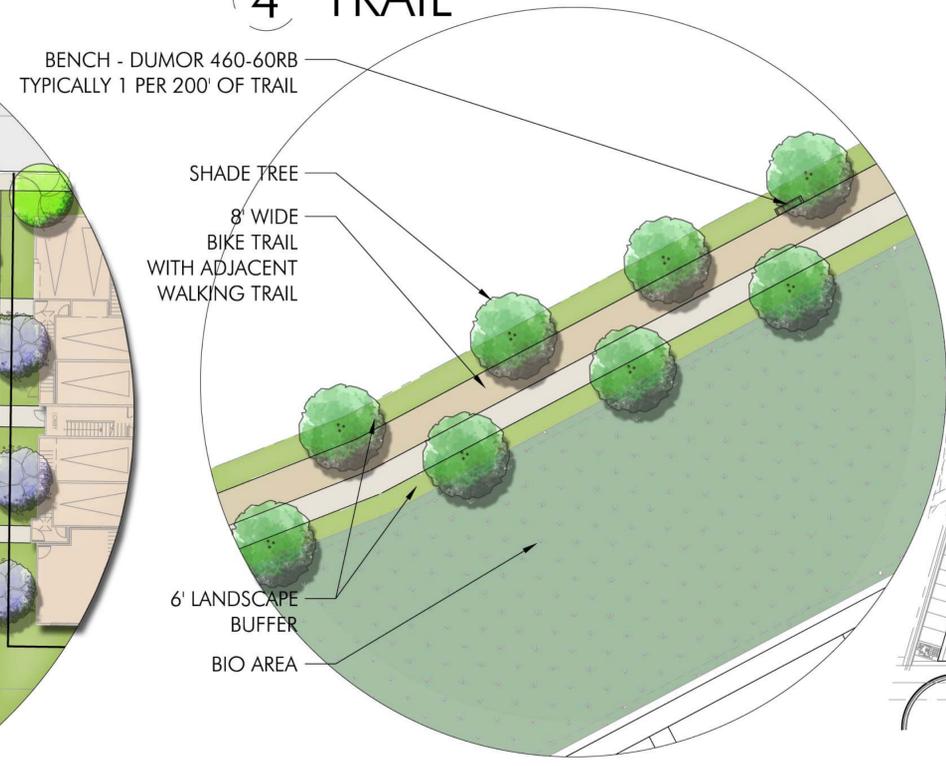
2 UA P9



3 UA CUBE



4 TRAIL



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5 PARCEL D PARK

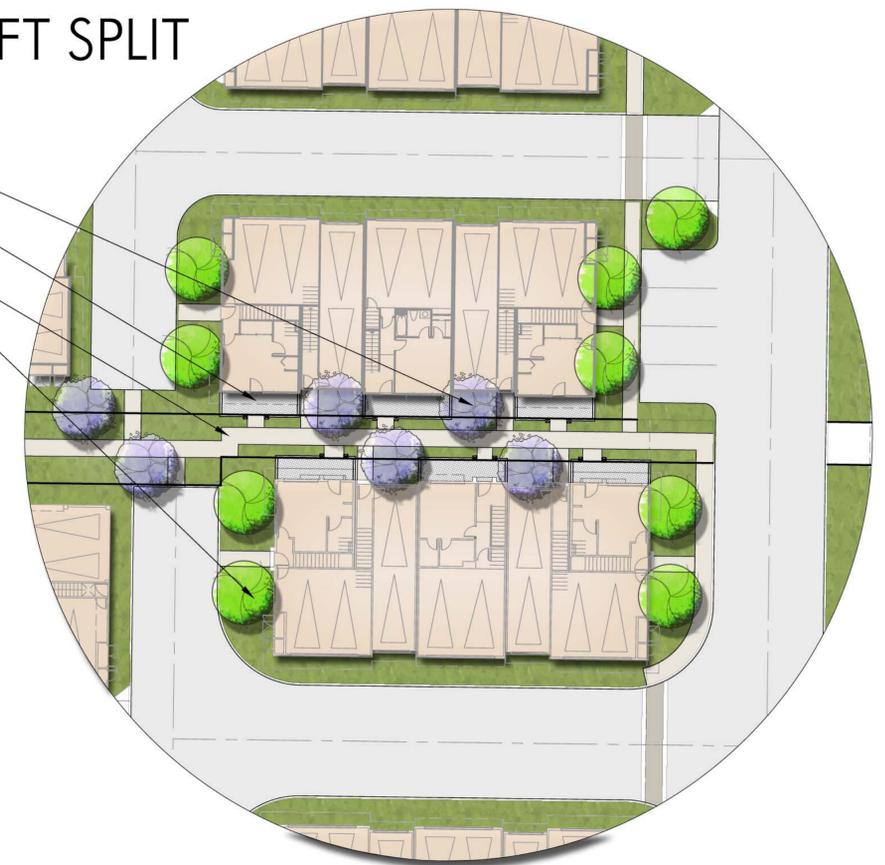
- BIO AREA
- STEEL OVERHEAD TRELLIS; PLANTED WITH VINES
- 5' WIDE PARK WALKWAY TYPICAL
- BENCH - DUMOR 460-60RB
- TOT-LOT AGES 2-5 WITH SAFETY SURFACING



6 UA LOFT SPLIT

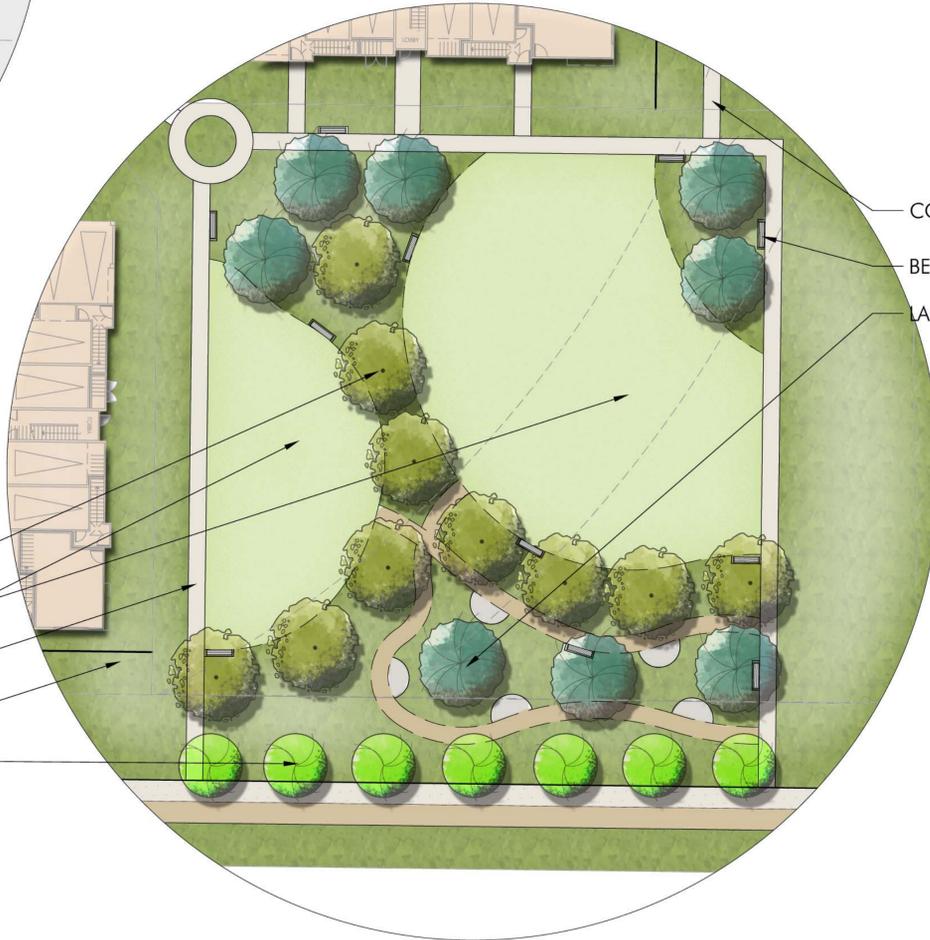
- PATIO TREE
- PATIO WITH ENHANCED PAVING
- 4' WIDE PASEO WALK
- PARKWAY STREET TREE

STEEL ENTRY OVERHEAD TRELLIS; PLANTED WITH VINES

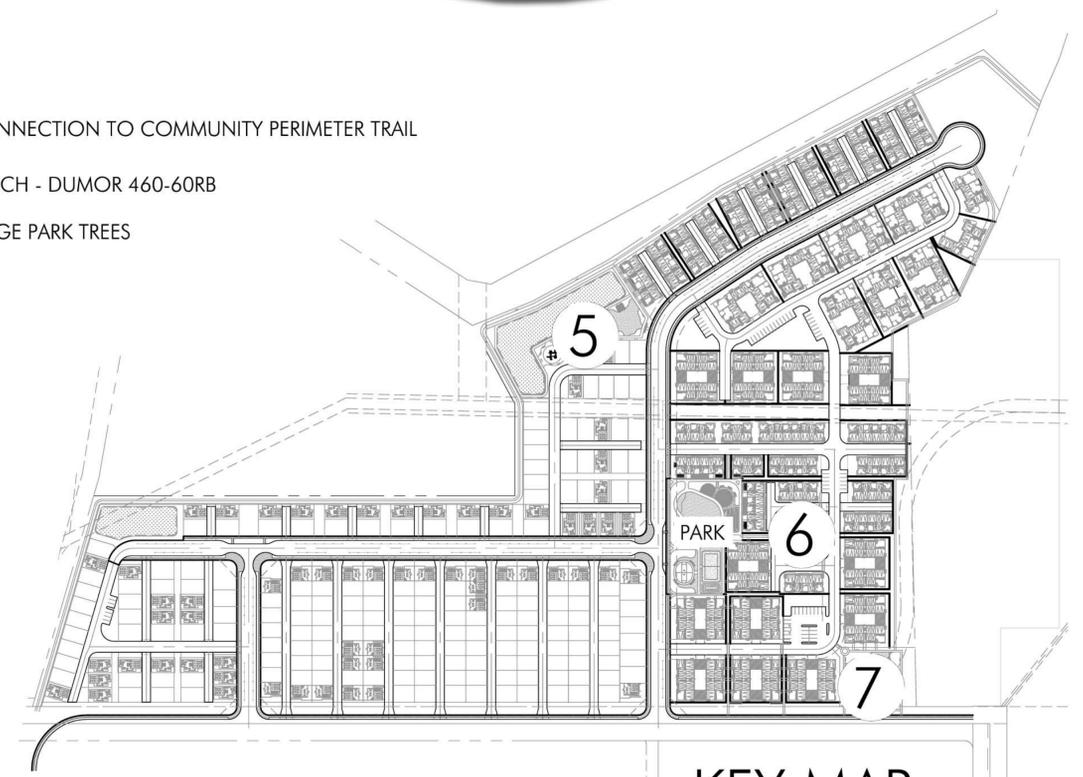


7 PARCEL B PARK

- SHADE TREES
- OPEN PLAY TURF AREA
- 4' WIDE WALKWAY
- DECOMPOSED GRANITE WALKING PATH WITH EXERCISE STATIONS
- STREET TREE



- CONNECTION TO COMMUNITY PERIMETER TRAIL
- BENCH - DUMOR 460-60RB
- LARGE PARK TREES



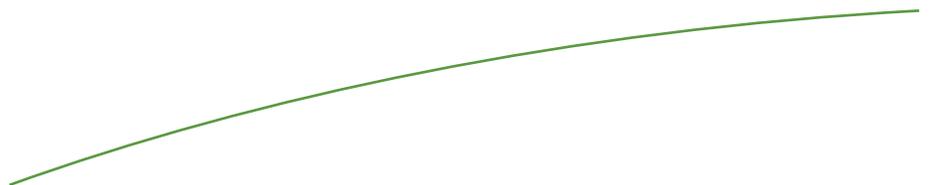
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Appendix C

VISUAL IMPACT ASSESSMENT
MEMORANDUM



July 27, 2015

DAT-02

To: Mr. Terrence Grindall, Director
Community Development Department
City of Newark
37101 Newark Blvd.
Newark, CA

Subject: Supplemental Aesthetics and Visual Impact Assessment Memorandum – Gateway Station West Project, Newark, CA

Dear Mr. Grindall:

HELIX Environmental Planning, Inc. (HELIX) is pleased to submit this aesthetics analysis and visual impact assessment memorandum (VIA memo) for the proposed Gateway Station West Project in Newark, CA hereinafter referred to as "Project." This VIA memo was prepared by HELIX to assess the degree to which proposed Project features could modify scenic resources and alter the existing visual character of the site and/or surroundings in support of the Project Supplemental Environmental Impact Report (SEIR). We have reviewed the Newark General Plan, the Dumbarton Transit Oriented Development (TOD) Specific Plan FEIR, proposed Vesting Tentative Map, Project applicant's landscape plans, and other relevant documents such as the San Francisco Bay Trail Plan. In addition, Senior HELIX staff experienced in visual impact assessment visited the Project site and the surrounding area, making notes and taking the photographs included in this VIA memo.

The methodology used in this supplemental visual impact assessment generally follows the guidelines outlined in the publication "*Visual Impact Assessment for Highway Projects*" Federal Highway Administration (FHWA), March 1981 and current Caltrans guidelines for visual impact assessment. Mitigation measures and/or design features are identified to reduce and avoid aesthetics impacts, as applicable.

Project Description

The proposed Project includes the development of 589 single- and multi-family residential units on approximately 41 acres of the approximately 54.5-acre site. A total of up to 321 single family units and 268 multi-family units are proposed for construction. The proposed residential development is consistent with the approved Specific Plan area Low-density Residential (LDR), Medium-density Residential (MDR), and Medium/High-density Residential (MHDR) land use designations and zoning codes. The remaining approximately 13.5 acres will not be developed and will be retained as open space. Additionally, off-site improvements will include roadway improvements to adjacent or nearby portions of Hickory Street, 'A' Avenue and Enterprise Drive, as well as a replacement culvert near the southwestern corner of the site.

Improvements along the noted roadways would include the addition of travel lanes, curb and gutter, sidewalks and landscaping.

All improvements along Hickory Street would remain within the existing 80-foot wide ROW that is partially located outside of the project site, while improvements along Enterprise Drive and 'A' Avenue would be within proposed 90-foot and 56-foot wide ROW corridors, respectively. The culvert replacement would encompass an area of approximately 0.1 acre, with roughly half of this located off-site, and would entail replacement of an existing culvert with an 18-foot long, 8-foot wide and 4-foot deep single-box culvert (along with related facilities, such as headwalls and guardrails, and minor recontouring/revegetating disturbed areas).

Project Setting

The proposed Project site is located in the City of Newark southwest of Highway 84 and Thornton Avenue, and is further described as Parcel 1 of Parcel Map 9837. The approximately 54.5-acre project site is bounded by Hickory Street on the east and solar salt ponds on the west. Enterprise Drive (formerly Wells Ave) terminates near the northeast corner of the property. The property is bounded by vacant industrial land on the north and vacant undeveloped land on the south. Construction of residential development associated with the Dumbarton TOD Specific Plan is underway to the east of the project site, east of Hickory Street and south of Enterprise Drive (Figure 1, Regional Location Map).

The Project site is generally located in a largely industrial area, with open space and residential uses in the vicinity. To the north of the site is the former FMC Corporation facility and the existing Union Pacific Railroad corridor, to the east is the former Ashland Chemical Company and Torian project, to the south is the Plummer Creek Wetland Mitigation Bank, and to the west are solar salt ponds.

The Project site is within the Dumbarton TOD Specific Plan area. The Specific Plan area encompasses approximately 233 acres in the vicinity of the Union Pacific Railroad corridor, which is also the future Dumbarton Rail Corridor (DRC). The purpose of the Dumbarton TOD Specific Plan is to facilitate the development of a new neighborhood around a train station planned separately as part of the Dumbarton Rail Service (DRS) Project.

Existing Visual Character

The proposed Project site is disturbed and primarily vacant with the exception of a dog training facility and a police firing range located in the southeastern section of the site. In general, the Project site's existing visual character is primarily large, open, expansive, weedy fields with some scattered seasonal wetlands. There are a few existing Eucalyptus trees on site at the dog training facility as shown in Site Photos 7 and 8 and a few scattered boulders on site. However, neither of these features adds any substantial aesthetic value.

There is a minor amount of topographic change on the Project site with the small raised hill feature visible in Site Photo 2. Near the top of that hill there is an open graded area and views to the Don Edwards San Francisco Bay National Wildlife Refuge (NWR) in the distance as shown in Site Photo 3. At the highest point of the hill there are views to the west of the solar salt ponds as shown in Site Photo 4.

Site Photos (Figure 2 depicts the Site Photo Locations)



Photo 1 – Enterprise Drive looking south



Photo 2 – Looking southwest towards hill



Photo 3 – Looking northwest towards NWR



Photo 4 Looking southwest towards salt ponds



Photo 5 – Near Hickory Street looking southwest



Photo 6 - Near Hickory Street looking south



Photo 7 – Looking north to dog training facility



Photo 8 – Near dog training facility looking north



Photo 9 – Plummer Creek Wetland Mitigation Bank



Photo 10 – Willow Street at Central Avenue



Photo 11 – Newark Slough Trail



Photo 12 – Don Edwards SF Bay Wildlife Refuge

Assessment of the Potential Visual Impacts

The previous environmental documents associated with the Project including the Dumbarton TOD Specific Plan Draft (and Final) EIR did not find significant visual impacts in part because there are neither large numbers of sensitive viewers nearby or many view opportunities. The nearest residences are approximately 0.5 mile away to the northeast on Aleppo Drive off of Enterprise Drive and that residential development has views oriented inward, not in the direction of the Project. While off site roadway improvements would be visible from Willow Street and Enterprise Drive, these improvements consist of new curbs, gutters, sidewalks, a culvert replacement and landscaping consistent with or an improvement on the existing visual character.

Although the Project site is in a disturbed condition within an existing industrial area, it is also immediately adjacent to the existing Plummer Creek Mitigation Bank and in the vicinity of the San Francisco Bay Trail, the Don Edwards San Francisco Bay NWR, the Newark Slough, and further afield, San Francisco Bay. The previous studies may not have fully addressed the fact that Project features would potentially be visible from observation points associated with these nearby existing and proposed scenic and recreational resources, in particular, the proposed addition to the San Francisco Bay Trail and the existing Newark Slough Trail at the San Francisco Bay NWR. Views from the Newark Slough Trail would have Project features visible as a background to views of the slough. The Project would not block vistas or views nor substantially degrade the quality of existing views within the San Francisco Bay NWR.

The Project includes a proposed new section of the San Francisco Bay Trail (Bay Trail) that will eventually connect to other trail sections within the Don Edwards San Francisco Bay NWR and the Plummer Creek Mitigation Bank (Site Photo 9 above). A 20' wide easement along the western and southern boundaries of the Project will contain an 8' wide paved section of the proposed new Bay Trail, with two 2' wide shoulders and an additional 4' wide landscaped buffer on either side. Benches will be provided approximately every 200' liner feet along the Bay Trail.

In addition, the project includes three types of fencing/barriers, with the proposed locations shown on Figure 3 and descriptions as follow. The approximately 500-foot long easternmost section along the southern Project boundary (Segment A) will be a 4-foot high masonry wall topped with a 4-foot high (8-foot total height) black colored woven wire mesh (not chain link) in a square or rectangular pattern. The woven wire spacing will be no tighter than 3 inches. The 2-inch square metal tubing posts will be spaced 8 to 10 feet on center, and topped with a continuous 2-inch square metal tubing rail. Fence posts and rails will also be black colored. The entire western section of the Project boundary adjacent to the solar salt ponds (Segments B through D) will consist of 6-foot high woven wire mesh panels in a square or rectangular pattern, with 3-inch minimum spacing for the top 3 feet and 1/2-inch mesh spacing on the lower 3 feet. Two-inch diameter posts will be spaced approximated 8 to 10 feet on center. The top rail and mid rail will also be 2-inch diameter. All woven wire mesh panels, posts, and railings will be black colored. The approximately 1,500-foot long section of the proposed Bay Trail inside the Project boundary (Segment E) will have a 4-foot high precast concrete "split rail" fence along the eastern and southern sides. The split rail fencing will have three rails and posts spaced 8 feet on center. All posts and rail components will be textured to simulate wood grain and sand integral color. All three types of fencing/barriers will allow visual access above a 4-foot viewer height.

In general, the proposed Bay Trail section as planned will result in a positive aesthetic feature with the landscape improvements in the buffer areas that include trees. Other planned Project landscape improvements are consistent with the City of Newark General Plan goals and policies for aesthetic resources and the Dumbarton TOD Specific Plan design guidelines. While the overall character of the site would change from primarily open and sparsely vegetated to a more urban and developed character, the Project design combined with the planned landscape improvements will not substantially degrade the visual character of the site or the surroundings.

Finally, HELIX has reviewed the available documents to assess the potential for the Project to produce new sources of light or glare and the Project's consistency with relevant City of Newark and Dumbarton TOD Specific Plan design guidelines. Adherence to the Specific Plan design guidelines including the provision that "All pole heights, spacing requirements and installation should comply with Newark Public Works Standard Specifications and Details" and "Use of low intensity and shielded lighting design to prevent light spillage..." would ensure that the Project will not produce significant new sources of light or glare.

Methods to Mitigate Adverse/Significant Visual Impacts

As no significant visual impact to aesthetic and visual resources as a result of the Project implementation have been identified, no mitigation is required.

Conclusions

The California Environmental Quality Act (CEQA) established that it is the policy of the state to take all action necessary to provide the people of the state "with enjoyment of *aesthetic* (emphasis added), natural, scenic, and historical environmental qualities" (California Public Resources Code Section 21001 [b]). According to Appendix G of the State CEQA Guidelines, a proposed Project would have a significant impact on the environment if it would (a) have a substantial adverse effect on a scenic vista; (b) substantially damage scenic resources, including trees, rock outcroppings, and historic buildings within a state scenic highway; (c) substantially degrade the existing visual character or quality of the site and its surroundings; or (d) create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

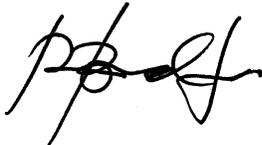
The Project would result in less than significant visual impacts per CEQA as none of the Appendix G thresholds has been met. Accordingly, no associated mitigation measures are required or recommended.

HELIX Visual Analyst Qualifications

The visual analyst is a California Registered Landscape Architect with 34 years professional experience in Visual Impact Assessment. He is the author and/or co-author of 20+ Visual Impact Assessment Technical Studies. He is an approved CEQA Consultant for Visual Resources and author of the current San Diego County Consultant Guidelines for use of Computer-aided Visual Simulations for CEQA Analysis.

Please let me know if you have any question about my findings, methodology used or recommendations made.

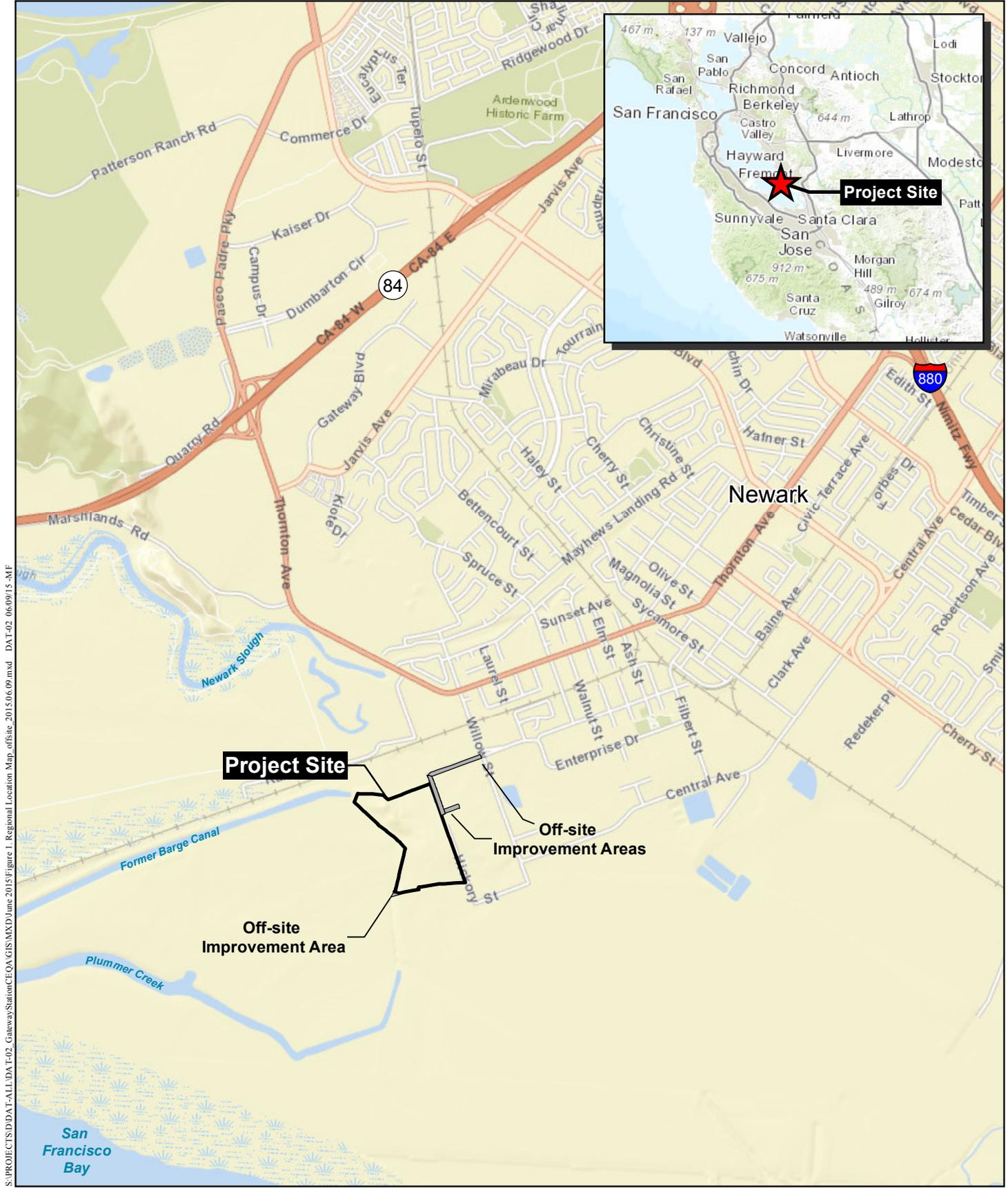
Sincerely,

A handwritten signature in black ink, appearing to read 'R. Brad Lewis', with a stylized flourish at the end.

R. Brad Lewis, ASLA, LEED AP BD+C
CA Registered Landscape Architect #2657

Attachments:

- Figure 1: Site and Vicinity Map
- Figure 2: Site Photo Locations
- Figure 3: Site Plan



S:\PROJECTS\DDAT-ALL\DAT-02_GatewayStation\CEQA\GIS\MXD\June 2015\Figure 1_Regional Location Map_offsite_2015.06.09.mxd DAT-02_06/09/15-MF

Base Map: USGS, ESRI 2014 Map Date: 06-09-2015

Site and Vicinity Map

GATEWAY STATION WEST

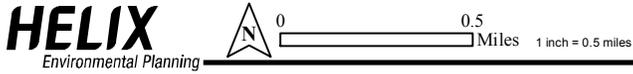


Figure 1

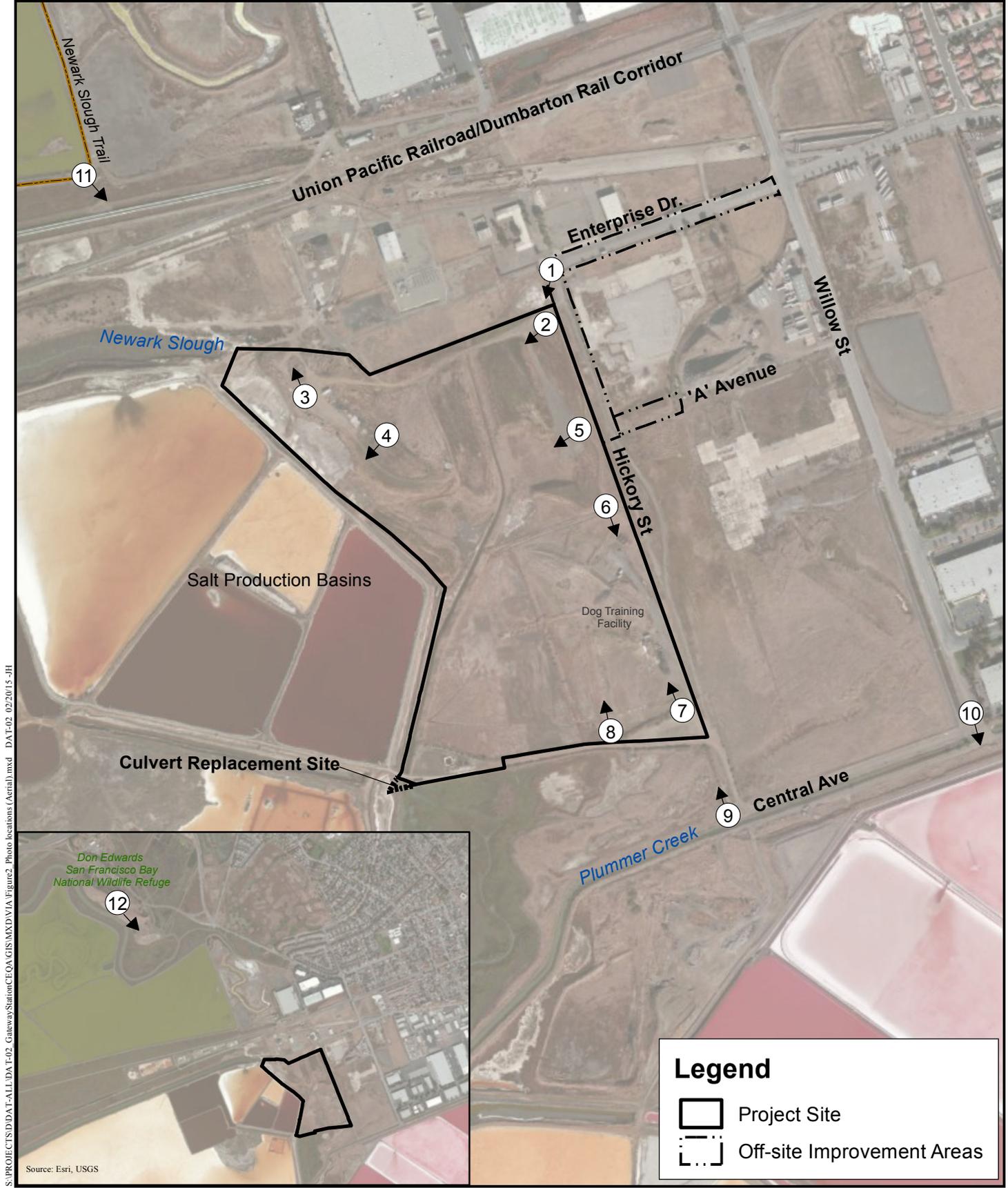
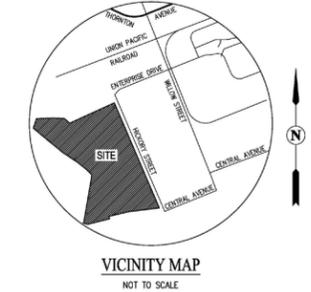
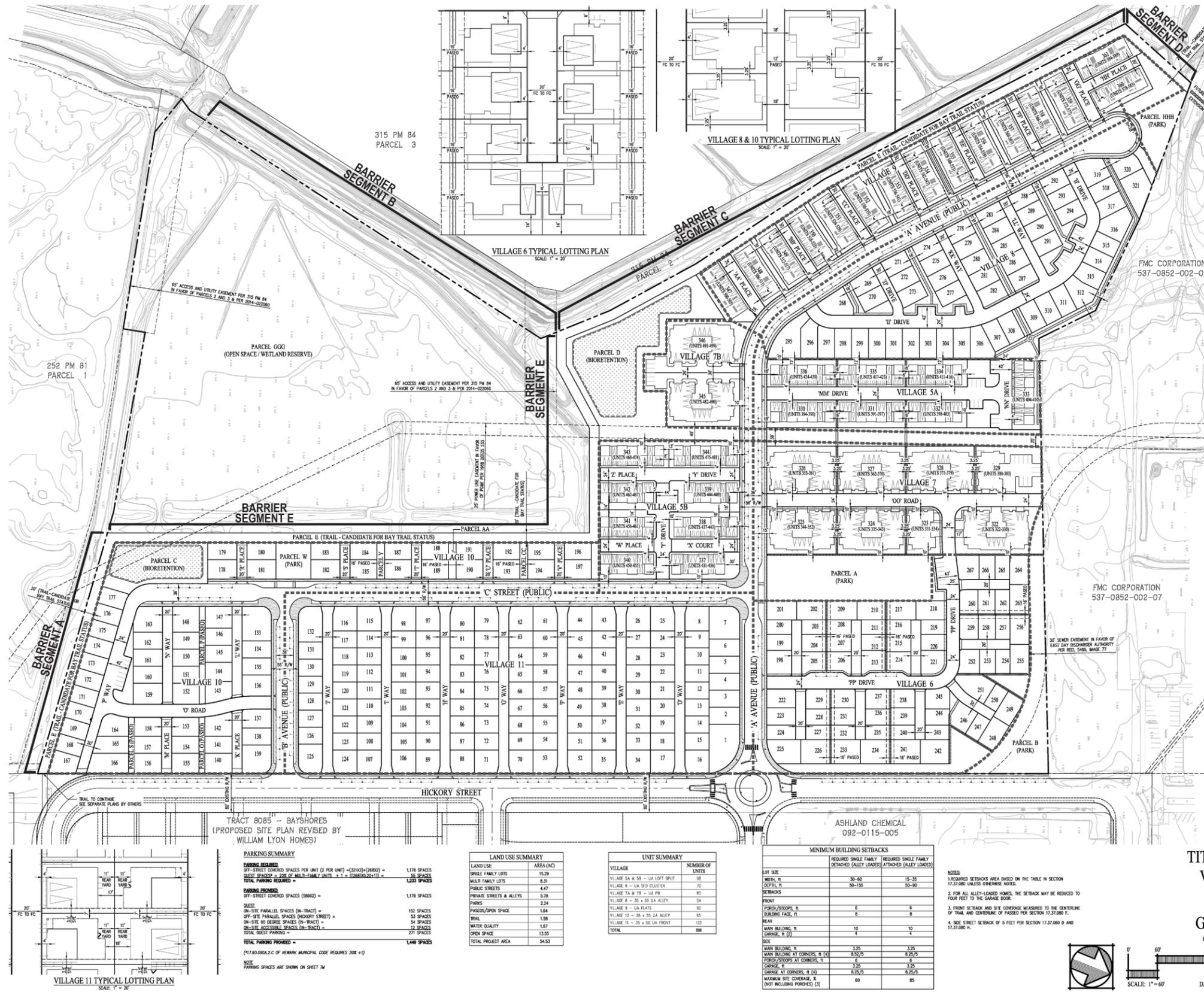


Photo locations noted in this figure correspond to all the photos contained in the Visual Impact Memo completed by HELIX (2015) for this project.

Site Photo Locations

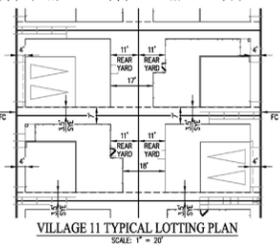
GATEWAY STATION WEST

\\sbartm\DC\vol4\PROJECTS\DD\DATA\DAT02_GatewayStation\CEQA\Figures\Tech_DAT\02_VStudies\Noise_DAT\02_01-28-2015_JH



GENERAL NOTES:

1. OWNER/DEVELOPER: DUMBARTON AREA 2, LLC
520 LA GONDA WAY, SUITE 102
DANVILLE, CA 94526
CONTACT: GLENN BROWN
(925) 362-3749
2. ENGINEER: CARLSON, BARBEE & GIBSON, INC.
2633 CAMINO RAMON, SUITE 350
SAN RAMON, CA 94583
CONTACT: GREG MILLER
(925) 866-0322
3. SOILS ENGINEER: BERLOGAR, STEVENS & ASSOCIATES
5587 SUNOL BOULEVARD
PLEASANTON, CA 94566
CONTACT: FRANK BERLOGAR
(925) 484-0220
(925) 846-9645 (FAX)
4. EXISTING USE: LIGHT INDUSTRIAL
5. SUBDIVISION AREA: DEVELOPABLE AREA: 54.53±
41.0±
6. NUMBER OF UNITS: 589 UNITS
7. THIS PROPERTY LIES IN THE JURISDICTION OF:
FIRE PROTECTION: CITY OF NEWARK FIRE PROTECTION DISTRICT
DOMESTIC WATER: ALAMEDA COUNTY COUNTY WATER DISTRICT
SANITARY SEWER: UNION SANITARY DISTRICT
STORM DRAIN WITHIN STREETS, LANES & PASEOS: CITY OF NEWARK (SDE)
STORM DRAIN WITHIN PRIVATE YARDS: PRIVATELY MAINTAINED BY HOMEOWNERS (PSDE)
GAS & ELECTRIC SERVICE: PACIFIC GAS & ELECTRIC
TELEPHONE SERVICE: AT&T
8. ROADWAYS AND PARCELS: UNLESS OTHERWISE NOTED (I.E. PUBLIC) ALL ROADWAYS AND PARCELS ARE TO BE MAINTAINED BY THE HOA ESTABLISHED WITH THE PROJECT. PUBLIC ACCESS EASEMENTS WILL BE DEDICATED OVER PARCEL E FOR PUBLIC USE.
9. PROPOSED LAND USE SUMMARY: SEE TABLE (THIS SHEET)
10. ASSESSORS PARCEL NUMBERS: 537-0852-009
537-0852-010
537-0852-011
11. BENCHMARK: CITY OF NEWARK OFFICIAL BENCHMARK NO. 62,
ALSO BEING AN ALAMEDA COUNTY BENCHMARK, THE TOP OF CURB AT
STORM WATER INLET AT THE NORTH-EAST CORNER OF THORNTON AVENUE
AT WILLOW STREET, ELEVATION TAKEN AS 11.39 (NAVD 88) (8.661 NAVD 29
PER CITY OF NEWARK RECORDS).
12. TOPOGRAPHY: PREPARED BY HJM GEOSPATIAL, INC. DATED MAY 2005
13. FLOOD ZONE: ZONED X AND AE
FLOOD INSURANCE RATE MAP (FIRM)
COMMUNITY PANEL NUMBER: 060009 0443 G
14. THIS PROJECT MAY BE BUILT IN PHASES AND MULTIPLE FINAL MAPS MAY BE FILED. A PHASING PLAN WILL BE PROVIDED TO THE CITY OF NEWARK PRIOR TO FINAL MAP APPROVAL.
15. LOTS 1 - 321 WILL BE RESIDENTIAL LOTS
LOTS 322 - 361 (UNITS 322-589) WILL BE CONDOMINIUM UNITS.
16. LOT DIMENSIONS AND AREAS ARE APPROXIMATE AND ARE ROUNDED TO THE NEAREST WHOLE NUMBER. EXACT DIMENSIONS AND AREAS WILL BE PROVIDED ON THE FINAL MAP
17. ALL BUILDINGS SHALL BE EQUIPPED WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 15.09.020.G OF THE NEWARK MUNICIPAL CODE.
18. GRADING SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL DESIGN.
19. ALL UTILITIES SHOWN ARE TO BE USED AS A GUIDE AND MAY CHANGE DURING FINAL DESIGN.



PARKING SUMMARY

PARKING REQUIRED:
OFF-STREET COVERED SPACES PER UNIT (2 PER UNIT) = (521)(2) = 1,042 SPACES
GUEST SPACES = ONE (2) MULTIFAMILY UNITS = 2 SPACES
TOTAL PARKING REQUIRED = 1,044 SPACES

PARKING PROVIDED:
OFF-STREET COVERED SPACES (DRINK) = 1,178 SPACES
GUEST SPACES = ONE (2) MULTIFAMILY UNITS = 2 SPACES
ON-SITE PARALLEL SPACES (IN-TRACT) = 153 SPACES
OFF-SITE PARALLEL SPACES (HICKORY STREET) = 53 SPACES
ON-SITE ACCESSIBLE SPACES (IN-TRACT) = 14 SPACES
TOTAL GUEST PARKING = 277 SPACES
TOTAL PARKING PROVIDED = 1,448 SPACES

(174.80) AREA 2.C. OF NEWARK MUNICIPAL CODE REQUIRES 20% (+)

NOTE: PARKING SPACES ARE SHOWN ON SHEET IV

LAND USE SUMMARY

LAND USE	AREA (AC)
SINGLE FAMILY LOTS	15.29
MULTI-FAMILY LOTS	8.31
PUBLIC SPACES	4.47
PRIVATE SPACES & ALLEYS	3.38
PARKS	2.24
PASEOS/OPEN SPACE	1.64
TRAIL	1.58
WATER QUALITY	1.67
OPEN SPACE	13.53
TOTAL PROJECT AREA	54.53

UNIT SUMMARY

VILLAGE	NUMBER OF UNITS
VILLAGE 5A & 5B - 1/2 UNIT SPLOT	98
VILLAGE 6 - 1/2 UNIT CLUSTER	72
VILLAGE 7A & 7B - 1/2 UNIT	80
VILLAGE 8 - 2 1/2 UNIT ALLEY	54
VILLAGE 9 - 1/2 UNIT	90
VILLAGE 10 - 1/2 UNIT ALLEY	60
VILLAGE 11 - 2 1/2 UNIT ALLEY	132
TOTAL	686

MINIMUM BUILDING SETBACKS

LOT SIZE	REQUIRED SINGLE FAMILY DETACHED (ALLEY LOADED)	REQUIRED SINGLE FAMILY ATTACHED (ALLEY LOADED)
LOT WIDTH, FT.	30-60	15-30
DEPTHS, FT.	30-100	30-90
FRONT		
PORCH/STOOPS, FT.	6	6
BUILDING FACE, FT.	6	6
REAR		
MAIN BUILDING, FT.	10	10
GARAGE, FT. (3)	4	4
SIDE		
MAIN BUILDING, FT.	3.25	3.25
MAIN BUILDING AT CORNERS, FT. (3)	8.25/5	8.25/5
PORCH/STOOPS AT CORNERS, FT.	3.25	3.25
GARAGE AT CORNERS, FT. (4)	8.25/5	8.25/5
MAXIMUM SITE COVERAGE, % (NOT INCLUDING PORCHES) (5)	60	85

NOTES:

1. REQUIRED SETBACK AREA BASED ON THE TABLE IN SECTION 17.07.000 UNLESS OTHERWISE NOTED.
2. FOR ALL ALLEY-LOADED HOMES, THE SETBACK MAY BE REDUCED TO FOUR FEET TO THE GARAGE DOOR.
3. FRONT SETBACK AND SITE COVERAGE MEASURED TO THE CENTERLINE OF TRAIL AND CENTERLINE OF PASEOS PER SECTION 17.07.000 F.
4. SIDE STREET SETBACK OF 5 FEET FOR SECTION 17.07.000 D AND 17.07.000 F.

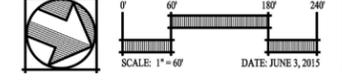
**TITLE SHEET AND SITE PLAN
VESTING TENTATIVE MAP
TRACT 8099
GATEWAY STATION WEST**

CITY OF NEWARK ALAMEDA COUNTY CALIFORNIA



Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS - SURVEYORS - PLANNERS
2633 CAMINO RAMON, SUITE 350
SAN RAMON, CALIFORNIA 94583
(925) 866-0322
www.cbgi.com

SHEET NO.
TM-1
OF 8 SHEETS

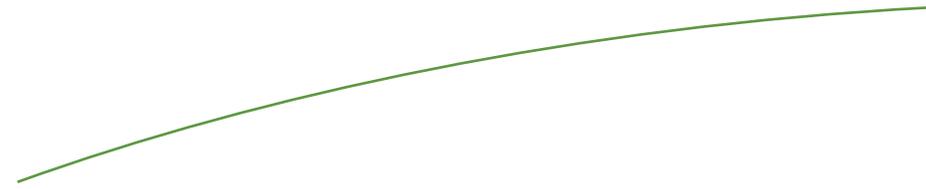


Source: Carlson, Barbee & Gibson, Inc. 2015



Appendix D

AIR QUALITY AND GREENHOUSE GAS
EMISSIONS



Gateway Station West Project

Air Quality and Greenhouse Gas Emissions
Technical Report

June 2015

Prepared for:
City of Newark
Community Development Department
37101 Newark Boulevard
Newark, CA 94560

Prepared by:
HELIX Environmental Planning, Inc.
11 Natoma Street, Suite 155
Folsom, CA 95630

**Air Quality and
Greenhouse Gas Emissions Technical Report**

for the

**Gateway Station West Project
City of Newark**

Prepared for:

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Community Development Department
37101 Newark Boulevard
Newark, CA 94560**

Prepared by:

**HELIX Environmental Planning, Inc.
11 Natoma Street, Suite 155
Folsom, CA 95630
HELIX Job No. DAT-02**

June 2015

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LIST OF ACRONYMS

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
A	inhalation absorption factor
AAQS	ambient air quality standard
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ADT	average daily trip
AEP	Association of Environmental Professionals
APCD	Air Pollution Control District
AQMP	air quality management plan
AT	Averaging Time
BAAB	Bay Area Air Basin
BAAQMD	Bay Area Air Quality Management District
BAU	business-as-usual
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emission Estimator Model
CAFE	Corporate Average Fuel Economy
Cair	annual average concentration
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CARE	Community Air Risk Evaluation Program
CBSC	California Building Standards Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEC	California Economic Commission
CEQA	California Environmental Quality Act
CFC	chlorofluorocarbon
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	CO ₂ -equivalent
C ₃ H ₄ O	acrolein
CH ₄	methane
CPF	Cancer Potency Factor
DBR	Daily Breathing Rate
DPM	diesel particulate matter
DRC	Dumbarton Rail Corridor
DRS	Dumbarton Rail Service

LIST OF ACRONYMS (cont.)

ED	Exposure Duration
EF	Exposure Frequency
EIR	Environmental Impact Report
EO	Executive Order
F	Fahrenheit
GHG	greenhouse gases
g/l	grams per liter
GWP	Global Warming Potential
HAP	Hazardous Air Pollutant
HFC	hydrofluorocarbon
HI	Hazard Index
HRA	health risk assessment
HQ	Hazard Quotient
IPCC	Intergovernmental Panel on Climate Change
kBTU	kilo British Thermal Units
kWh	kilowatt hours
lbs/day	pounds per day
LCFS	Low Carbon Fuel Standard
LDR	Low Density Residential
MDR	Medium Density Residential
MHDR	Medium/High Density Residential
MMT CO ₂ e	million metric tons of CO ₂ equivalent
mpg	miles per gallon
mph	miles per hour
MPO	metropolitan planning organizations
MT	metric tons
MTC	Metropolitan Transportation Commission
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NHTSA	National Highway Traffic Safety Administration
NOAA	National Oceanic and Atmospheric Administration
NO	nitrogen oxide
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides

LIST OF ACRONYMS (cont.)

O ₃	ozone
OAP	ozone attainment plan
OEHHA	Office of Environmental Health Hazard Assessment
Pb	lead
PFC	perfluorocarbon
PM	particulate matter
PM ₁₀	particulate matter less than 10 microns
PM _{2.5}	particulate matter less than 2.5 microns
ppb	parts per billion
ppm	parts per million
REL	Reference Exposure Level
ROG	reactive organic gases
RTP	Bay Area Regional Transportation Plan
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Community Strategy
SF ₆	sulfur hexafluoride
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SO _x	sulfur oxides
SP	service population
TACs	toxic air contaminants
TOD	Transit Oriented Development
URF	Unit Risk Factor
USEPA	United States Environmental Protection Agency
VMT	vehicle miles traveled
VOC	volatile organic compounds

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality and greenhouse gas (GHG) emission impacts associated with the proposed Gateway Station West Project (Project). The evaluation addresses the potential for criteria air pollutant and GHG emission impacts during the construction and operation of the Project.

The Project would result in emissions of criteria air pollutants and GHGs during construction and operation. Construction emissions include fugitive dust, heavy construction equipment, and workers commuting to and from the site. Construction activities are assumed to begin February 2016 and finish by March 2020. Consistent with the Dumbarton Transit Oriented Development (TOD) Specific Plan Program Environmental Impact Report (EIR), control measures to lower emissions during construction include, but are not limited to, low volatile organic compound (VOC) architectural coatings, fugitive dust controls, use of U.S. Environmental Protection Agency (USEPA) Tier 2 emissions compliant off-road equipment, and recycling or salvaging a minimum of 75 percent of construction debris. Impacts associated with emissions of VOCs, carbon monoxide (CO), sulfur oxides (SO_x), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and GHGs during Project construction would be less than significant. Mitigation Measure (MM) Air-1 would be required to reduce nitrogen oxide (NO_x) emissions to a less than significant level.

Operational emissions associated with the Project would include pollutants associated with vehicular traffic, solid waste disposal, water consumption, energy use, landscaping, and the use of consumer products. Project design features to lower operational emissions would include, but are not limited to, incorporating a low-water irrigation system, low-flow water fixtures, and exceeding current 2013 Title 24 energy efficiency standards by 20 percent. Emissions of all criteria pollutants during operation of the Project would not exceed the daily significance thresholds.

Operational emissions of GHGs for the Project are projected to be 4.0 metric tons (MT) of carbon dioxide equivalent (CO₂e) per service population (SP) per year. This level of emissions would not exceed the Bay Area Air Quality Management District's (BAAQMD's) screening threshold of 4.6 MT of CO₂e/SP/year. Thus, the Project would not exceed thresholds pertaining to either project-level or cumulative air quality or GHG impacts, and operational impacts would be less than significant.

A health risk assessment was conducted for operations period exposure of new residents to toxic air contaminants (TACs) resulting from the future Dumbarton Rail Transit station. Effects were found to be less than significant. Based on the information from the Dumbarton TOD Specific Plan EIR, the potential for the formation of CO hot spots at congested intersections would be less than significant. An evaluation of potential odors from Project operations and construction indicated that associated impacts would be less than significant.

The Project would be consistent with the City's land use designation for the site and would not impede the implementation of the Clean Air Plan.

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1.0 PROJECT DESCRIPTION

1.1 PROJECT LOCATION

The proposed Project is situated within the City of Newark (City) in southwestern Alameda County, California. The project site is located southwest of Highway 84 and Thornton Avenue. The approximately 54.5-acre project site is bounded by Hickory Street on the east and solar salt basins on the west. Enterprise Drive (formerly Wells Avenue) terminates near the northeast corner of the property. The property is bounded by vacant industrial land on the north and vacant undeveloped land on the south. Refer to Figure 1, *Site and Vicinity Map*.

1.2 EXISTING SITE CONDITIONS

The Project site is generally located in a largely industrial area, with open space and residential uses in the vicinity. To the north of the site is the former FMC Corporation facility and the existing Union Pacific Railroad corridor, to the east is the former Ashland Chemical Company and Torian facility, to the south is the Plummer Creek Wetland Mitigation Bank, and to the west are the Cargill solar salt basins.

The proposed Project site is within the Dumbarton TOD Specific Plan area, and the Environmental Impact Report (EIR) for the Specific Plan (State Clearinghouse No. 2010042012) serves as the foundation document for subsequent projects proposed under the program. The Specific Plan area encompasses approximately 233 acres in the vicinity of the Union Pacific Railroad corridor, which is also the future Dumbarton Rail Corridor (DRC). The purpose of the Dumbarton TOD Specific Plan is to facilitate the development of a new neighborhood around a train station planned separately as part of the Dumbarton Rail Service (DRS) Project. The DRS is still under development and will undergo separate environmental analysis in accordance with the California Environmental Quality Act (CEQA). The proposed Gateway Station West Project is being analyzed in light of the prior certified Dumbarton TOD Specific Plan EIR as the next step in the City's CEQA process for implementation of projects within the approved Dumbarton TOD Specific Plan. Refer to Figure 2, *Aerial Map*, for an aerial photograph of the Project site and vicinity.

1.3 PROJECT DESCRIPTION

The proposed Project includes the development of 589 single- and multi-family residential units on approximately 41 acres of the site. The proposed residential development is consistent with the approved Specific Plan area Low-density Residential (LDR), Medium-density Residential (MDR), and Medium/High-density Residential (MHDR) land use designations and zoning codes. Refer to Figure 3, *Site Plan*, for the site design.

In preparing the site for construction, the Project would require the demolition of the buildings associated with an on-site dog training area. Additionally, off-site improvements will take place within an approximately 1.6 acre portion of the 80-foot-wide Hickory Street right-of-way located adjacent to the eastern Project site boundary. Refer to Figure 3, *Site Plan*, for the detailed site plan for the proposed Project.

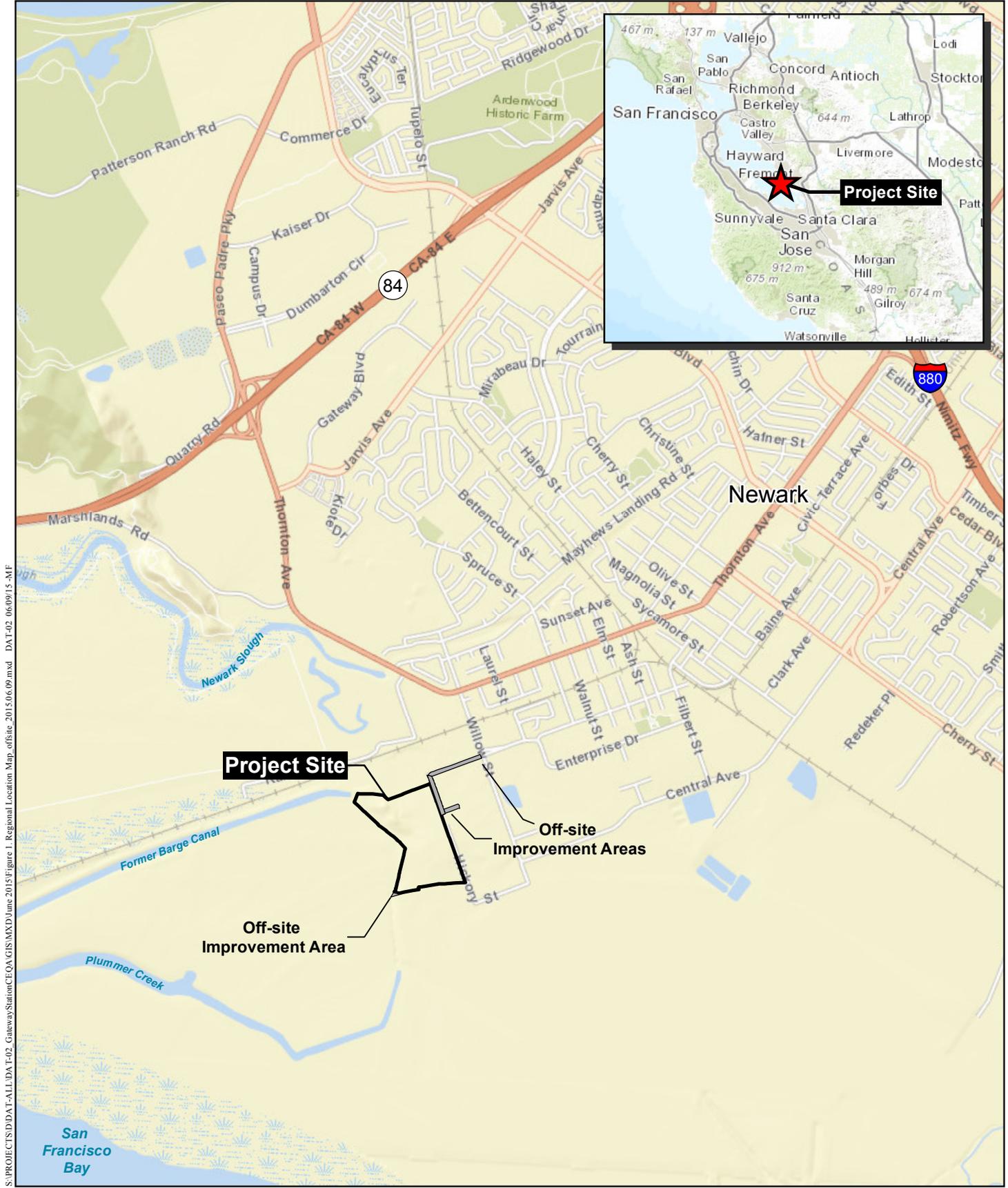
1.4 PROJECT DESIGN FEATURES

The Project proposes to incorporate several features consistent with mitigation measures required as part of the Dumbarton TOD Specific Plan Program EIR. These features include several requirements of the California Green Building Code (CALGreen) and Green Point Rated Program that would increase energy efficiency, reduce area source pollutants, and reduce the operational greenhouse gas (GHG) emissions. Mitigation Measure 4.6-1 from the Dumbarton TOD Specific Plan EIR would ensure that Project design features would be incorporated. These features include, but are not limited to, the following:

- Energy efficiency of at least 20 percent beyond Title 24
- Sustainably designed plumbing systems and low-flow water fixtures
- Efficient mechanical and electrical equipment, appliances, and lighting fixtures.
- Low-water landscape irrigation system
- Low-water landscape practices such as use of soil amendments and top dressing for moisture retention, and placing trees to reduce heat gain on hard surfaces
- Weather- or soil-moisture-based irrigation controllers
- Drought-tolerant landscaping
- Low-VOC flooring, paint, and construction adhesives
- Low-VOC insulation
- Natural gas fireplaces
- Shade trees in parking areas and throughout Project site
- Cool roof materials (albedo/reflectivity greater than or equal to 30)
- Smart meters and programmable thermostats
- Roof anchors and wiring for solar panel installations
- Residences are within walking distance (0.25-mile) from a proposed transit station
- Maximum interior daylight
- Secure bike parking (at least one bicycle space per twenty vehicle spaces)
- Information on transportation alternatives will be provided to the public (i.e., bike maps and transit schedules)

Consistent with Mitigation Measures 4.2-1a and 4.2-1b from the Dumbarton TOD Specific Plan EIR, control measures during Project construction would include, but not be limited, to the following:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day in order to maintain a minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
- All haul trucks transporting soil, sand, or other loose material off site shall be covered.



S:\PROJECTS\DDAT-ALL\DAT-02_GatewayStation\CEQA\GIS\MXD\June 2015\Figure 1_Regional Location Map_offsite_2015.06.09.mxd DAT-02_06/09/15-MF

Base Map: USGS, ESRI 2014 Map Date: 06-09-2015

Site and Vicinity Map

GATEWAY STATION WEST

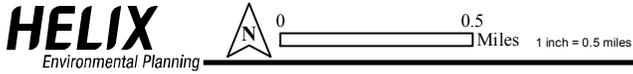
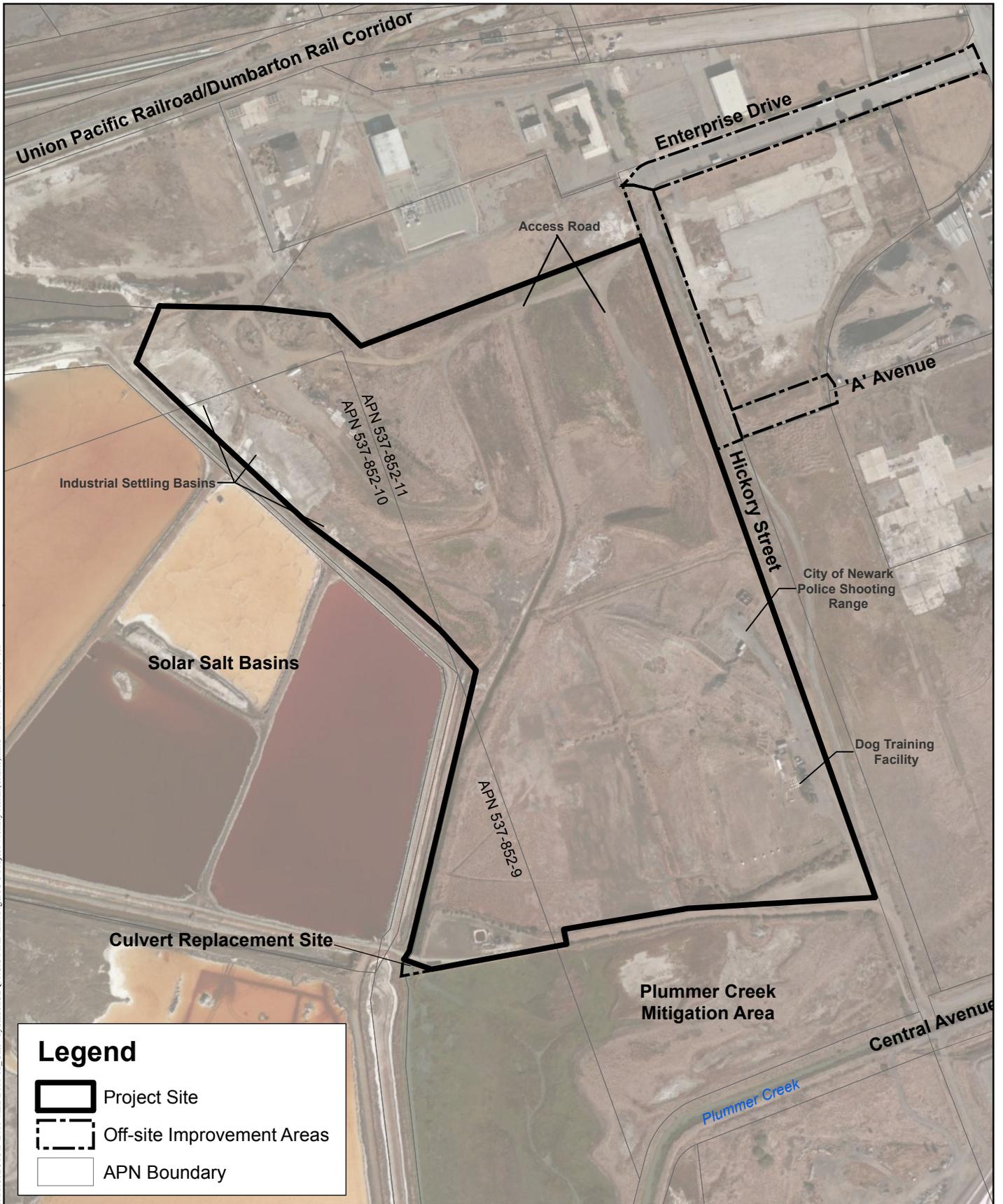


Figure 1



S:\PROJECTS\DAT-ALL\DAT-02_GatewayStation\CEQA\GIS\MXD\LEIR\Figure 3-3 Project Vicinity Aerial(offline).mxd DAT-02_02/19/15-JH

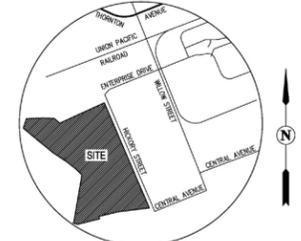
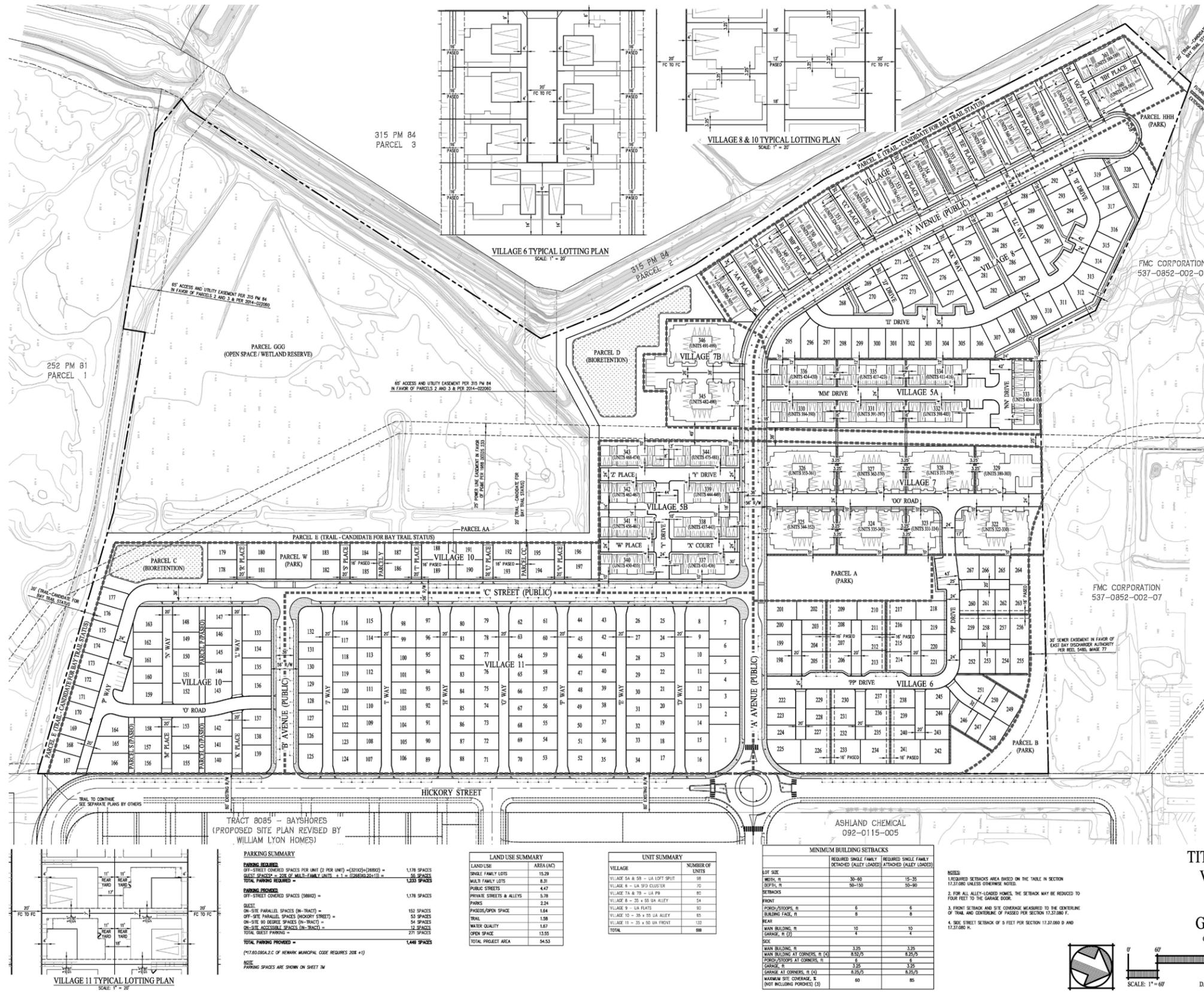
Map Date: 06-17-2015

Aerial Map

GATEWAY STATION WEST

Figure 2

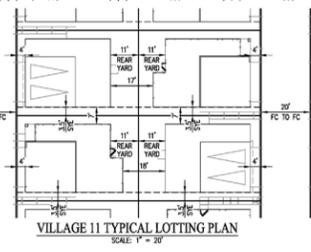
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VICINITY MAP
NOT TO SCALE

GENERAL NOTES:

- OWNER/DEVELOPER: DUMBARTON AREA 2, LLC
500 LA GONDA WAY, SUITE 102
DANVILLE, CA 94526
CONTACT: GLENN BROWN
(925) 362-3749
- ENGINEER: CARLSON, BARBEE & GIBSON, INC.
2833 CAMINO RAMON, SUITE 350
SAN RAMON, CA 94583
CONTACT: GREG MILLER
(925) 866-0322
- SOILS ENGINEER: BERLOGAR, STEVENS & ASSOCIATES
5587 SUNNY BOULEVARD
PLEASANTON, CA 94566
CONTACT: FRANK BERLOGAR
(925) 484-2200
(925) 846-9645 (FAX)
- EXISTING USE: LIGHT INDUSTRIAL
- SUBDIVISION AREA: 54.53±
DEVELOPABLE AREA: 41.0±
- NUMBER OF UNITS: 589 UNITS
- THIS PROPERTY LIES IN THE JURISDICTION OF:
FIRE PROTECTION: CITY OF NEWARK FIRE PROTECTION DISTRICT
DOMESTIC WATER: ALAMEDA COUNTY COUNTY WATER DISTRICT
SANITARY SEWER: UNION SANITARY DISTRICT
STORM DRAIN WITHIN STREETS, LANES & PASEOS: CITY OF NEWARK (S&E)
STORM DRAIN WITHIN PRIVATE YARDS: PRIVATELY MAINTAINED BY HOMEOWNERS (PSDE)
GAS & ELECTRIC SERVICE: PACIFIC GAS & ELECTRIC
TELEPHONE SERVICE: AT&T
- ROADWAYS AND PARCELS: UNLESS OTHERWISE NOTED (I.E. PUBLIC) ALL ROADWAYS AND PARCELS ARE TO BE MAINTAINED BY THE HOA ESTABLISHED WITH THE PROJECT. PUBLIC ACCESS EASEMENTS WILL BE DEDICATED OVER PARCEL E FOR PUBLIC USE.
- PROPOSED LAND USE SUMMARY: SEE TABLE (THIS SHEET)
- ASSESSORS PARCEL NUMBERS: 537-0852-009
537-0852-010
537-0852-011
- BENCHMARK: CITY OF NEWARK OFFICIAL BENCHMARK NO. 62, ALSO BEING AN ALAMEDA COUNTY BENCHMARK, THE TOP OF CURB AT STORM WATER INLET AT THE NORTH-EAST CORNER OF THORNTON AVENUE AT MELLOW STREET, ELEVATION TAKEN AS 11.39 (NAD83) (8,661 NVD) 29 PER CITY OF NEWARK RECORDS).
- TOPOGRAPHY: PREPARED BY HJM GEOSPATIAL, INC. DATED MAY 2005
- FLOOD ZONE: ZONED X AND AE
FLOOD INSURANCE RATE MAP (FIRM)
COMMUNITY PANEL NUMBER: 060009 0443 G
- THIS PROJECT MAY BE BUILT IN PHASES AND MULTIPLE FINAL MAPS MAY BE FILED. A PHASING PLAN WILL BE PROVIDED TO THE CITY OF NEWARK PRIOR TO FINAL MAP APPROVAL.
- LOTS 1 - 321 WILL BE RESIDENTIAL LOTS
LOTS 322 - 361 (UNITS 322-588) WILL BE CONDOMINIUM UNITS.
- LOT DIMENSIONS AND AREAS ARE APPROXIMATE AND ARE ROUNDED TO THE NEAREST WHOLE NUMBER. EXACT DIMENSIONS AND AREAS WILL BE PROVIDED ON THE FINAL MAP
- ALL BUILDINGS SHALL BE EQUIPPED WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 15.09.020.G OF THE NEWARK MUNICIPAL CODE.
- GRADING SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL DESIGN.
- ALL UTILITIES SHOWN ARE TO BE USED AS A GUIDE AND MAY CHANGE DURING FINAL DESIGN.
- GENERAL PLAN DESIGNATION: CONSERVATION/OPEN SPACE (PORTION), LOW-MEDIUM DENSITY RESIDENTIAL (PORTION), MEDIUM DENSITY RESIDENTIAL (PORTION), HIGH DENSITY RESIDENTIAL (PORTION), SALT HARVESTING, REFINING & PRODUCTION (PORTION).
- ZONING: EXISTING: MT-1 HIGH TECHNOLOGY PARK DISTRICT
PROPOSED: DUMBARTON FORM BASED CODE



PARKING SUMMARY

PARKING REQUIRED:
OFF-STREET COVERED SPACES PER UNIT (2 PER UNIT) = (521X)(2) = 1,042 SPACES
GUEST SPACES = ONE (2) MULTIFAMILY UNITS = 2 SPACES
TOTAL PARKING REQUIRED = 1,044 SPACES

PARKING PROVIDED:
OFF-STREET COVERED SPACES (DRIVE) = 1,178 SPACES
GUEST SPACES = ONE (2) MULTIFAMILY UNITS = 2 SPACES
ON-SITE PARALLEL SPACES (IN-TRACT) = 152 SPACES
OFF-SITE PARALLEL SPACES (HICKORY STREET) = 54 SPACES
ON-SITE 90 DEGREE SPACES (IN-TRACT) = 14 SPACES
ON-SITE ACCESSIBLE SPACES (IN-TRACT) = 27 SPACES
TOTAL GUEST PARKING = 277 SPACES
TOTAL PARKING PROVIDED = 1,448 SPACES

(MTR.080A.2.C OF NEWARK MUNICIPAL CODE REQUIRES 20% +1)
NOTE: PARKING SPACES ARE SHOWN ON SHEET IV

LAND USE SUMMARY

LAND USE	AREA (AC)
SINGLE FAMILY LOTS	15.29
MULTI-FAMILY LOTS	8.31
PUBLIC SPACES	4.47
PRIVATE SPACES & ALLEYS	5.38
PARKS	2.24
PASEOS/OPEN SPACE	1.64
TRAIL	1.58
WATER QUALITY	1.87
OPEN SPACE	13.55
TOTAL PROJECT AREA	54.53

UNIT SUMMARY

VILLAGE	NUMBER OF UNITS
VILLAGE 5A & 5B - 1/2 LA LEFT SPLIT	98
VILLAGE 8 - 1/2 LA 30' CLUSTER	72
VILLAGE 7A & 7B - 1/2 LA PS	80
VILLAGE 8 - 25' X 55' 1/2 LA ALLEY	54
VILLAGE 9 - 1/2 LA PLATS	90
VILLAGE 10 - 30' X 55' 1/2 LA ALLEY	60
VILLAGE 11 - 35' X 50' 1/2 LA FRONT	132
TOTAL	686

MINIMUM BUILDING SETBACKS

LOT SIZE	REQUIRED SINGLE FAMILY DETACHED (ALLEY LOADED)	REQUIRED SINGLE FAMILY ATTACHED (ALLEY LOADED)
WIDTH, FT	30-60	15-30
DEPTH, FT	30-100	30-90
SETBACKS		
FRONT		
PERIOD/STOOPS, FT	6	6
BUILDING FACE, FT	6	6
REAR		
MAIN BUILDING, FT	10	10
GARAGE, FT (3)	4	4
SIDE		
MAIN BUILDING, FT	3.25	3.25
MAIN BUILDING AT CORNERS, FT (3)	8.25/5	8.25/5
PERIOD/STOOPS AT CORNERS, FT	6	6
GARAGE, FT	3.25	3.25
GARAGE AT CORNERS, FT (4)	8.25/5	8.25/5
MAXIMUM SITE COVERAGE, % (NOT INCLUDING PORCHES) (5)	60	85

NOTES:
1. REQUIRED SETBACK AREA BASED ON THE TABLE IN SECTION 17.37.060 UNLESS OTHERWISE NOTED.
2. FOR ALL ALLEY-LOADED HOMES, THE SETBACK MAY BE REDUCED TO FOUR FEET TO THE GARAGE DOOR.
3. FRONT SETBACK AND SITE COVERAGE MEASURED TO THE CENTERLINE OF TRAIL AND CENTERLINE OF PASEOS PER SECTION 17.37.060 F.
4. SIDE STREET SETBACK OF 5 FEET PER SECTION 17.37.060 D AND 17.37.060 F.

**TITLE SHEET AND SITE PLAN
VESTING TENTATIVE MAP
TRACT 8099
GATEWAY STATION WEST**
CITY OF NEWARK, ALAMEDA COUNTY, CALIFORNIA



Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS - SURVEYORS - PLANNERS
2833 CAMINO RAMON, SUITE 350
SAN RAMON, CALIFORNIA 94583
(925) 866-0322
www.carlsonbg.com



SCALE: 1" = 60'
DATE: JUNE 3, 2015

SHEET NO. TM-1 OF 8 SHEETS

Source: Carlson, Barbee & Gibson, Inc. 2015

- All visible mud or dirt track-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 miles per hour (mph).
- Roadways, driveways, and sidewalks will be paved early in construction phasing to minimize fugitive dust.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time of diesel powered construction equipment to 2 minutes. 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.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas and watered appropriately until vegetation is established.
- The simultaneous occurrence of excavation, grading, and ground disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.
- Sandbags or other erosion-control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- The Project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) will achieve a U.S. Environmental Protection Agency (USEPA) Tier 2 or better engine standards for off-road engines.
- Use low VOC (i.e., reactive organic gases [ROG]) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
- Requiring that all construction equipment, diesel trucks, and generators be equipped with diesel particulate filter for emission reductions of particulate matter (PM).

Additionally, the Project proposes to recycle, and/or salvage for reuse, a minimum of 75 percent of the non-hazardous construction debris.

1.5 PROPOSED CONSTRUCTION PHASING

For the purpose of the analysis, Project construction is assumed to begin February 2016 and be completed March 2020. Demolition would occur first, beginning in February and lasting approximately 6 weeks, resulting in the removal of approximately 5,000 square feet of existing structures and hardscape. Grading would follow and last approximately 4 months. Grading would include the import of 100,000 cubic yards of fill. The underground utilities and infrastructure phase would follow beginning in August 2016 and lasting 6 months. Paving would occur concurrent with the final 10 weeks of the underground utilities and infrastructure phase. The building construction phase, which includes constructing the residential buildings, as well as coating the pavement/architecture, would follow. The architectural coatings portion of this phase is assumed to begin approximately 12 months after construction begins and would last until approximately one month after the building construction is complete. The building construction phase would last approximately 34 months.

The anticipated construction schedule used to calculate the daily emissions is listed in Table 1, *Anticipated Construction Schedule for CalEEMod Modeling Analysis*. This schedule is based on a combination of CalEEMod defaults and input from the Project engineer. The CalEEMod construction emission calculations are provided in Appendix A.

Table 1 ANTICIPATED CONSTRUCTION SCHEDULE FOR CALEEMOD MODELING ANALYSIS				
Phase	Construction Activity	Construction Period		
		Start	End	Number of Working Days
1	Demolition	2/15/2016	3/31/2016	34
2	Grading	4/1/2016	7/31/2016	86
3	Underground Infrastructure/Utilities	8/1/2016	1/31/2017	132
4	Paving	11/16/2016	1/31/2017	55
5	Building Construction	2/1/2017	12/3/2019	740
6	Architectural Coating	2/1/2018	3/18/2020	555

Note: The construction start and end dates are assumed in the CalEEMod model for the purpose of estimating the worst-case daily construction emissions. Emission calculations are provided in Appendix A.

2.0 ENVIRONMENTAL SETTING

2.1 CLIMATE AND METEOROLOGY

The climate of the proposed Project site, and all of the San Francisco Bay Area, is predominated by a semi-permanent, subtropical high-pressure cell over the Pacific Ocean. This cell influences prevailing winds and results in condensation and the presence of fog and stratus clouds during

the summer, and stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds during the winter. The high pressure cell also creates two types of temperature inversions that may act to degrade local air quality.

Elevation inversions occur during the warmer months as ascending air associated with the Pacific high pressure cell comes into contact with warmer air up the coastal hills. The boundary between the two layers of air creates a temperature inversion that traps pollutants. The other type of inversion, a radiation inversion, develops on winter nights when air near the ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses can also trap pollutants. As the pollutants become more concentrated in the atmosphere, photochemical reactions produce ozone, commonly known as smog.

2.2 AIR QUALITY

2.2.1 Air Quality Background

Air quality laws and regulations generally divide air pollutants into two broad categories: “criteria air pollutants” and “toxic air contaminants.” Criteria air pollutants are a group of common air pollutants regulated by the federal and state governments by means of ambient standards based on criteria regarding health and/or environmental effects of pollution. Toxic air contaminants (TACs) (air toxics or toxic air pollutants) are often referred to as “non-criteria” air pollutants because ambient air quality standards have not been established for them. Under certain conditions, TACs may cause adverse health effects, including cancer and/or acute and chronic noncancerous effects. The following sections provide a description of relevant criteria air pollutants and toxic air contaminants.

2.2.2 Criteria Pollutants

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. In general, air pollutants include the following compounds:

- Ozone (O₃)
- Reactive Organic Gases (ROGs) or Volatile Organic Compounds (VOCs)
- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO₂)
- Respirable Particulate Matter and Fine Particulate Matter (PM₁₀ and PM_{2.5})
- Sulfur dioxide (SO₂)
- Lead (Pb)

The following specific descriptions of health effects for each of the air pollutants potentially associated with Project construction and operations are based on information provided by the USEPA (2007) and California Air Resources Board (CARB, 2009).

Ozone. Ozone is considered a photochemical oxidant, which is a chemical that is formed when VOCs and NO_x, both by-products of fuel combustion, react in the presence of ultraviolet light. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function,

aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone. The Bay Area Air Basin (BAAB) is designated nonattainment of the 1-hour California ambient air quality standards (AAQS) and 8-hour California and National AAQS for ozone.

Reactive Organic Gases. (ROGs; also known as VOCs) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as ozone. There are no AAQS established for ROGs. However, because they contribute to the formation of ozone, the Bay Area Air Quality Management District (BAAQMD) has established a significance threshold for this pollutant.

Carbon Monoxide. CO is a product of fuel combustion, and the main source of CO in the BAAB is from motor vehicle exhaust. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease and can also affect mental alertness and vision. The BAAB is designated under the California and National AAQS as being in attainment of CO criteria levels.

Nitrogen Dioxide. NO₂ is also a by-product of fuel combustion and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO₂ is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO₂ can also increase the risk of respiratory illness. The BAAB is designated an attainment area for NO₂ under the National AAQS and California AAQS.

Respirable Particulate Matter and Fine Particulate Matter. Respirable particulate matter, or PM₁₀, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Fine particulate matter, or PM_{2.5}, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in these size ranges have been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM₁₀ and PM_{2.5} arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations, and windblown dust. In the BAAB, most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Motor vehicles are currently responsible for about half of particulates in the BAAB. Wood burning in fireplaces and stoves is another large source of fine particulates. PM₁₀ and PM_{2.5} can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. PM_{2.5} is considered to have the potential to lodge deeper in the lungs. Diesel particulate matter (DPM) is classified a carcinogen by CARB. The BAAB is designated nonattainment under the California AAQS for PM₁₀ and nonattainment under both the California and National AAQS for PM_{2.5}.

Sulfur dioxide. SO₂ is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO₂ are found near large industrial sources. SO₂ is a respiratory irritant that

can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO₂ can cause respiratory illness and aggravate existing cardiovascular disease. The BAAB is designated an attainment area for SO₂ under the California and National AAQS.

Lead. Lead in the atmosphere occurs as particulate matter. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Lead has the potential to cause gastrointestinal, central nervous system, kidney and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen. The BAAB is designated in attainment of the California and National AAQS for lead. Because emissions of lead are found only in projects that are permitted by BAAQMD, lead is not an air quality of concern for the proposed Project.

2.2.3 Toxic Air Contaminants

TACs are a category of air pollutants that have been shown to have an impact on human health but are not classified as criteria pollutants. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. Air toxics are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as farms, landfills, construction sites, and residential areas. Adverse health effects of toxic air contaminants can be carcinogenic (cancer-causing), short-term (acute) noncarcinogenic, and long-term (chronic) noncarcinogenic. Public exposure to TACs is a significant environmental health issue in California.

2.3 GREENHOUSE GASES

2.3.1 Climate Change Overview

Global climate change refers to changes in average climatic conditions on Earth, as a whole, including temperature, wind patterns, precipitation and storms. Historical records show that global temperature changes have occurred naturally in the past, such as during previous ice ages. To measure climate change, scientists look at long-term trends. The temperature trend, including data through 2010, shows the climate has warmed by approximately 0.36°F per decade since the late 1970s (National Aeronautics and Space Administration [NASA] 2011).

Global temperatures are moderated by naturally occurring atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting light in but preventing heat from escaping. These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere. The resulting balance between incoming solar radiation and outgoing radiation from both the Earth's surface and the atmosphere maintains the planet's habitability. The Earth's surface temperature averages about 58°F because of the greenhouse effect. Without it, the Earth's average surface temperature would be somewhere around an uninhabitable 0°F.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The statistical models show a “high confidence” that temperature increase caused by anthropogenic GHG emissions could be kept to less than two degrees Celsius relative to pre-industrial levels if atmospheric concentrations are stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO₂e) by the year 2100 (IPCC 2014).

2.3.2 Types of Greenhouse Gases

The GHGs, as defined under California’s Assembly Bill (AB) 32, include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Although water vapor is the most abundant and variable GHG in the atmosphere, it is not considered a pollutant; it maintains a climate necessary for life.

CO₂ is the most important and common anthropogenic GHG. CO₂ is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO₂ include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO₂ concentrations remained steady prior to the current period for approximately 10,000 years. The atmospheric CO₂ concentration in 2010 was 390 ppm, 39 percent above the concentration at the start of the Industrial Revolution (about 280 ppm in 1750). As of June 2014, the CO₂ concentration exceeded 397 ppm (National Oceanic and Atmospheric Administration [NOAA] 2014).

CH₄ is a gas and is the main component of natural gas used in homes. A natural source of methane is from the decay of organic matter. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

N₂O is produced by both natural and human-related sources. N₂O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. Primary human-related sources of N₂O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production.

Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth’s surface). Chlorofluorocarbons were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol.

SF₆ is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF₆ is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.

GHGs have long atmospheric lifetimes that range from one year to several thousand years. Long atmospheric lifetimes allow for GHGs to disperse around the globe. Because GHGs vary widely

in the power of their climatic effects, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO₂. For example, because methane and N₂O are approximately 25 and 298 times more powerful than CO₂, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO₂ has a GWP of 1). CO₂e is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO₂e. The atmospheric lifetime and GWP of selected GHGs are summarized in Table 2, *Global Warming Potentials and Atmospheric Lifetimes*. As shown in the table, the GWP for common GHGs ranges from 1 (CO₂) to 22,800 (SF₆).

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO ₂)	50-200	1
Methane (CH ₄)	12	25
Nitrous Oxide (N ₂ O)	114	298
HFC-134a	14	1,430
PFC: Tetrafluoromethane (CF ₄)	50,000	7,390
PFC: Hexafluoroethane (C ₂ F ₆)	10,000	12,200
Sulfur Hexafluoride (SF ₆)	3,200	22,800

HFC: hydrofluorocarbon; PFC: perfluorocarbon
Source: IPCC 2007

3.0 REGULATORY FRAMEWORK

3.1 AIR QUALITY REGULATIONS

Ambient air quality standards (AAQS) have been adopted at state and federal levels for criteria air pollutants. In addition, both the state and federal governments regulate the release TACs. The City of Newark is in the BAAB and is subject to the rules and regulations imposed by the BAAQMD, as well as the California AAQS adopted by the CARB and national AAQS adopted by the USEPA. Federal, state, regional, and local laws, regulations, plans, and guidelines that are applicable to the Project are summarized below.

3.1.1 Federal

Federal Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish National Ambient Air Quality Standards (NAAQS). States retain the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the U.S. Supreme Court found that CO₂ is an air pollutant covered by the CAA; however, no NAAQS have been established for CO₂. Current NAAQS are listed in Table 3, *National and California Ambient Air Quality Standards*.

**Table 3
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone	1-Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m ³)		0.075 ppm (147 µg/m ³)		
Respirable Particulate Matter (PM ₁₀)	24-Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		-		
Fine Particulate Matter (PM _{2.5}) ⁸	24-Hour	-	-	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12 µg/m ³		
Carbon Monoxide (CO)	1-Hour	20 ppm (23 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m ³)	-	Non- Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m ³)		9 ppm (10 mg/m ³)	-	
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		-	-	
Nitrogen Dioxide (NO ₂) ⁹	1-Hour	0.18 ppm (339 µg/m ³)	Gas Phase Chemiluminescence	0.100 ppm (188 µg/m ³)	-	Gas Phase Chemilumi- nescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		0.053 ppm (100 µg/m ³)	Same as Primary Standard	
Sulfur Dioxide (SO ₂) ¹⁰	1-Hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	-	Ultraviolet Fluorescence; Spectro- photometry (Pararo- saniline Method)
	3-Hour	-		-	0.5 ppm (1300 µg/m ³)	
	24-Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (365 µg/m ³) (for certain areas) ⁹	-	
	Annual Arithmetic Mean	-		0.030 ppm (80 µg/m ³) (for certain areas) ⁹	-	
Lead ^{11,12}	30-Day Average	1.5 µg/m ³	Atomic Absorption	-	-	-
	Calendar Quarter	-		1.5 µg/m ³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3- Month Average	-		0.15 µg/m ³		
Visibility Reducing Particles ¹³	8-Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24-Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹¹	24-Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

Footnotes on following page.

- ¹ California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM₁₀, PM_{2.5}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- ² National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current federal policies.
- ³ Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- ⁴ Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
- ⁵ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ⁶ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ⁷ Reference method as described by the USEPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the USEPA.
- ⁸ On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
- ⁹ To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 and 0.100 ppm, respectively.
- ¹⁰ On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-hour average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards have are approved.
- ¹¹ The CARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- ¹² The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
- ¹³ In 1989, the CARB converted both the general statewide 10-mile visibility standards and the Lake Tahoe 20-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.
- ppm = parts per million; µg/m³ = micrograms per cubic meter;
mg/m³ = milligrams per cubic meter
Source: CARB 2013b

The federal standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those “sensitive receptors” most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in “attainment,” “nonattainment,” or “unclassified” for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 4, *Bay Area Air Basin Attainment Status*, lists the federal attainment status of the BAAB for the criteria pollutants. The USEPA classifies the BAAB as in attainment for CO, NO₂, SO₂, and lead; unclassified for PM₁₀; and in nonattainment for ozone and PM_{2.5} with respect to federal air quality standards.

Criteria Pollutant	Federal Designation	State Designation
Ozone (1-hour)	Nonattainment	Nonattainment
Ozone (8-hour)	Classification revoked (2005)	Nonattainment (serious)
CO	Attainment	Attainment
PM ₁₀	Unclassified	Nonattainment
PM _{2.5}	Nonattainment	Nonattainment
NO ₂	Attainment	Attainment
SO ₂	Attainment	Attainment
Lead	Attainment	Attainment

Source: CARB, 2014b. Area Designations: Activities and Maps, <http://www.arb.ca.gov/desig/adm/adm.htm>.

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA has the responsibility to review all SIPs to determine whether they conform to the requirements of the CAA.

3.1.2 State

California Clean Air Act

The federal CAA allows states to adopt AAQS and other regulations provided that they are at least as stringent as federal standards. The CARB, a part of the California EPA (CalEPA) is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California Ambient Air Quality Standards (CAAQS). The CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

In addition to primary and secondary AAQS, the state has established a set of episode criteria for ozone, CO, NO₂, SO₂, and PM. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Table 4 lists the state attainment status of the BAAB for the criteria pollutants. The BAAB is currently designated a nonattainment area for ozone, PM_{2.5}, and PM₁₀ with respect to state air quality standards.

Toxic Air Contaminants

California's air toxics control program began in 1983 with the passage of the Toxic Air Contaminant Identification and Control Act, better known as AB 1807 or the Tanner Bill. When a compound becomes listed as a TAC under the Tanner process, the CARB normally establishes minimum statewide emission control measures to be adopted by local air pollution control districts (APCDs). Later legislative amendments (AB 2728) required the CARB to incorporate all 189 federal HAPs into the state list of TACs.

Supplementing the Tanner process, AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987, currently regulates over 600 air compounds, including all of the Tanner-designated TACs. Under AB 2588, specified facilities must quantify emissions of regulated air toxics and report them to the local APCD. If the APCD determines that a potentially significant public health risk is posed by a given facility, the facility is required to perform a health risk assessment and notify the public in the affected area if the calculated risks exceed specified criteria.

On August 27, 1998, CARB formally identified PM emitted in both gaseous and particulate forms by diesel-fueled engines as a TAC. The particles emitted by diesel engines are coated with chemicals, many of which have been identified by the USEPA as HAPs and by CARB as TACs. CARB's Scientific Advisory Committee has recommended a unit risk factor (URF) of 300 in 1 million over a 70-year exposure period for diesel particulate. In September 2000, the CARB approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Diesel Risk Reduction Plan; CARB 2000). The Diesel Risk Reduction Plan outlined a comprehensive and ambitious program that included the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). These requirements are now in force on a state-wide basis.

3.1.3 Local

BAAQMD CEQA Air Quality Guidelines

In June 2010, the BAAQMD adopted an update to the 1999 BAAQMD CEQA Guidelines to assist local agencies in evaluating air quality and GHG impacts of development proposals and other regulatory plans proposed in the BAAB. In 2012, the District posted another update to the CEQA Guidelines on their website. In early 2012, an Alameda County Superior Court ruled that the BAAQMD's updated guidelines be set aside on the grounds that the District did not attempt to evaluate the potential environmental effects of the updated guidelines before their adoption. In *California Building Industry Association v. BAAQMD* (August 13, 2013, Case No. A136212) Cal. App. 4th, the First District Court of Appeal reversed a trial court's decision striking down BAAQMD's 2012 CEQA thresholds of significance for GHG emissions. Although the Court of Appeal's decision does provide the means by which BAAQMD may ultimately reinstate the GHG emissions thresholds, any such action by the District is still uncertain; BAAQMD will revisit the issue and reinstate the thresholds or adopt other standards altogether.

(Morrison & Foerster, LLP 2013). For this analysis, the BAAQMD's 2010 thresholds of significance were employed to determine the Project's contribution to air quality and GHGs, consistent with the Dumbarton TOD Specific Plan EIR.

BAAQMD 2010 Bay Area Clean Air Plan

The BAAQMD is the agency responsible for assuring that the National and California AAQS are attained and maintained in the BAAB. The BAAQMD regulates most air pollutant sources, except for motor vehicles, marine vessels, aircrafts, and agricultural equipment, which are regulated by the CARB or the USEPA. State and local government projects, as well as projects proposed by the private sector, are subject to BAAQMD requirements if the sources are regulated by the BAAQMD. Additionally, the BAAQMD, along with the CARB, maintains and operates ambient air quality monitoring stations at numerous locations throughout the BAAB. These stations are used to measure and monitor criteria and toxic air pollutant levels in the ambient air.

The BAAQMD prepares air quality management plans (AQMPs) to attain ambient air quality standards in the BAAB. The BAAQMD prepares ozone attainment plans (OAPs) for the federal ozone standard and clean air plans for the California ozone standard. The BAAQMD prepares these AQMPs in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). The most recent adopted comprehensive plan is the 2010 Bay Area Clean Air Plan, which was adopted on September 15, 2010, and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

The purpose of the 2010 Bay Area Clean Air Plan is to: (1) update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the CCAA to implement all feasible measures to reduce ozone; (2) consider the impacts of ozone control measures on PM, TAC, and GHGs in a single, integrated plan; (3) review progress in improving air quality in recent years; and (4) establish emission control measures in the 2009 to 2012 time frame. The 2010 Bay Area Clean Air Plan also provides the framework for the BAAB to achieve attainment of the California AAQS.

BAAQMD's Community Air Risk Evaluation (CARE) Program

The BAAQMD's CARE program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. Based on the annual emissions inventory of TACs for the BAAB, DPM was found to account for approximately 80 percent of the cancer risk from airborne toxics. The highest DPM concentrations occur in the urban core areas of eastern San Francisco, western Alameda, and northwestern Santa Clara counties. The BAAQMD has identified six affected communities in the Bay Area: Concord, eastern San Francisco, western Alameda County, Redwood City/East Palo Alto, Richmond/San Pablo, and San Jose. The City of Newark is not one of these six impacted communities. The major contributor to acute and chronic non-cancer health effects in the BAAB is acrolein (C₃H₄O). Major sources of acrolein include on-road mobile sources and aircraft near freeways and commercial and military airports. Currently the CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and

enforce acrolein emission limits are not available, the BAAQMD does not conduct health risk screening analysis for acrolein emissions.

3.1.4 Air Quality Monitoring Data

The BAAQMD operates a network of ambient air monitoring stations throughout the Bay Area. The purpose of the monitoring stations is to measure ambient concentrations of air pollutants and determine whether the ambient air quality meets the NAAQS and the CAAQS. The air quality monitoring station closest to the City is the Hayward Monitoring Station. However, this station only monitors ozone, so data was obtained from the San Jose Monitoring Station for the other criteria air pollutants. Table 5, *Air Quality Monitoring Data*, presents a summary of the ambient pollutant concentrations monitored at these two stations during the last three available years (2011 through 2013). The data show occasional violations of the state ozone standards, state PM₁₀ standards, and federal PM_{2.5} standards. The state and federal CO, SO₂, and NO₂ standards have not been exceeded in the past three years in the vicinity of Newark. The corresponding NAAQS and CAAQS are presented in Table 3. The BAAB is currently designated as a nonattainment area for the state standards for PM₁₀, PM_{2.5}, 1-hour ozone, and 8-hour ozone, and the federal standards for 1-hour ozone and PM_{2.5}.

As shown in Table 5, the 1-hour ozone concentration exceeded the state standard once in 2013. The federal standard for 8-hour ozone was not exceeded during this time. The state 24-hour PM₁₀ standard was violated once in 2012 and five times in 2013. The federal 24-hour PM_{2.5} standard was violated 9 days between 2011 and 2013. Neither the state nor federal standards for CO, NO₂, or SO₂ were exceeded at any time during the years 2011 through 2013.

Table 5			
AIR QUALITY MONITORING DATA			
Pollutant	2011	2012	2013
Ozone (O₃) - Hayward Monitoring Station			
Maximum 1-hour concentration (ppm)	0.088	0.094	0.085
Days above 1-hour state standard (>0.09 ppm)	0	0	0
Maximum 8-hour concentration (ppm)	0.070	0.065	0.075
Days above 8-hour state standard (>0.07 ppm)	0	0	1
Days above 8-hour federal standard (>0.075 ppm)	0	0	0
Carbon Monoxide (CO) - San Jose Monitoring Station			
Maximum 8-hour concentration (ppm)	2.18	1.86	*
Days above state or federal standard (>9.0 ppm)	0	0	0
Respirable Particulate Matter (PM₁₀) - San Jose Monitoring Station			
Maximum 24-hour concentration (µg/m ³)	44.3	59.6	58.1
Days above state standard (>50 µg/m ³)	0	1	5
Days above federal standard (>150 µg/m ³)	0	0	0

**Table 5 (cont.)
AIR QUALITY MONITORING DATA**

Pollutant	2011	2012	2013
Fine Particulate Matter (PM_{2.5}) - San Jose Monitoring Station			
Maximum 24-hour concentration (µg/m ³)	50.5	38.4	57.7
Days above federal standard (>35 µg/m ³)	3	2	4
Nitrogen Dioxide (NO₂) - San Jose Monitoring Station			
Maximum 1-hour concentration (ppm)	0.061	0.067	0.058
Days above state 1-hour standard (0.18 ppm)	0	0	0
Sulfur Dioxide (SO₂) - San Jose Monitoring Station			
Maximum 24-hour concentration (ppm)	0.003	0.003	0.001
Days above 24-hour state standard (>0.04 ppm)	0	0	0

Source: CARB (2014a). Air Pollution Data Monitoring Cards (2011, 2012, and 2013), <http://www.arb.ca.gov/adam/index.html>. Current as of September, 2014.

ppm = parts per million, µg/m³ = micrograms per cubic meter

Ozone data was obtained from the Hayward Monitoring Station.

CO, NO₂, SO₂, PM₁₀ and PM_{2.5} data was obtained from the San Jose Jackson Street Monitoring Station.

*Insufficient data available

3.2 GREENHOUSE GAS REGULATIONS

3.2.1 Federal

Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* (USEPA) that CO₂ is an air pollutant, as defined under the Clean Air Act (CAA), and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO₂, CH₄, N₂O, HFC, PFC, and SF₆) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards were established on April 1, 2010 for 2012 through 2016 model year vehicles and on October 15, 2012 for 2017 through 2025 model year vehicles (USEPA 2011; USEPA and NHTSA 2012).

Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) have been working together on developing a national program of regulations to reduce GHG emissions and to improve fuel economy of light-duty vehicles. The USEPA is finalizing the first-ever national GHG emissions standards under the Clean Air Act, and the NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking establishing standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with

standards for model years 2017 through 2025. The rules require these vehicles to meet an estimated combined average emissions level of 250 grams per mile by 2016, decreasing to an average industry fleet-wide level of 163 grams per mile in model year 2025. The 2016 standard is equivalent to 35.5 miles per gallon (mpg), and the 2025 standard is equivalent to 54.5 mpg if the levels were achieved solely through improvements in fuel efficiency. The agencies expect, however, that a portion of these improvements will be made through improvements in air conditioning leakage and the use of alternative refrigerants that would not contribute to fuel economy. These standards would cut GHG emissions by an estimated 2 billion metric tons and 4 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2017–2025). The combined USEPA GHG standards and NHTSA CAFE standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards (USEPA 2011; USEPA and NHTSA 2012).

3.2.2 State

California Code of Regulations, Title 24, Part 6

California Code of Regulations (CCR) Title 24 Part 6: California’s Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels.

The Title 24 standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2013 update to the 2008 standards went into effect in July 2014.

Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve “the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State”. On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California’s enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles (CARB 2013a). In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2013a).

Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California’s air quality problems, and potentially cause a rise in sea levels. In an effort to avoid or reduce climate change impacts, EO S-3-05 calls for a

reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Executive Order S-01-07

This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs the CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. The CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. On December 29, 2011, District Judge Lawrence O'Neill in the Eastern District of California issued a preliminary injunction blocking the CARB from implementing LCFS for the remainder of the *Rocky Mountain Farmers Union* litigation. The injunction was lifted in April 2012 so that CARB can continue enforcing the LCFS pending CARB's appeal of the federal district court ruling.

Senate Bill 375

Senate Bill (SB) 375 was signed and passed into law on September 30, 2008. SB 375 enhances CARB's ability to reach AB 32 goals. Specifically, SB 375 requires that CARB set regional targets for the purpose of reducing GHG emissions from passenger vehicles for the years 2020 and 2035. If regions develop integrated land use, housing, and transportation plans that meet the SB 375 targets, new projects in these regions can be relieved of certain review requirements of CEQA. The targets apply to the 17 regions in the state managed by metropolitan planning organizations (MPO). The CARB adopted its final targets on September 23, 2010.

The MTC is the MPO for the nine-county San Francisco Bay Area region. MTC's targets are a 7 percent per capita reduction from 2005 by 2020, and 15 percent per capita reduction from 2005 by 2035. MTC's *Plan Bay Area* is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). The *Plan Bay Area* was released on March 21, 2013 and was adopted in July 2013. The SCS sets a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by CARB.

According to *Plan Bay Area*, the Plan meets a 16 percent per capita reduction of GHG emissions by 2035 and a 10 percent per capita reduction by 2020 from 2005 conditions.

Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that CARB develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

California Air Resources Board: Scoping Plan

On December 11, 2008, CARB adopted the Scoping Plan (CARB 2008) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. Measures applicable to development projects include those related to energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategy. Relative to transportation, the Scoping Plan includes nine measures or recommended actions related to reducing vehicle miles traveled and vehicle GHGs through fuel and efficiency measures. These measures would be implemented statewide rather than on a project-by-project basis.

The CARB released the First Update to the Climate Change Scoping Plan in May 2014 to provide information on the development of measure-specific regulations and to adjust projections in consideration of the economic recession. The Scoping Plan's current estimate of the necessary GHG emission reductions to achieve the goal of AB 32 (i.e., 1990 levels by 2020) is 78 million metric tons of CO₂ equivalent (MMT CO₂e; CARB 2014c). The CARB is forecasting that this would be achieved through the following reductions by sector: 25 MMT CO₂e for energy, 23 MMT CO₂e for transportation, 5 MMT CO₂e for high-GWP GHGs, and 2 MMT CO₂e for waste. The remaining 23 MMT CO₂e would be achieved through Cap-and-Trade Program reductions. This reduction is flexible—if CARB receives new information and changes the other sectors' reductions to be less than expected, the agency can increase the Cap-and-Trade reduction (and vice versa).

California Green Building Standards Code

The California Green Building Standards Code (24 CCR, Part 11) is a code with mandatory requirements for new residential and nonresidential buildings (including buildings for retail, office, public schools and hospitals) throughout California. The current version of the code went into effect on July 1, 2014, and includes energy efficiency updates resulting in energy usage reductions of 25 percent for residential buildings and 30 percent for nonresidential building (CEC 2012). The code is Part 11 of the California Building Standards Code in Title 24 of the *California Code of Regulations* and is also known as the CALGreen Code (CBSC 2014).

The development of the CALGreen Code is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

The CALGreen Code contains requirements for construction site selection; storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

3.2.3 Local

City of Newark General Plan

Originally adopted in 1992 and subsequently amended through 2013, the existing Newark General Plan was adopted on December 12, 2013, and contains nine elements that cover the State-mandated topics of land use, circulation, housing, open space, conservation, safety, and noise, as well as three optional topics: economic development; health and wellness; and community services and facilities. The existing General Plan described above includes several amendments to the 1992 General Plan Land Use Map made to enact major recent planning initiatives undertaken by the City, including the Area 3 and 4 Specific Plan, the 2009-2014 Housing Element, and the Dumbarton TOD Specific Plan. Additionally, the City has prepared and adopted a Climate Action Plan (CAP; City of Newark 2010a). The 2013 General Plan land use designations allow for development of 2,500 new homes, 195,000 square feet of professional office and other commercial uses, 35,000 square feet of new retail uses, and 16.3 acres of parkland in this focus area, including a connection to the San Francisco Bay Trail. Additionally, the 2013 General Plan emphasizes the application of green building and sustainable development principles in the design of buildings, streetscapes, and landscapes throughout the city, including the Dumbarton TOD Specific Plan focus area.

City of Newark Climate Action Plan

The CAP was prepared to identify and evaluate feasible and effective policies to reduce GHG emissions in order to reduce energy costs, protect air quality, and improve the economy and the environment. The CAP identifies a 5-percent GHG reduction target from 2005 municipal emissions by July 2012, a five percent reduction in city and community emissions by July 2015, and a 15-percent decrease in communitywide emissions from 2005 levels by 2020. Data collected by the City through the GHG monitoring process shows that the City has already achieved the first two of these goals (City of Newark 2013a).

3.2.4 Existing Greenhouse Gas Levels

Global, National, State and Local GHG Emissions

In the year 2011, total GHG emissions worldwide were estimated at 43,646 MMT CO₂e (World Resources Institute 2014). The United States contributed the second largest portion of GHG emissions (behind China) at 15 percent of global emissions. The total U.S. GHGs were 6,526 MMT CO₂e in 2012 (USEPA 2014). On a national level, approximately 28 percent of GHG emissions were associated with transportation and about 32 percent were associated with electricity generation. In 2012, California produced a total of 459 MMT CO₂e (CARB 2014c). The transportation sector is the single largest category of California's GHG emissions, accounting for 37 percent of emissions statewide in 2012 (CARB 2014c).

According to the City of Newark GHG Inventory that was prepared for the updated General Plan, the City of Newark's total community emissions totaled 470,586 MTCO₂e in 2012. The largest contributor of GHG in the community was the transportation category, which comprised 57 percent (236,354 MT CO₂e) of the total amount. The second highest contributor was the nonresidential energy category, which contributed 122,054 MT CO₂e, or 29 percent of the total.

4.0 METHODOLOGY AND THRESHOLDS OF SIGNIFICANCE

4.1 METHODOLOGY

4.1.1 Construction Emissions

Emissions from the construction phase of the Project are assessed using the CalEEMod Version 2013.2.2. The CalEEMod utilizes emission factors from CARB's OFFROAD2011 and EMFAC2011 models for off-road equipment and on-road vehicles, respectively. The construction analysis included modeling of the projected construction equipment that would be used during each construction activity. The analysis assessed maximum daily emissions from individual construction activities, including demolition, grading, underground infrastructure/utilities, building construction, paving, and architectural coating. For modeling purposes it was assumed Project development would begin February 2016 and end March 2020. A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report.

Construction emission calculations assume the use of USEPA Tier 2 emissions compliant off-road equipment and the implementation of standard dust control measures, including watering two times daily during grading, ensuring that all exposed surfaces maintain a minimum soil moisture of 12 percent, and limiting vehicle speeds on unpaved roads to 15 mph. Other Project features listed in Section 1.4 are not quantified or incorporated into the CalEEMod emissions analysis due to limited information on the amount of emission reductions. Therefore, estimated emissions in this report are likely to be conservative.

Architectural coatings were assumed to be compliant with the Dumbarton TOD Specific Plan, which contains a design measure of using low VOC coatings beyond local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings). The model assumed the VOC content of exterior and interior coatings would be no higher than 50 grams per liter (g/l).

4.1.2 Operation Emissions

Operational impacts were estimated using CalEEMod. Operational emissions typically include mobile sources (vehicle trips) and area sources. The emissions from mobile sources were calculated with the trip rates provided in the Gateway Station West Transportation Evaluation (Fehr & Peers 2015), CalEEMod default trip lengths, and emission factors from EMFAC2011. Reductions from Low Carbon Fuel Standards and Pavley I standard are reflected in GHG emissions for scenario years 2011 and after. Area sources of air pollutant and GHG emissions include natural gas combustion from water and space heating, landscape equipment, consumer products, and architectural coatings (such as paint). Operational emissions were calculated using CalEEMod defaults. All modeling output files are provided in Appendix A of this report.

Mobile source emissions for the proposed Project were calculated using an average daily trip (ADT) estimate of 4,838 trips (3,056 ADT from the 321 single-family dwelling units and 1,782 ADT from the 268 multi-family dwelling units) based on the Gateway Station West Transportation Evaluation (Fehr & Peers 2015). This trip estimate is before the 9-percent

internal capture rate included in the traffic analysis and, therefore, represents a conservative assumption.

Operational emission estimates take into account the following Project design features into CalEEMod for the Project:

- Increase in land use density;
- Energy efficiency of at least 20 percent beyond 2013 Title 24;
- Use of low VOC coatings and cleaning supplies;
- Installation of only natural gas fireplaces; and
- Reduce water use by at least 20 percent.

Other Project features listed in Section 1.4 are not quantified or incorporated into the CalEEMod emissions analysis due to limited information on the amount of emission reductions. Therefore, estimated emissions in this report are likely to be conservative.

4.1.3 TAC Impacts to Sensitive Receptors

In addition to impacts from criteria pollutants, Project impacts may include emissions of pollutants identified by the state as TACs. BAAQMD Regulation 2, Rule 5 establishes acceptable risk levels and emission control requirements for new and modified facilities that may emit additional TACs. Under Rule 5, emissions of TACs that result in a cancer risk of more than 10 in 1 million, or a health hazard index of more than 1, are considered to have a significant impact.

With regard to evaluating whether a project would have a significant impact on sensitive receptors, air quality regulators typically define sensitive receptors as schools (preschool through 12th grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. BAAQMD recommends that all TAC and particulate PM_{2.5} sources be identified within a 1,000-foot radius of a proposed Project site to determine any risk and health hazards. Any project that has the potential to directly impact a sensitive receptor located within one-quarter mile and results in a health risk greater than 10 in 1 million would cause a potentially significant impact.

A Health Risk Assessment (HRA) conducted for carcinogens is typically for a period of 70 years; however, due to the short construction duration of the proposed Project, it is not meaningful to estimate quantitative carcinogenic health risks for this Project.

Other potential sources of TAC on future residents would include diesel exhaust emissions from the nearby locomotive commuter trains operations. To determine the risk to the new residents, a health risk assessment was conducted using the U.S. Environmental Protection Agency's SCREEN3 Gaussian plume dispersion model and the Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Risk Assessment Guidelines* (August 2003).

4.1.4 Odors

Potential odor impacts are evaluated by conducting a qualitative screening-level analysis in accordance with the guidance provided in the BAAQMD's 2010 CEQA Air Quality Guidelines, consisting of reviewing the proposed Project's site plan and description to identify any new or modified odor sources or the exposure of a new receptor to existing or planned odor sources.

4.2 SIGNIFICANCE CRITERIA

4.2.1 Air Quality

According to Appendix G of the State CEQA Guidelines, a project would have a significant air quality environmental impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
4. Expose sensitive receptors (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes which could be impacted by air pollutants) to substantial pollutant concentrations; or
5. Create objectionable odors affecting a substantial number of people.

The BAAQMD adopted CEQA Guidelines in June 2010, which were revised in May 2011. The BAAQMD's CEQA Guidelines include methodology and thresholds for criteria air pollutant impacts and community health risk for project-level analyses. The BAAQMD's emission-specific thresholds (shown in Table 6, *BAAQMD Air Pollutant Thresholds*) are applicable as a screening criterion for potential significance.

**Table 6
BAAQMD AIR POLLUTANT THRESHOLDS**

Pollutant	Construction-Related	Operational-Related	
	Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)	Maximum Annual Emissions (tons/year)
Carbon Monoxide (CO)	none	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
Nitrogen Oxides (NO _x)	54	54	10
Particulate Matter Exhaust (PM ₁₀)	82	82	15
Fine Particulate Matter Exhaust (PM _{2.5})	54	54	10
PM ₁₀ and PM _{2.5} Fugitive Dust	BMPs	none	
Sulfur Oxides (SO _x)	-	-	-
Lead and Lead Compounds	-	-	-
Volatile Organic Compounds (VOC)	54	54	10

Source: BAAQMD CEQA Guidelines May 2010.

4.2.2 TAC Impacts to Sensitive Receptors

In addition to impacts from criteria pollutants, Project impacts may include emissions of pollutants identified by the state and federal government as TACs or Hazardous Air Pollutants (HAPs).

With regard to evaluating whether a project would have a significant impact on sensitive receptors, air quality regulators typically define sensitive receptors as schools (preschool through 12th grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, because the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public. Any project that has the potential to directly impact a sensitive receptor located within one-quarter mile and results in a health risk greater than 10 in 1 million would have a potentially significant impact.

The BAAQMD’s significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and PM_{2.5} because emissions of these pollutants can have significant health impacts at the local level. The City of Newark is not in one of the six affected communities identified in BAAQMD’s CARE program. The City of Newark and Alameda County do not have a qualified risk reduction plan for this area. For assessing community risk and hazards, sources within a 1,000-foot radius are considered. Sources are

defined as freeways, high volume roadways (with volume of 10,000 vehicles or more per day or 1,000 trucks per day), distribution centers, and permitted sources.

4.2.3 Odors

BAAQMD's thresholds for odors are qualitative. The BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.

4.2.4 Greenhouse Gases

Given the relatively small levels of emissions generated by a typical residential development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts.

According to Appendix G of the State CEQA Guidelines, the following criteria may be considered in establishing the significance of GHG emissions:

Would the project:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

As discussed in Section 15064.4 of the State CEQA Guidelines, the determination of the significance of GHG emissions calls for a careful judgment by the lead agency, consistent with the provisions in Section 15064. Section 15064.4 further provides that a lead agency should make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project.

As shown in Table 7, *BAAQMD Greenhouse Gas Thresholds*, the BAAQMD 2010 CEQA Air Quality Guidelines does not have thresholds for construction GHG emissions; however, this report includes these emissions for informational purposes. For a project with a high-density housing option in a focused Transit Oriented Development area to meet the operational thresholds, it must show compliance with a qualified GHG reduction strategy, or be below a screening-level emission rate of 4.6 MT CO₂e per service population (residents plus employees) per year. This emission level is based on the amount of vehicle trips, the typical energy and water use, and other factors associated with projects.

Table 7 BAAQMD GREENHOUSE GAS THRESHOLDS		
Pollutant	Construction-Related	Operational-Related
	Average Daily Emissions (pounds/day)	Maximum Annual Emissions (tons/year)
GHGs – Projects other than Stationary Sources	No threshold	Compliance with Qualified GHG Reduction Strategy OR 4.6 MT CO ₂ e/SP/yr (residents + employees)

Source: BAAQMD CEQA Guidelines May 2010.

If a project generates more than 4.6 MT CO₂e/SP/yr, the significance of the GHG emissions are evaluated against the reductions from the “BAU” condition. The BAU scenario represents the emissions that would be expected to occur in the absence of any project or government-mandated GHG reduction measures.

5.0 AIR QUALITY IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed Project related to the air pollutant emissions.

5.1 CONSISTENCY WITH AIR QUALITY PLANS

The Bay Area 2010 Clean Air Plan provides a comprehensive plan to improve Bay Area air quality, protect public health, and attain state air quality standards. The purpose of the Clean Air Plan is to update the most recent ozone plan, the Bay Area 2005 Ozone Strategy, to comply with state air quality planning requirements as codified in the California Health & Safety Code. Although steady progress in reducing ozone levels in the Bay Area has been made, the region is designated as nonattainment for both the 1-hour and 8-hour state ozone standards. The Clean Air Plan includes all feasible measures to reduce emissions of ozone precursors and to reduce transport of ozone precursors to neighboring air basins.

In addition, the Bay Area is designated as nonattainment for the national and state PM_{2.5} standards. In anticipation of future PM_{2.5} SIP planning requirements, the BAAQMD included plans and control measures for attaining the PM_{2.5} NAAQS in the Clean Air Plan. Other pollutants are also addressed, such as air toxics and GHGs.

The Clean Air Plan accommodates emissions from all sources, including natural sources, through implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the USEPA and the CARB, and the emissions and reduction strategies related to mobile sources are considered in the Clean Air Plan and SIP (BAAQMD 2010).

The Clean Air Plan relies on information from CARB and MTC, including projected growth in the City of Newark, mobile, area, and all other source emissions in order to project future emissions and determine from that the strategies necessary for the reduction of stationary source emissions through regulatory controls. The CARB mobile source emission projections and MTC growth projections are based on population and vehicle trends and land use plans developed by the cities and by the counties within the Bay Area. As such, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the Clean Air Plan. In the event that a project would propose development that is less dense than anticipated within the general plan, the project would likewise be consistent with the Clean Air Plan.

Although the proposed Project would replace existing undeveloped areas with residential development, the proposed Project is part of a larger project included in the 2013 General Plan, and the Project is consistent with the development envisioned in the Dumbarton TOD Specific Plan.

Buildout of the proposed Project would be consistent with the 2010 Bay Area Clean Air Plan (BAAQMD 2010) because the Project-added vehicle trips would not produce off-site transportation impacts that were not already addressed in the Specific Plan EIR (Fehr & Peers 2015).

The number of dwelling units proposed for construction on Parcel 1 of PM9837 (589 units) falls within the maximum number of units allowed for the Parcel in the Specific Plan (652 units). As such, land uses and densities are consistent with parcel-specific land uses identified in the Dumbarton TOD Specific Plan, and the total residential units would be consistent with the allowed number of dwelling units contemplated in the Dumbarton TOD Specific Plan and 2013 Updated General Plan. Further, the Project would not generate significant amounts of air pollutant emissions during construction or operation (see Section 5.2) and would implement standard dust control measures required by the BAAQMD and the Dumbarton TOD Specific Plan EIR. Therefore, the Project is consistent with the Clean Air Plan and impacts would be less than significant. No mitigation measure is required.

5.2 CONFORMANCE TO FEDERAL AND STATE AIR QUALITY STANDARDS

The Project would generate criteria pollutants in the short term during construction and the long term during operation. Construction and future operational emissions were conducted to determine the proposed Project's emissions.

5.2.1 Construction

Project construction emissions were estimated using the CalEEMod model. Project-specific input was based on general information provided in Section 1.0, Project Description, and default model settings to estimate reasonable worst-case conditions. Table 8, *Construction Phases and Equipment*, lists the equipment assumed to be involved in construction. Additional details of phasing, selection of construction equipment, areas to be paved, and other input parameters, including CalEEMod data, are included in Appendix A.

Construction Phase	Duration (months)	Equipment	Number Used Daily
Demolition	1.5	Concrete/Industrial Saws	1
		Excavators	3
		Rubber Tired Dozers	2
Grading	4	Excavators	2
		Graders	1
		Rubber Tired Dozers	1
		Scrapers	2
		Tractors/Loaders/Backhoes	2
Underground Infrastructure/Utilities	6	Excavators	1
		Trenchers	1
Paving	2.5	Pavers	2
		Paving Equipment	2
		Rollers	2
Building Construction	34	Cranes	1
		Forklifts	3
		Generator sets	1
		Tractors/Loaders/Backhoes	3
		Welders	1
Architectural Coating	26	Air Compressors	1

Source: CalEEMod default list of off-road equipment. 2013.

Output emissions include off-road equipment exhaust; on-road vehicle exhaust; fugitive dust from grading and vehicle travel on paved and unpaved roads; and VOCs from asphalt and architectural coatings.

Architectural coatings were assumed to be compliant with the Dumbarton TOD Specific Plan Program EIR, which requires the use of low VOC coatings, beyond the local requirements of Regulation 8, Rule 3. The VOC content for exterior and interior coatings would be 50 g/l or lower, and architectural coatings would be spread out over a six-month period.

Table 9, *Maximum Daily Construction Emissions*, presents a summary of construction emissions for each construction activity.

Based on the assumed construction schedule, the maximum daily emissions for NO_x, PM₁₀, and PM_{2.5} occur during the grading phase. The maximum daily emissions for ROG, CO, and SO_x occur when the building construction phase overlaps with the application of architectural coatings.

**Table 9
MAXIMUM DAILY CONSTRUCTION EMISSIONS**

Phase	Pollutant Emissions (pounds per day)					
	ROG	NO _x	CO	SO _x	Exhaust PM ₁₀	Exhaust PM _{2.5}
Demolition	1	34	26	<1	<1	<1
Grading	6	95	82	<1	1	1
Underground Infrastructure/Utilities	<1	8	7	<1	<1	<1
Paving	2	20	18	<1	<1	<1
Building Construction	7	48	94	<1	1	1
Architectural Coatings	14	3	8	<1	<1	<1
Maximum Daily Emissions	20	95	96	<1	1	1
Significance Thresholds	54	54	-	-	82	54
Significant Impact?	No	Yes	No	No	No	No

Source: CalEEMod (output data is provided in Appendix A)

Notes: (1) Emissions were calculated for both summer and winter months. On average winter emissions were higher and therefore were used for this analysis. (2) Assumes USEPA Tier 2 off-road equipment and Level 2 diesel particulate filters. (3) Includes Low VOC coatings (50 g/l).

The BAAQMD does not list thresholds for significance for fugitive dust, but rather, includes BMPs to reduce fugitive dust emissions. The Project would utilize the BMPs included in Section 1.4 in order to comply with this guidance as well as with the Dumbarton TOD Specific Plan EIR. As illustrated in Table 9, Project construction emissions would exceed the BAAQMD’s significance threshold for NO_x.

Mitigation Measure

The following mitigation measure is prescribed to reduce construction related NO_x emissions.

MM Air-1 Tier 4 Off-road Construction Equipment. Prior to the issuance of any Grading Permit, the Public Works Director and the Building Official shall confirm that the Grading Plan, Building Plans, and specifications stipulate that all diesel-powered off-road equipment used during the grading phase shall meet Tier 4 final off-road emissions standards. A copy of each unit’s certified Tier specification shall be provided to the City Building Department at the time of mobilization of each applicable unit of equipment.

Significance After Mitigation

Mitigation Measure (MM) Air-1 would reduce NO_x emissions from off-road equipment during the grading phase. As presented in Table 10, *Maximum Daily Construction Emissions with Mitigation*, with inclusion of MM Air-1, emissions of all criteria pollutants related to Project construction would be below the BAAQMD’s significance threshold. Thus, direct impacts from criteria pollutants generated during construction would be less than significant with mitigation.

Table 10
MAXIMUM DAILY CONSTRUCTION EMISSIONS WITH MITIGATION

Phase	Pollutant Emissions (pounds per day)					
	ROG	NO _x	CO	SO _x	Exhaust PM ₁₀	Exhaust PM _{2.5}
Demolition	1	34	26	<1	<1	<1
Grading	4	48	79	<1	1	1
Underground Infrastructure/Utilities	<1	8	7	<1	<1	<1
Paving	2	20	18	<1	<1	<1
Building Construction	7	48	94	<1	1	1
Architectural Coatings	14	3	8	<1	<1	<1
Maximum Daily Emissions	20	49	96	<1	1	1
Significance Thresholds	54	54	-	-	82	54
Significant Impact?	No	No	No	No	No	No

Source: CalEEMod (output data is provided in Appendix A)

Notes: (1) Emissions were calculated for both summer and winter months. On average winter emissions were higher and therefore were used for this analysis. (2) Assumes USEPA Tier 4 off-road equipment and Level 2 diesel particulate filters during Grading, and Tier 2 off-road equipment and Level 2 diesel particulate filters for all other phases. (3) Includes Low VOC coatings (50 g/l).

5.2.2 Operation

Evaluation of operational emissions is analyzed based on the increase of emissions from the proposed Project, as discussed in Section 4.1, *Methodology*. As illustrated in Table 11, *Operation Daily Maximum Emissions (2017) – Proposed Project*, the increase of daily maximum operational emissions related to the Project would be below the BAAQMD’s significance criteria for all criteria pollutants, and would not result in a significant direct impact related to operational emissions. No mitigation would be required.

Table 11
OPERATION DAILY MAXIMUM EMISSIONS (2017) – PROPOSED PROJECT

Emission Source	Pollutant Emissions (pounds/day)					
	VOC	NO _x	CO	SO _x	Exhaust PM ₁₀	Exhaust PM _{2.5}
Area	24	1	49	<1	1	1
Energy	<1	4	2	<1	<1	<1
Mobile	16	43	178	<1	1	1
TOTAL	40	48	228	<1	2	2
Significance Threshold	54	54	-	-	82	54
Significant Impact?	No	No	No	No	No	No

Source: CalEEMod (output data is provided in Appendix A)

Notes: (1) Emissions were calculated for both summer and winter months. On average winter emissions were higher and therefore were used for this analysis. (2) Emissions from the proposed Project include applicable design features listed in Section 1.4.

5.3 IMPACTS TO SENSITIVE RECEPTORS

The CARB describes sensitive receptors as residences, schools, day-care centers, playgrounds, medical facilities, or other facilities that may house individuals with health conditions (medical patients or elderly persons/athletes/students/children) that may be adversely affected by changes in air quality. The two primary pollutants of concern regarding health effects for residential development are CO and DPM. An analysis of the Project's potential to expose sensitive receptors to these pollutants is described below.

5.3.1 Construction Diesel Particulates

Construction activities are sporadic, transitory, and short-term in nature, and once construction activities have ceased, so, too, have emissions from construction activities. The DPM is not included as a criteria pollutant; however, it is recognized by the State of California as containing carcinogenic compounds. The risks associated with exposure to substances with carcinogenic effects are typically evaluated based on a lifetime of cancer exposure, which is defined in the California Air Pollution Control Officers Association (CAPCOA) Air Toxics "Hot Spots" Program Risk Assessment Guidelines (CAPCOA 1993) as 24 hours per day, 7 days per week, 365 days per year, for 70 years for residences and 40 years for school children. The DPM would be emitted from heavy equipment used in the construction process. The proposed construction period of less than four years is much less than the 70-year/40-year period used for health risk determination. As shown in Table 9, emissions of PM during construction (which includes equipment emissions) would be below significance thresholds. Further, because diesel particulates are considered to have long-term health effects and construction would be a short-term event, emissions would not result in a significant long-term health risk to surrounding receptors. Therefore, potential construction impacts from DPM are considered less than significant and no mitigation is required.

5.3.2 Carbon Monoxide Hot Spots

The BAAB is designated as attainment for CO. As indicated in the BAAQMD CEQA Air Quality Guidelines, ambient concentrations of CO have decreased dramatically in the BAAB with the introduction of the catalytic converter in 1975. No exceedances of the CAAQS or NAAQS for CO have been recorded at nearby monitoring stations since 1991. As a result, the screening criteria in the BAAQMD's CEQA Air Quality Guidelines notes that CO impacts may be determined to be less than significant if a project is consistent with the applicable congestion management plan or would not increase traffic volumes at intersections to more than 44,000 vehicles per hour for regular intersections, or would not increase traffic volumes at intersections to more than 24,000 vehicles per hour for intersections with limited mixing zones (e.g., tunnels, garages, overpasses, etc.).

Based on the traffic data presented in Section 4.14 (Traffic) of the Dumbarton TOD Specific Plan EIR, the projects included in the Specific Plan would not cause traffic volumes at local intersections to increase beyond 6,000 vehicles per hour. The intersection of Newark Boulevard and Jarvis Avenue would have the greatest traffic volumes with 5,652 vehicles per hour during Cumulative Plus Specific Plan Projects conditions. According to Fehr & Peers (2015), the proposed Project is anticipated to account for approximately 31 percent of the total generated

trips included in the Specific Plan. Therefore, the proposed Project would not increase traffic volumes to 44,000 vehicles per hour for regular intersections, nor would the Project increase traffic volumes to more than 24,000 vehicles per hour for intersections with limited mixing zones. Therefore, effects related to proposed Project CO concentrations would be less than significant.

5.3.3 Operational Diesel Particulates

Exposure to DPM generated by traffic on roadways is a concern identified in the CARB Air Quality and Land Use Handbook. The CARB guidelines indicate that siting new sensitive land uses (such as senior housing) within 500 feet of a freeway or an urban road with 100,000 vehicles per day should be avoided. The nearest major freeway to the Project site (Interstate 880) is located more than two miles east from the Project site and is outside of the avoidance guidelines. The CARB also recommends siting sensitive land uses more than 1,000 feet from distribution centers. The nearest distribution center to the Project site appears to be approximately 1,500 feet to the northeast. Both Interstate 880 and the nearest distribution center are outside the avoidance guidelines and downwind of the Project site.

The Dumbarton TOD Specific Plan would provide space for a multimodal transit station that would include commuter train service. The Dumbarton Rail Transit Station would provide commuter rail service from the Union City Intermodal Transit Center across the Dumbarton Bridge to Menlo Park and finally connect to the Caltrain service that runs from San Francisco to San Jose. Although future rail uses would utilize cleaner diesel engines, a worst-case scenario would include the operation of six diesel trains per day with three to five minutes of locomotive idling during each stop at the station. Based on the land use plan for the proposed Project, high-density residential uses would be located approximately 650 feet from the proposed transit station. The BAAQMD identifies diesel trains as a common source of DPM emissions and recommends a buffer distance of at least 1,000 feet between the locomotives and residences. Because the Project would cite new residences within the 1,000 foot buffer, a health risk analysis is required.

The USEPA SCREEN3 model, the screening air dispersion modeling method approved by the CARB for such assessments, was used to estimate concentrations of DPM from the transit station to the Project. The DPM emissions were estimated using emission factors provided in the USEPA's April 2009 *Technical Highlights – Emission Factors for Locomotives*. It was estimated that locomotives would result in 1.15 grams of DPM per day. Detailed modeling assumptions are included in Appendix A of this report.

Cancer Health Risk Assessment Methodology

The cancer risk is calculated by multiplying the annual average concentrations calculated using the SCREEN3 model and an inhalation exposure factor as in Equation 1 below (Office of Environmental Health Hazard Assessment 2003).

$$\text{Cancer Risk} = \text{CPF} \times \text{Dose-inhalation}$$

Where:

Cancer Risk = Total individual lifetime excess cancer risk defined as the cancer risk a hypothetical individual faces if exposed to carcinogenic emissions from a particular facility; this risk is defined as an excess risk because it is above and beyond the background cancer risk to the population contributed by emission sources not related to the Project; cancer risk is expressed in terms of risk per million exposed individuals.

CPF = Cancer Potency Factor (1.1 mg/kg-day)

$$\text{Dose-inhalation} = (\text{Cair} \times \text{DBR} \times \text{A} \times \text{EF} \times \text{ED}) / \text{AT}$$

Where:

Cair = annual average concentration

DBR = daily breathing rate (302 liters/kg-day),

A = inhalation absorption factor (1)

EF = exposure frequency (350 days/year)

ED = exposure duration (70 years)

AT = average time period over which the exposure is averaged (25,550 days).

Cair is the annual average concentration at the closest receptor calculated from SCREEN3 in $\mu\text{g}/\text{m}^3$. With the worst-case meteorological condition under SCREEN3, the highest 1-hour DPM concentration value at a residential receptor located 650 feet from the transit station was calculated to be $0.02137 \mu\text{g}/\text{m}^3$. The SCREEN3 model outputs and screening health risk calculations are provided in Appendix A of this report

Non-Cancer Health Risk Characterization

Exposures to TACs such as DPM can also cause chronic (long-term) and acute (short-term) related non-cancer illnesses such as reproductive effects, respiratory effects, eye sensitivity, immune effects, kidney effects, blood effects, central nervous system, birth defects, or other adverse environmental effects. Risk characterization for non-cancer health risks is expressed as Hazard Index (HI). The HI is a ratio of the predicted concentration of a project's emissions to a concentration considered acceptable to public health professionals, termed the REL. When evaluating chronic non-cancer effects resulting from TAC exposures, a hazard quotient (HQ) is

established for each individual TAC as follows and for each target organ affected by the individual TAC:

$$HI = C_{air} / REL_i$$

Where:

HI = chronic hazard index

C_{air} = Annual average concentration ($\mu\text{g}/\text{m}^3$)

REL = Chronic Reference Exposure Level ($\mu\text{g}/\text{m}^3$)

To evaluate the potential for adverse non-cancer health effects from simultaneous exposure to multiple TACs, the HQs for all TACs that affect the same target organ are summed yielding a hazard index (HI) as follows:

$$HI_{to} = \sum_{i=1}^n HQ_{tac}$$

Where:

HI_{to} = sum of the hazard quotients for all TACs affecting the same target organ

HQ_{tac} = hazard quotient for TAC and target organ.

The OEHHA has assigned a chronic non-cancer REL of $5 \mu\text{g}/\text{m}^3$ for DPM (OEHHA 2003). DPM has effects on the respiratory system, which accounts for essentially all of the potential chronic non-cancer hazards from DPM. Therefore, the only HI calculated was for the respiratory system.

Table 12, *Health Risk Assessment Results*, provides the results of the health risk assessment along with the BAAQMD's Significance health risk thresholds. As shown in the table, the Project would not exceed the significance thresholds for cancer risk and chronic non-cancer hazard.

Table 12 HEALTH RISK ASSESSMENT RESULTS			
Metric	Dispersion Model Estimate¹	Significance Threshold	Exceeds Threshold?
Cancer Risk	0.68 in 1 million	10 in 1 million	No
Chronic Non-Cancer HI	0.0004	1.0	No

¹ Computed at the nearest sensitive receptor located approximately 650 feet south of the transit station.

5.4 ODORS

According to the BAAQMD's CEQA Air Quality Guidelines, land uses associated with odor complaints typically include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. Odor impacts generally occur from either siting a new odor source (e.g., the project includes a proposed odor source near existing sensitive receptors), or siting a new receptor (e.g., the project includes

proposed sensitive receptors near an existing odor source). The Project involves construction of single family homes, townhomes, and senior housing. These uses are not identified as major sources of odor emissions according to the CARB Air Quality and Land Use Handbook. The Project would not be a source of nuisance odors associated with operations.

The Project would not be located in close proximity to any facilities that are typically associated with odor complaints as identified by the BAAQMD. The surrounding land uses are characterized by existing and former industrial parcels, with nearby business/professional centers and residential lots. To the north of the site is the former FMC Corporation facility and the existing Union Pacific Railroad corridor, to the east is the former Ashland Chemical Company and Torian facility, to the south is the Plummer Creek Wetland Mitigation Bank, and to the west are the Cargill solar salt basins. The commercial industrial uses generally include business park complexes and do not consist of wastewater treatment plants, landfills, animal facilities, or any other uses associated with odors. There are also reports of odors that are caused by algae in the salt basins. However, these odors are regarded as an annoyance rather than a health hazard. Based on the nature of the odor source and the low frequency of odor events generated by the salt basins, impacts are not considered a significant odor source. Additionally, salt basins are not identified by the BAAQMD as a significant odor source. Therefore, the proposed residential uses would not be exposed to significant sources of objectionable odors and mitigation measures are not required.

6.0 GREENHOUSE GAS IMPACT ANALYSIS

This section evaluates potential impacts of the proposed Project related to the generation of GHG emissions.

6.1 CONSISTENCY WITH LOCAL PLANS ADOPTED FOR THE PURPOSE OF REDUCING GHG EMISSIONS

The City has adopted a CAP for reducing GHG emissions. As discussed in Section 3.2.3, Local GHG Regulations, this plan establishes reduction goals and provides actions that the City, residents, and businesses can take to reduce emissions. The Project design features listed in Section 1.4 would support the policies included in the 2013 General Plan (2013a). These General Plan policies include:

Action CS-3.E Water Efficient Landscaping. Continue to implement the City's Bay Friendly Landscaping Guidelines for water-efficient landscaping, including low water use plants and more efficient irrigation systems. Adopt more stringent outdoor water use policies for individual development proposals where feasible.

Policy CS-5.1 Linking Land Use and Transportation. Encourage land use and transportation patterns that reduce dependence on automobiles. This includes siting well-designed higher-density, mixed-use development near the proposed Dumbarton Rail station and in other areas with frequent transit service.

Policy CS-5.2 Pedestrian and Bicycle Friendly Design. Ensure that new development is planned and designed to facilitate walking and bicycling as well as driving. This can potentially reduce the number of vehicle trips and related GHG emissions.

Policy CS-6.2 Encouraging Greener Construction. Encourage greener construction methods and greater use of recycled-content materials in new residential, commercial, and industrial construction projects in accordance to the latest CALGreen building standards.

Policy CS-7.1 Reducing Energy Use. Support measures to reduce energy consumption and increase energy efficiency in residential, commercial, industrial, and public buildings.

Policy CS-7.2 Renewable Energy Sources. Support the expanded use of renewable energy sources such as wind and solar by Newark residents and businesses, the City of Newark, and other government agencies.

Policy CS-7.3 Designing for Energy Efficiency. Support building design, site planning, and subdivision design methods that reduce heating and cooling costs and achieve greater energy efficiency.

Policy CS-7.5 Solar Access. Preserve solar access rights in a way that is consistent with state law, encourages the use of photovoltaic energy systems in new construction and rehabilitation projects, and balances parallel objectives to expand the urban forest and protect local trees.

The proposed Project would also be consistent with several Action Items listed in the City's CAP; namely, the proposed Project's green principles and regional smart growth planning efforts it will achieve (i.e., residential units nearby the transit station and higher density). The Project would include the installation of energy- and water-efficient systems. Furthermore, the Project would be consistent with the Action Items within the CAP and would also reduce its GHG emissions in the region. The Project is consistent with the goals and strategies of local and state plans, policies, and regulations aimed at reducing GHG emissions from land use and development. Therefore, impacts would be less than significant.

6.2 EMISSIONS OF GHG

6.2.1 Construction Emissions

GHG emissions during construction would be associated with the use of heavy equipment and by construction worker commute trips (see Table 8 for construction phases and anticipated equipment). Emissions of GHGs related to the construction of the Project would be temporary. As shown in Table 13, *Estimated Construction GHG Emissions*, total GHG emissions associated with construction are estimated at 5,981 MT of CO₂e.

Calendar Year	CO₂	CH₄	N₂O	CO₂e
2016	839	0.12	0.00	842
2017	1,592	0.12	0.00	1,594
2018	1,829	0.13	0.00	1,832
2019	1,675	0.11	0.00	1,677
2020	36	0.00	0.00	36
TOTAL (METRIC TONS)*	5,971	0.49	0.00	5,981

Source: CalEEMod (output data is provided in Appendix A)

*Totals include rounding.

The BAAQMD 2010 CEQA Air Quality Guidelines do not have guiding principles for construction GHG emissions; however, they are included here for informational purposes. Impacts would be less than significant and no mitigation measures are required.

6.2.2 Operational Emissions

The Project's GHG emissions were estimated separately for the sources of operational emissions: (1) emissions associated with energy use and area sources, including electricity and natural gas, and area sources such as hearths and landscaping equipment; (2) emissions from vehicle use; (3) emissions associated with obtaining and consuming potable water; and (4) emissions associated with solid waste generation.

Energy Use and Area Sources

Emissions associated with energy use would arise from the combustion of fossil fuels to provide energy for the proposed Project. The energy use is associated with building electricity and natural gas usage (nonhearth). The electricity energy use is expressed in kilowatt hours (kWh) per size metric for each land use subtype. Natural gas use is expressed in kilo British Thermal Units (kBtu) per size metric for each land use subtype.

At Project buildout, the largest sources of stationary GHG emissions would be electricity use. Projects that increase electricity consumption also result in an indirect increase in GHG emissions. The electricity use associated with the Project was estimated using CalEEMod defaults and exceedance of 2013 Title 24 Standards by 20 percent. The annual GHG emissions from energy use are estimated to be 1,911 MT of CO₂e per year. Approximately 39 MT of CO₂ per year would result from other area sources (primarily natural gas hearths).

Vehicle Use

As discussed in the CARB's Staff Report California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit (CARB 2007), vehicular emissions are the greatest contributor to GHG emissions. Because the applicant does not have direct control over the types of vehicles or emission/fuel standards, the effect of California-mandated programs to reduce GHG emissions from vehicles was evaluated and included in the CalEEMod model. The reductions in GHG emissions anticipated through implementation of the Federal CAFE standards and Pavley I fuel

efficiency standard (analogous to the Federal CAFE standard), as well as the effects of light/heavy vehicle efficiency/hybridization programs are included in the CalEEMod model.

Mobile-source GHG emissions were based on the projected trip generation rates of 4,838 ADT before the nine percent internal capture reduction (Fehr & Peers 2015). Based on the default CalEEMod model for projects within Alameda County, the total annual VMT was estimated at 10.8 million miles, and emissions of CO₂e vehicle GHG were estimated at 4,571 MT CO₂e per year.

Water Consumption

Water use and energy use are often closely linked. The provision of potable water requires large amounts of energy associated with the following: (1) source and conveyance, (2) water treatment, (3) distribution, (4) end use, and (5) wastewater treatment. The water consumption estimates that the land uses contribution of GHG emissions associated with supplying and treating the water and wastewater. Supplying water involves bringing the water from its primary source such as the ground, river, or snowpack to the treatment plant. Distributing the water involves conveying the water from the treatment plant to the end users. The electricity intensities are multiplied by the utility intensity factors for the GHGs and are classified as indirect emissions. The default electricity intensity is from the CEC's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for Northern California. The model results take into account the assumption that the Project would incorporate a water use reduction program, which would reduce water usage by 20 percent.

The estimate of GHG emissions from water consumption for the proposed Project is 103 MT of CO₂e per year.

Solid Waste Generation

Solid waste generated by the Project would also contribute to GHG emissions. Treatment and disposal of solid waste produces significant amounts of methane. The GHG emissions from solid waste generated by the Project were estimated using CalEEMod. The model results take into account the assumption that the Project would incorporate a solid waste reduction program, which would reduce solid waste by 75 percent. The Project would generate 58 MT of CO₂e from solid waste per year.

6.2.3 Other GHG Emissions

Ozone is also a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. According to the CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_x and VOCs) to global warming (CARB 2004). Therefore, it is assumed that emission of ozone precursors associated with the Project would not significantly contribute to climate change. At present, there is a federal ban on chlorofluorocarbons (CFCs); therefore, it is assumed that the Project would not generate emissions of this GHG. Implementation of the Project may emit a small amount of HFC emissions from leakage, service of, and from disposal at the end of the life of refrigeration and air-conditioning equipment. However, details regarding refrigerants to be used in future construction are unknown at this time. The PFCs and SF₆ are typically used in industrial

applications. No industrial applications would occur from the Project. Therefore, it is not anticipated that the Project would contribute significant emissions of these GHGs.

6.2.4 Summary

Evaluation of the GHG emissions from the proposed Project is based on the net increase in emissions compared to the baseline, as discussed in Section 3.1. Table 14, *Proposed Project Operational Annual GHG Emissions*, includes the total amount of GHG emissions expected from the Project.

The increase in GHG emissions from the Project would be 6,682 MT of CO₂e per year. The BAAQMD’s 2010 CEQA Air Quality Guidelines establishes a threshold of 4.6 MT CO₂e per service population (residents plus employees) per year. The service population for the proposed Project would be approximately 1,684 residents as estimated by CalEEMod. By factoring in the service population, the Project emissions would equal 4.0 MT CO₂e per service population per year, which is lower than the threshold. Therefore, the Project would not result in a significant impact associated with the emissions of GHG and no further analysis or mitigation is required.

Table 14 PROPOSED PROJECT OPERATIONAL ANNUAL GHG EMISSIONS				
Emission Source	Annual Emissions (metric tons/year)			
	CO₂	CH₄	N₂O	CO₂ Equivalents
Proposed Project				
Area Source	39	0.01	0.00	39
Energy Use	1,902	0.07	0.02	1,911
Mobile	4,567	0.16	0.00	4,571
Solid Waste Management	26	1.53	0.00	58
Water Consumption	75	1.00	0.02	103
OPERATIONAL TOTAL (METRIC TONS)	6,608	2.77	0.05	6,682
Projected Service Population	1,684			
NET INCREASE PER SERVICE POPULATION	4.0 MT CO₂e/SP/yr			
Significance Threshold	4.6 MT CO ₂ e/SP/yr			
<i>Significant Impact?</i>	<i>No</i>			

Source: CalEEMod. See Appendix A for model data.

Note: Service population = residents + employees

7.0 CUMULATIVE IMPACTS

7.1 AIR QUALITY

The BAAQMD considers air pollution to be largely a cumulative impact, because no single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary and the proposed Project would not have significant impacts with mitigation as per the analysis in Section 5.

7.2 GREENHOUSE GASES

Similar to regulated air pollutants, GHG emissions and global climate change also represent cumulative impacts. The GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. Climate change impacts may include an increase in extreme heat days, higher concentrations of air pollutants, sea level rise, impacts to water supply and water quality, public health impacts, impacts to ecosystems, impacts to agriculture, and other environmental impacts. No single project could generate enough GHG emissions to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects contribute substantially to the phenomenon of global climate change and its associated environmental impacts.

The BAAQMD's approach to developing a significance threshold for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move us toward climate stabilization. If a project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact and would be considered significant. Therefore, based on the analysis in Section 6, the Project would not contribute to a cumulatively considerable impact.

With incorporation of sufficient Project design features, the proposed Project would generate a net increase of 4.0 MT per service population per year of CO₂e. As this GHG emissions does not exceed the BAAQMD's screening threshold of 4.6 MT of CO₂e per service population per year, the GHG emissions related to the proposed Project would not have a significant cumulative impact with respect to climate change.

8.0 MITIGATION MEASURES

8.1 AIR QUALITY

The following mitigation measure is prescribed to reduce construction related NO_x emissions.

MM Air-1 Prior to the issuance of any Grading Permit, the Public Works Director and the Building Official shall confirm that the Grading Plan, Building Plans, and the specifications stipulate that all diesel-powered off-road equipment used during the grading phase shall meet Tier 4 final off-road emissions standards. A copy of each unit's certified Tier specification shall be provided to the City Building Department at the time of mobilization of each applicable unit of equipment.

8.2 GREENHOUSE GASES

The proposed Project would not result in a significant impact with respect to GHG emissions. Therefore, no mitigation measure is required.

9.0 REFERENCES

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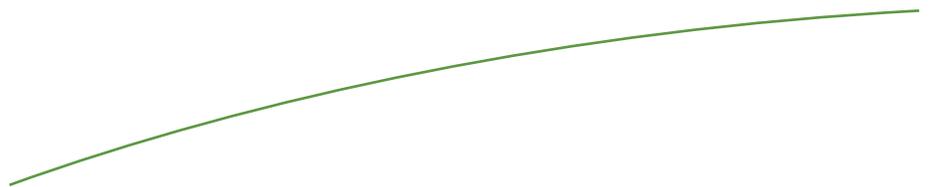
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Appendix A

AIR QUALITY DATA



Gateway Station West TOD

Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	9.35	Acre	9.35	407,286.00	0
Parking Lot	1,380.00	Space	12.42	552,000.00	0
City Park	1.13	Acre	1.13	49,222.80	0
Condo/Townhouse	268	Dwelling Unit	12.04	268,000.00	766
Single Family Housing	321	Dwelling Unit	11.63	577,800.00	918

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2019

Utility Company Pacific Gas & Electric Company

CO2 Intensity	641.35	CH4 Intensity	0.029	N2O Intensity	0.006
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1.3 User Entered Comments & Non-Default Data

Land Use - Land Use based on "Title Sheet and Site Plan Vesting Tentative Map Tract 8099 Gateway Station West"

Construction Phase - Based on data provided by Urban Arena and model defaults

Architectural Coating - Per Dumbarton TOD design feature: low VOC coatings beyond Regulation 8 Rule 3

Vehicle Trips - Trip generation rates based on Fehr & Peers Gateway Station West Transportation Analysis Memorandum dated 1/19/2015

Construction Off-road Equipment Mitigation - PDFs: Tier 2, water twice a day to maintain 12% moisture content, and limit vehicle speed.

Area Mitigation - Regulation 8, Rule 3: Architectural Coatings

Energy Mitigation - CalEEMod includes 2008 Title 24. 2013 Title 24 increases energy efficiencies by 25%. Project would exceed 2013 Title 24 by 20%. (1-

Notes: Blue shading indicates ROG data revised to correct consumer products errors in CalEEMod

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150	50
tblArchitecturalCoating	EF_Nonresidential_Interior	100	50
tblArchitecturalCoating	EF_Residential_Exterior	150	50
tblArchitecturalCoating	EF_Residential_Interior	100	50
tblAreaMitigation	UseLowVOCPaintNonresidentialExterio	150	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInterior	100	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorVa	150	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorVal	100	50
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0	1
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	1
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	1
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	6
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	1
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	1
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	5
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	1
tblConstEquipMitigation	NumberOfEquipmentMitigated	0	1
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	55	555
tblConstructionPhase	NumDays	50	34
tblConstructionPhase	NumDays	75	86
tblConstructionPhase	PhaseEndDate	1/18/2022	3/18/2020
tblConstructionPhase	PhaseEndDate	7/29/2016	7/31/2016
tblConstructionPhase	PhaseEndDate	4/18/2017	1/31/2017
tblConstructionPhase	PhaseStartDate	12/4/2019	2/1/2018
tblConstructionPhase	PhaseStartDate	2/1/2017	11/16/2016
tblGrading	MaterialImported	0	100,000.00
tblLandUse	LotAcreage	16.75	12.04
tblLandUse	LotAcreage	104.22	11.63
tblProjectCharacteristics	OperationalYear	2014	2019
tblSequestration	NumberOfNewTrees	0	1,000.00
tblVehicleTrips	ST_TR	1.59	0
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	ST_TR	10.08	9.52
tblVehicleTrips	SU_TR	1.59	0
tblVehicleTrips	SU_TR	6.07	6.65
tblVehicleTrips	SU_TR	8.77	9.52
tblVehicleTrips	WD_TR	1.59	0
tblVehicleTrips	WD_TR	6.59	6.65
tblVehicleTrips	WD_TR	9.57	9.52

**2.2 Overall Operational
Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	694.88509	9.4507	862.0309	0.2819		114.377	114.377		114.3717	114.3717	11,852.14	8,091.27	19,943.41	9.8758	1.0106	20,464.10
Energy	0.6762	5.7786	2.459	0.0369		0.4672	0.4672		0.4672	0.4672		7,376.93	7,376.93	0.1414	0.1352	7,421.83
Mobile	15.9402	43.2072	177.8499	0.3389	23.0429	0.5846	23.6275	6.1731	0.5387	6.7118		27,522.85	27,522.85	0.9865		27,543.57
Total	711.50149	58.4364	1,042.34	0.6576	23.0429	115.4288	138.4718	6.1731	115.3776	121.5506	11,852.14	42,991.06	54,843.20	11.0037	1.1459	55,429.50

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	23.858388	0.567	49.0398	2.58E-03		1.0597	1.0597		1.0514	1.0514	0	12,587.00	12,587.00	0.3263	0.2292	12,664.89
Energy	0.4386	3.7478	1.5948	0.0239		0.303	0.303		0.303	0.303		4,784.43	4,784.43	0.0917	0.0877	4,813.54
Mobile	15.9402	43.2072	177.8499	0.3389	23.0429	0.5846	23.6275	6.1731	0.5387	6.7118		27,522.85	27,522.85	0.9865		27,543.57
Total	40.237188	47.522	228.4845	0.3654	23.0429	1.9473	24.9903	6.1731	1.8931	8.0661	0	44,894.28	44,894.28	1.4045	0.3169	45,022.00

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent	91.7	18.68	78.08	44.44	0	98.31	81.95	0	98.36	93.36	100	-4.43	18.14	87.24	72.35	18.78

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num	Num Days	Phase Description
1	Demolition	Demolition	2/15/2016	3/31/2016	5	34	
2	Grading	Grading	4/1/2016	7/31/2016	5	86	
3	Underground	Trenching	8/1/2016	1/31/2017	5	132	
4	Paving	Paving	11/16/2016	1/31/2017	5	55	
5	Building Construction	Building Construction	2/1/2017	12/3/2019	5	740	
6	Architectural Coating	Architectural Coating	2/1/2018	3/18/2020	5	555	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 215

Acres of Paving: 0

Residential Indoor: 1,712,745; Residential Outdoor: 570,915; Non-Residential Indoor: 709,603; Non-Residential Outdoor: 236,534

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8	81	0.73
Demolition	Excavators	3	8	162	0.38
Demolition	Rubber Tired Dozers	2	8	255	0.4
Grading	Excavators	2	8	162	0.38
Grading	Graders	1	8	174	0.41
Grading	Rubber Tired Dozers	1	8	255	0.4
Grading	Scrapers	2	8	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37
Underground Infrastructure/Utilities	Excavators	1	8	162	0.38
Underground Infrastructure/Utilities	Trenchers	1	8	80	0.5
Paving	Pavers	2	8	125	0.42
Paving	Paving Equipment	2	8	130	0.36
Paving	Rollers	2	8	80	0.38
Building Construction	Cranes	1	7	226	0.29
Building Construction	Forklifts	3	8	89	0.2
Building Construction	Generator Sets	1	8	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37
Building Construction	Welders	1	8	46	0.45
Architectural Coating	Air Compressors	1	6	78	0.48

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Demolition	6	15	0	23	12.4	7.3	20	LD_Mix	HDT_Mix	HHDT
Grading	8	20	0	12,500.00	12.4	7.3	20	LD_Mix	HDT_Mix	HHDT
Underground	2	5	0	0	12.4	7.3	20	LD_Mix	HDT_Mix	HHDT
Paving	6	15	0	0	12.4	7.3	20	LD_Mix	HDT_Mix	HHDT
Building Construction	9	732	228	0	12.4	7.3	20	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	146	0	0	12.4	7.3	20	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

- Use Cleaner Engines for Construction Equipment
- Use DPF for Construction Equipment
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

3.2 Demolition - 2016
Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					0.1448	0	0.1448	0.0219	0	0.0219			0			0
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.28	4,089.28	1.1121		4,112.64
Total	4.2876	45.6559	35.0303	0.0399	0.1448	2.2921	2.4369	0.0219	2.1365	2.1585		4,089.28	4,089.28	1.1121		4,112.64

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0165	0.2061	0.2014	5.10E-04	0.0118	2.66E-03	0.0145	3.23E-03	2.45E-03	5.68E-03		51.3874	51.3874	3.90E-04		51.3955
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0616	0.0929	0.8557	1.61E-03	0.1415	1.16E-03	0.1426	0.0375	1.07E-03	0.0386		135.4594	135.4594	7.73E-03		135.6217
Total	0.0781	0.299	1.0571	2.12E-03	0.1533	3.82E-03	0.1571	0.0408	3.52E-03	0.0443		186.8467	186.8467	8.12E-03		187.0171

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					0.0651	0	0.0651	9.86E-03	0	9.86E-03			0			0
Off-Road	1.2905	33.4676	25.2649	0.0399		0.4669	0.4669		0.4669	0.4669	0	4,089.28	4,089.28	1.1121		4,112.64
Total	1.2905	33.4676	25.2649	0.0399	0.0651	0.4669	0.532	9.86E-03	0.4669	0.4768	0	4,089.28	4,089.28	1.1121		4,112.64

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0165	0.2061	0.2014	5.10E-04	0.0118	2.66E-03	0.0145	3.23E-03	2.45E-03	5.68E-03		51.3874	51.3874	3.90E-04		51.3955
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0616	0.0929	0.8557	1.61E-03	0.1415	1.16E-03	0.1426	0.0375	1.07E-03	0.0386		135.4594	135.4594	7.73E-03		135.6217
Total	0.0781	0.299	1.0571	2.12E-03	0.1533	3.82E-03	0.1571	0.0408	3.52E-03	0.0443		186.8467	186.8467	8.12E-03		187.0171

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8048	0	8.8048	3.6164	0	3.6164			0			0
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.98	6,414.98	1.935		6,455.62
Total	6.4795	74.8137	49.1374	0.0617	8.8048	3.5842	12.3891	3.6164	3.2975	6.9139		6,414.98	6,414.98	1.935		6,455.62

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.544	44.2898	43.2726	0.1098	2.5355	0.5718	3.1073	0.6944	0.5259	1.2203		11,041.27	11,041.27	0.0829		11,043.01
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0821	0.1239	1.1409	2.15E-03	0.1886	1.55E-03	0.1902	0.05	1.42E-03	0.0515		180.6125	180.6125	0.0103		180.8289
Total	3.6261	44.4137	44.4135	0.1119	2.7241	0.5733	3.2974	0.7444	0.5273	1.2718		11,221.88	11,221.88	0.0932		11,223.84

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9622	0	3.9622	1.6274	0	1.6274			0			0
Off-Road	1.8922	50.9465	37.9432	0.0617		0.6891	0.6891		0.6891	0.6891	0	6,414.98	6,414.98	1.935		6,455.62
Total	1.8922	50.9465	37.9432	0.0617	3.9622	0.6891	4.6513	1.6274	0.6891	2.3165	0	6,414.98	6,414.98	1.935		6,455.62

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.544	44.2898	43.2726	0.1098	2.5355	0.5718	3.1073	0.6944	0.5259	1.2203		11,041.27	11,041.27	0.0829		11,043.01
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0821	0.1239	1.1409	2.15E-03	0.1886	1.55E-03	0.1902	0.05	1.42E-03	0.0515		180.6125	180.6125	0.0103		180.8289
Total	3.6261	44.4137	44.4135	0.1119	2.7241	0.5733	3.2974	0.7444	0.5273	1.2718		11,221.88	11,221.88	0.0932		11,223.84

3.4 Underground Infrastructure/Utilities - 2016
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9441	9.3002	6.242	8.75E-03		0.5999	0.5999		0.5519	0.5519		909.6439	909.6439	0.2744		915.4059
Total	0.9441	9.3002	6.242	8.75E-03		0.5999	0.5999		0.5519	0.5519		909.6439	909.6439	0.2744		915.4059

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0205	0.031	0.2852	5.40E-04	0.0472	3.90E-04	0.0475	0.0125	3.60E-04	0.0129		45.1531	45.1531	2.58E-03		45.2072
Total	0.0205	0.031	0.2852	5.40E-04	0.0472	3.90E-04	0.0475	0.0125	3.60E-04	0.0129		45.1531	45.1531	2.58E-03		45.2072

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3686	7.8785	6.6275	8.75E-03		0.1372	0.1372		0.1372	0.1372	0	909.6439	909.6439	0.2744		915.4059
Total	0.3686	7.8785	6.6275	8.75E-03		0.1372	0.1372		0.1372	0.1372	0	909.6439	909.6439	0.2744		915.4059

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0205	0.031	0.2852	5.40E-04	0.0472	3.90E-04	0.0475	0.0125	3.60E-04	0.0129		45.1531	45.1531	2.58E-03		45.2072
Total	0.0205	0.031	0.2852	5.40E-04	0.0472	3.90E-04	0.0475	0.0125	3.60E-04	0.0129		45.1531	45.1531	2.58E-03		45.2072

3.4 Underground Infrastructure/Utilities - 2017
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8995	8.7286	6.2206	8.75E-03		0.5667	0.5667		0.5214	0.5214		895.4064	895.4064	0.2744		901.1678
Total	0.8995	8.7286	6.2206	8.75E-03		0.5667	0.5667		0.5214	0.5214		895.4064	895.4064	0.2744		901.1678

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0181	0.0277	0.2527	5.40E-04	0.0472	3.70E-04	0.0475	0.0125	3.40E-04	0.0129		43.4327	43.4327	2.35E-03		43.4821
Total	0.0181	0.0277	0.2527	5.40E-04	0.0472	3.70E-04	0.0475	0.0125	3.40E-04	0.0129		43.4327	43.4327	2.35E-03		43.4821

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3686	7.8785	6.6275	8.75E-03		0.1372	0.1372		0.1372	0.1372	0	895.4064	895.4064	0.2744		901.1678
Total	0.3686	7.8785	6.6275	8.75E-03		0.1372	0.1372		0.1372	0.1372	0	895.4064	895.4064	0.2744		901.1678

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0181	0.0277	0.2527	5.40E-04	0.0472	3.70E-04	0.0475	0.0125	3.40E-04	0.0129		43.4327	43.4327	2.35E-03		43.4821
Total	0.0181	0.0277	0.2527	5.40E-04	0.0472	3.70E-04	0.0475	0.0125	3.40E-04	0.0129		43.4327	43.4327	2.35E-03		43.4821

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.261	1.261		1.1601	1.1601		2,316.38	2,316.38	0.6987		2,331.05
Paving	1.037					0	0		0	0			0			0
Total	3.1268	22.3859	14.8176	0.0223		1.261	1.261		1.1601	1.1601		2,316.38	2,316.38	0.6987		2,331.05

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0616	0.0929	0.8557	1.61E-03	0.1415	1.16E-03	0.1426	0.0375	1.07E-03	0.0386		135.4594	135.4594	7.73E-03		135.6217
Total	0.0616	0.0929	0.8557	1.61E-03	0.1415	1.16E-03	0.1426	0.0375	1.07E-03	0.0386		135.4594	135.4594	7.73E-03		135.6217

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9122	19.6998	16.9276	0.0223		0.3271	0.3271		0.3271	0.3271	0	2,316.38	2,316.38	0.6987		2,331.05
Paving	1.037					0	0		0	0			0			0
Total	1.9492	19.6998	16.9276	0.0223		0.3271	0.3271		0.3271	0.3271	0	2,316.38	2,316.38	0.6987		2,331.05

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0616	0.0929	0.8557	1.61E-03	0.1415	1.16E-03	0.1426	0.0375	1.07E-03	0.0386		135.4594	135.4594	7.73E-03		135.6217
Total	0.0616	0.0929	0.8557	1.61E-03	0.1415	1.16E-03	0.1426	0.0375	1.07E-03	0.0386		135.4594	135.4594	7.73E-03		135.6217

3.5 Paving - 2017
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.727	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.06	2,281.06	0.6989		2,295.74
Paving	1.037					0	0		0	0			0			0
Total	2.9444	20.2964	14.727	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.06	2,281.06	0.6989		2,295.74

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0544	0.0832	0.7579	1.61E-03	0.1415	1.11E-03	0.1426	0.0375	1.02E-03	0.0385		130.2981	130.2981	7.05E-03		130.4462
Total	0.0544	0.0832	0.7579	1.61E-03	0.1415	1.11E-03	0.1426	0.0375	1.02E-03	0.0385		130.2981	130.2981	7.05E-03		130.4462

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9122	19.6998	16.9276	0.0223		0.3271	0.3271		0.3271	0.3271	0	2,281.06	2,281.06	0.6989		2,295.74
Paving	1.037					0	0		0	0			0			0
Total	1.9492	19.6998	16.9276	0.0223		0.3271	0.3271		0.3271	0.3271	0	2,281.06	2,281.06	0.6989		2,295.74

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.0544	0.0832	0.7579	1.61E-03	0.1415	1.11E-03	0.1426	0.0375	1.02E-03	0.0385		130.2981	130.2981	7.05E-03		130.4462
Total	0.0544	0.0832	0.7579	1.61E-03	0.1415	1.11E-03	0.1426	0.0375	1.02E-03	0.0385		130.2981	130.2981	7.05E-03		130.4462

3.6 Building Construction - 2017
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.673	1.673		2,639.81	2,639.81	0.6497		2,653.45
Total	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.673	1.673		2,639.81	2,639.81	0.6497		2,653.45

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	2.8724	20.9106	38.9305	0.0545	1.5217	0.302	1.8236	0.4352	0.2777	0.7129		5,361.18	5,361.18	0.0427		5,362.08
Worker	2.6535	4.0598	36.9873	0.0787	6.903	0.054	6.957	1.8309	0.0498	1.8806		6,358.55	6,358.55	0.3443		6,365.78
Total	5.5259	24.9704	75.9178	0.1332	8.4246	0.356	8.7806	2.266	0.3275	2.5935		11,719.73	11,719.73	0.3869		11,727.85

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0782	23.4615	17.8156	0.0268		0.4508	0.4508		0.4508	0.4508	0	2,639.81	2,639.81	0.6497		2,653.45
Total	1.0782	23.4615	17.8156	0.0268		0.4508	0.4508		0.4508	0.4508	0	2,639.81	2,639.81	0.6497		2,653.45

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	2.8724	20.9106	38.9305	0.0545	1.5217	0.302	1.8236	0.4352	0.2777	0.7129		5,361.18	5,361.18	0.0427		5,362.08
Worker	2.6535	4.0598	36.9873	0.0787	6.903	0.054	6.957	1.8309	0.0498	1.8806		6,358.55	6,358.55	0.3443		6,365.78
Total	5.5259	24.9704	75.9178	0.1332	8.4246	0.356	8.7806	2.266	0.3275	2.5935		11,719.73	11,719.73	0.3869		11,727.85

3.6 Building Construction - 2018
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.94	2,609.94	0.6387		2,623.35
Total	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.94	2,609.94	0.6387		2,623.35

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	2.6928	18.9422	37.3929	0.0544	1.5216	0.2798	1.8014	0.4351	0.2574	0.6925		5,268.76	5,268.76	0.0419		5,269.64
Worker	2.3487	3.6514	32.8629	0.0787	6.903	0.0521	6.9551	1.8309	0.0481	1.879		6,122.33	6,122.33	0.3161		6,128.97
Total	5.0415	22.5936	70.2557	0.1331	8.4245	0.3319	8.7564	2.266	0.3055	2.5715		11,391.09	11,391.09	0.358		11,398.61

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0782	23.4615	17.8156	0.0268		0.4508	0.4508		0.4508	0.4508	0	2,609.94	2,609.94	0.6387		2,623.35
Total	1.0782	23.4615	17.8156	0.0268		0.4508	0.4508		0.4508	0.4508	0	2,609.94	2,609.94	0.6387		2,623.35

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	2.6928	18.9422	37.3929	0.0544	1.5216	0.2798	1.8014	0.4351	0.2574	0.6925		5,268.76	5,268.76	0.0419		5,269.64
Worker	2.3487	3.6514	32.8629	0.0787	6.903	0.0521	6.9551	1.8309	0.0481	1.879		6,122.33	6,122.33	0.3161		6,128.97
Total	5.0415	22.5936	70.2557	0.1331	8.4245	0.3319	8.7564	2.266	0.3055	2.5715		11,391.09	11,391.09	0.358		11,398.61

3.6 Building Construction - 2019
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.965	17.1204	0.0268		1.285	1.285		1.2083	1.2083		2,580.76	2,580.76	0.6279		2,593.95
Total	2.3516	20.965	17.1204	0.0268		1.285	1.285		1.2083	1.2083		2,580.76	2,580.76	0.6279		2,593.95

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	2.4471	17.2812	35.5991	0.0543	1.5215	0.2598	1.7813	0.4351	0.239	0.6741		5,177.70	5,177.70	0.041		5,178.56
Worker	2.1328	3.327	29.7361	0.0786	6.903	0.0509	6.9539	1.8309	0.0471	1.878		5,902.50	5,902.50	0.2939		5,908.67
Total	4.5799	20.6083	65.3352	0.1329	8.4245	0.3107	8.7352	2.266	0.2861	2.5521		11,080.20	11,080.20	0.3349		11,087.23

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0782	23.4615	17.8156	0.0268		0.4508	0.4508		0.4508	0.4508	0	2,580.76	2,580.76	0.6279		2,593.95
Total	1.0782	23.4615	17.8156	0.0268		0.4508	0.4508		0.4508	0.4508	0	2,580.76	2,580.76	0.6279		2,593.95

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	2.4471	17.2812	35.5991	0.0543	1.5215	0.2598	1.7813	0.4351	0.239	0.6741		5,177.70	5,177.70	0.041		5,178.56
Worker	2.1328	3.327	29.7361	0.0786	6.903	0.0509	6.9539	1.8309	0.0471	1.878		5,902.50	5,902.50	0.2939		5,908.67
Total	4.5799	20.6083	65.3352	0.1329	8.4245	0.3107	8.7352	2.266	0.2861	2.5521		11,080.20	11,080.20	0.3349		11,087.23

3.7 Architectural Coating - 2018
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.4866					0	0		0	0			0			0
Off-Road	0.2986	2.0058	1.8542	2.97E-03		0.1506	0.1506		0.1506	0.1506			281.4485	281.4485	0.0267	282.0102
Total	13.7852	2.0058	1.8542	2.97E-03		0.1506	0.1506		0.1506	0.1506			281.4485	281.4485	0.0267	282.0102

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0			0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0			0	0		0
Worker	0.4685	0.7283	6.5546	0.0157	1.3768	0.0104	1.3872	0.3652	9.60E-03	0.3748			1,221.12	1,221.12	0.0631	1,222.45
Total	0.4685	0.7283	6.5546	0.0157	1.3768	0.0104	1.3872	0.3652	9.60E-03	0.3748			1,221.12	1,221.12	0.0631	1,222.45

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.4866					0	0		0	0			0			0
Off-Road	0.1139	2.3524	1.8324	2.97E-03		0.0475	0.0475		0.0475	0.0475	0		281.4485	281.4485	0.0267	282.0102
Total	13.6005	2.3524	1.8324	2.97E-03		0.0475	0.0475		0.0475	0.0475	0		281.4485	281.4485	0.0267	282.0102

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0			0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0			0	0		0
Worker	0.4685	0.7283	6.5546	0.0157	1.3768	0.0104	1.3872	0.3652	9.60E-03	0.3748			1,221.12	1,221.12	0.0631	1,222.45
Total	0.4685	0.7283	6.5546	0.0157	1.3768	0.0104	1.3872	0.3652	9.60E-03	0.3748			1,221.12	1,221.12	0.0631	1,222.45

3.7 Architectural Coating - 2019
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.4866					0	0		0	0			0			0
Off-Road	0.2664	1.8354	1.8413	2.97E-03		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	13.753	1.8354	1.8413	2.97E-03		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.4254	0.6636	5.931	0.0157	1.3768	0.0102	1.387	0.3652	9.40E-03	0.3746		1,177.27	1,177.27	0.0586		1,178.51
Total	0.4254	0.6636	5.931	0.0157	1.3768	0.0102	1.387	0.3652	9.40E-03	0.3746		1,177.27	1,177.27	0.0586		1,178.51

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.4866					0	0		0	0			0			0
Off-Road	0.1139	2.3524	1.8324	2.97E-03		0.0475	0.0475		0.0475	0.0475	0	281.4481	281.4481	0.0238		281.9473
Total	13.6005	2.3524	1.8324	2.97E-03		0.0475	0.0475		0.0475	0.0475	0	281.4481	281.4481	0.0238		281.9473

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.4254	0.6636	5.931	0.0157	1.3768	0.0102	1.387	0.3652	9.40E-03	0.3746		1,177.27	1,177.27	0.0586		1,178.51
Total	0.4254	0.6636	5.931	0.0157	1.3768	0.0102	1.387	0.3652	9.40E-03	0.3746		1,177.27	1,177.27	0.0586		1,178.51

3.7 Architectural Coating - 2020
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.4866					0	0		0	0			0			0
Off-Road	0.2422	1.6838	1.8314	2.97E-03		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9057
Total	13.7288	1.6838	1.8314	2.97E-03		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9057

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.3953	0.6113	5.4614	0.0157	1.3768	0.01	1.3868	0.3652	9.29E-03	0.3745		1,130.06	1,130.06	0.0552		1,131.21
Total	0.3953	0.6113	5.4614	0.0157	1.3768	0.01	1.3868	0.3652	9.29E-03	0.3745		1,130.06	1,130.06	0.0552		1,131.21

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.4866					0	0		0	0			0			0
Off-Road	0.1139	2.3524	1.8324	2.97E-03		0.0475	0.0475		0.0475	0.0475	0	281.4481	281.4481	0.0218		281.9057
Total	13.6005	2.3524	1.8324	2.97E-03		0.0475	0.0475		0.0475	0.0475	0	281.4481	281.4481	0.0218		281.9057

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Vendor	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Worker	0.3953	0.6113	5.4614	0.0157	1.3768	0.01	1.3868	0.3652	9.29E-03	0.3745		1,130.06	1,130.06	0.0552		1,131.21
Total	0.3953	0.6113	5.4614	0.0157	1.3768	0.01	1.3868	0.3652	9.29E-03	0.3745		1,130.06	1,130.06	0.0552		1,131.21

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	15.9402	43.2072	177.8499	0.3389	23.0429	0.5846	23.6275	6.1731	0.5387	6.7118		27,522.85	27,522.85	0.9865		27,543.57
Unmitigated	15.9402	43.2072	177.8499	0.3389	23.0429	0.5846	23.6275	6.1731	0.5387	6.7118		27,522.85	27,522.85	0.9865		27,543.57

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Condo/Townhouse	1,782.20	1,782.20	1782.20	3,978,523	3,978,523
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	3,055.92	3,055.92	3055.92	6,821,932	6,821,932
Total	4,838.12	4,838.12	4,838.12	10,800,455	10,800,455

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
Condo/Townhouse	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.54259	0.062129	0.167184	0.110637	0.03073	0.004573	0.019109	0.050292	0.001784	0.003671	0.005678	0.000201	0.001421

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
NaturalGas	0.4386	3.7478	1.5948	0.0239		0.303	0.303		0.303	0.303			4,784.43	4,784.43	0.0917	0.0877	4,813.54
NaturalGas	0.6762	5.7786	2.459	0.0369		0.4672	0.4672		0.4672	0.4672			7,376.93	7,376.93	0.1414	0.1352	7,421.83

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day										lb/day						
Condo/Townhouse	17834.3	0.1923	1.6436	0.6994	0.0105		0.1329	0.1329		0.1329	0.1329			2,098.15	2,098.15	0.0402	0.0385	2,110.92
Other Asphalt	0	0	0	0	0		0	0		0	0			0	0	0	0	0
Parking Lot	0	0	0	0	0		0	0		0	0			0	0	0	0	0
Single Family	44869.6	0.4839	4.1351	1.7596	0.0264		0.3343	0.3343		0.3343	0.3343			5,278.78	5,278.78	0.1012	0.0968	5,310.91
City Park	0	0	0	0	0		0	0		0	0			0	0	0	0	0
Total		0.6762	5.7786	2.459	0.0369		0.4672	0.4672		0.4672	0.4672			7,376.93	7,376.93	0.1414	0.1353	7,421.83

Mitigated

	NaturalGa	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day										lb/day						
Condo/Townhouse	11.5673	0.1248	1.066	0.4536	6.80E-03		0.0862	0.0862		0.0862	0.0862			1,360.86	1,360.86	0.0261	0.025	1,369.14
Other Asphalt	0	0	0	0	0		0	0		0	0			0	0	0	0	0
Parking Lot	0	0	0	0	0		0	0		0	0			0	0	0	0	0
Single Family	29.1003	0.3138	2.6818	1.1412	0.0171		0.2168	0.2168		0.2168	0.2168			3,423.57	3,423.57	0.0656	0.0628	3,444.40
City Park	0	0	0	0	0		0	0		0	0			0	0	0	0	0
Total		0.4386	3.7478	1.5948	0.0239		0.303	0.303		0.303	0.303			4,784.43	4,784.43	0.0917	0.0877	4,813.54

6.0 Area Detail

6.1 Mitigation Measures Area

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior
- Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	23.858388	0.567	49.0398	2.58E-03		1.0597	1.0597		1.0514	1.0514	0	12,587.00	12,587.00	0.3263	0.2292	12,664.89
Unmitigated	694.88509	9.4507	862.0309	0.2819		114.377	114.377		114.3717	114.3717	11,852.14	8,091.27	19,943.41	9.8758	1.0106	20,464.10

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	4.6141					0	0		0	0			0			0
Consumer	19.153488					0	0		0	0			0			0
Hearth	669.6091	8.8837	813.0537	0.2793		114.1089	114.1089		114.1036	114.1036	11,852.14	8,003.47	19,855.61	9.7891	1.0106	20,374.48
Landscaping	1.5084	0.567	48.9773	2.58E-03		0.2681	0.2681		0.2681	0.2681		87.8016	87.8016	0.0867		89.6225
Total	694.88509	9.4507	862.0309	0.2819		114.377	114.377		114.3717	114.3717	11,852.14	8,091.27	19,943.41	9.8758	1.0106	20,464.10

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural	2.0507					0	0		0	0			0			0
Consumer	19.153488					0	0		0	0			0			0
Hearth	1.1458	5.00E-05	0.0625	0		0.7916	0.7916		0.7833	0.7833	0	12,499.20	12,499.20	0.2396	0.2292	12,575.27
Landscaping	1.5084	0.567	48.9773	2.58E-03		0.2681	0.2681		0.2681	0.2681		87.8016	87.8016	0.0867		89.6225
Total	23.858388	0.567	49.0398	2.58E-03		1.0597	1.0597		1.0514	1.0514	0	12,587.00	12,587.00	0.3263	0.2292	12,664.89

7.0 Water Detail

7.1 Mitigation Measures Water

- Apply Water Conservation Strategy
- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

- Institute Recycling and Composting Services

9.0 Operational Offroad

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

**Gateway Station West TOD
Alameda County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	9.35	Acre	9.35	407,286.00	0
Parking Lot	1,380.00	Space	12.42	552,000.00	0
City Park	1.13	Acre	1.13	49,222.80	0
Condo/Townhouse	268.00	Dwelling Unit	12.04	268,000.00	766
Single Family Housing	321.00	Dwelling Unit	11.63	577,800.00	918

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land Use based on "Title Sheet and Site Plan Vesting Tentative Map Tract 8099 Gateway Station West"

Construction Phase - Based on data provided by Urban Arena and model defaults

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - 1 Trencher, 1 Excavator

Demolition -

Grading -

Architectural Coating - Per Dumbarton TOD design feature: low VOC coatings beyond Regulation 8 Rule 3

Vehicle Trips - Trip generation rates based on Fehr & Peers Gateway Station West Transportation Analysis Memorandum dated 1/19/2015

Sequestration -

Construction Off-road Equipment Mitigation - PDFs: Tier 2, water twice a day to maintain 12% moisture content, and limit vehicle speed.

Area Mitigation - Regulation 8, Rule 3: Architectural Coatings

Energy Mitigation - CalEEMod includes 2008 Title 24. 2013 Title 24 increases energy efficiencies by 25%. Project would exceed 2013 Title 24 by 20%. (1-25%)

* (1-20%) = 60%; or a 40%

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	50

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
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tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstructionPhase	NumDays	55.00	555.00
tblConstructionPhase	NumDays	50.00	34.00
tblConstructionPhase	NumDays	75.00	86.00
tblConstructionPhase	PhaseEndDate	1/18/2022	3/18/2020
tblConstructionPhase	PhaseEndDate	7/29/2016	7/31/2016
tblConstructionPhase	PhaseEndDate	4/18/2017	1/31/2017
tblConstructionPhase	PhaseStartDate	12/4/2019	2/1/2018
tblConstructionPhase	PhaseStartDate	2/1/2017	11/16/2016
tblGrading	MaterialImported	0.00	100,000.00
tblLandUse	LotAcreage	16.75	12.04
tblLandUse	LotAcreage	104.22	11.63

tblProjectCharacteristics	OperationalYear	2014	2019
tblSequestration	NumberOfNewTrees	0.00	1,000.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	ST_TR	10.08	9.52
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	6.07	6.65
tblVehicleTrips	SU_TR	8.77	9.52
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	6.59	6.65
tblVehicleTrips	WD_TR	9.57	9.52

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	0.6011	6.7619	4.9211	9.0900e-003	0.5016	0.2716	0.7732	0.1889	0.2504	0.4392	0.0000	838.9696	838.9696	0.1208	0.0000	841.5057
2017	1.0123	6.3617	10.3556	0.0195	0.9681	0.2729	1.2410	0.2612	0.2551	0.5164	0.0000	1,591.5670	1,591.5670	0.1217	0.0000	1,594.1216
2018	2.6428	6.2302	11.3121	0.0232	1.2171	0.2573	1.4744	0.3278	0.2421	0.5699	0.0000	1,829.2427	1,829.2427	0.1276	0.0000	1,831.9226
2019	2.6371	5.2681	9.9378	0.0218	1.1512	0.2102	1.3614	0.3100	0.1980	0.5079	0.0000	1,674.7285	1,674.7285	0.1149	0.0000	1,677.1420
2020	0.3948	0.0628	0.1994	5.3000e-004	0.0371	3.3900e-003	0.0405	9.8700e-003	3.3700e-003	0.0132	0.0000	36.0789	36.0789	1.9500e-003	0.0000	36.1199
Total	7.2880	24.6847	36.7261	0.0741	3.8751	1.0154	4.8904	1.0978	0.9489	2.0467	0.0000	5,970.5868	5,970.5868	0.4869	0.0000	5,980.8119

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	10.3146	0.0900	7.6051	3.5300e-003		0.4899	0.4899		0.4898	0.4898	48.7796	26.6997	75.4793	0.1107	2.7100e-003	78.6456
Energy	0.1234	1.0546	0.4488	6.7300e-003		0.0853	0.0853		0.0853	0.0853	0.0000	2,344.364 4	2,344.364 4	0.0742	0.0329	2,356.120 6
Mobile	2.6934	7.6014	28.5869	0.0619	4.0398	0.1059	4.1457	1.0857	0.0976	1.1833	0.0000	4,567.471 3	4,567.471 3	0.1625	0.0000	4,570.883 4
Waste						0.0000	0.0000		0.0000	0.0000	103.3102	0.0000	103.3102	6.1055	0.0000	231.5249
Water						0.0000	0.0000		0.0000	0.0000	12.1749	86.4124	98.5873	1.2544	0.0303	134.3330
Total	13.1314	8.7460	36.6407	0.0722	4.0398	0.6810	4.7208	1.0857	0.6727	1.7584	164.2646	7,024.947 9	7,189.212 5	7.7072	0.0659	7,371.507 5

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.7552	0.0510	4.4081	2.3000e-004		0.0263	0.0263		0.0263	0.0263	0.0000	38.6856	38.6856	7.6800e-003	5.8000e-004	39.0260
Energy	0.0800	0.6840	0.2911	4.3700e-003		0.0553	0.0553		0.0553	0.0553	0.0000	1,901.6232	1,901.6232	0.0654	0.0249	1,910.7151
Mobile	2.6934	7.6014	28.5869	0.0619	4.0398	0.1059	4.1457	1.0857	0.0976	1.1833	0.0000	4,567.4713	4,567.4713	0.1625	0.0000	4,570.8834
Waste						0.0000	0.0000		0.0000	0.0000	25.8276	0.0000	25.8276	1.5264	0.0000	57.8812
Water						0.0000	0.0000		0.0000	0.0000	9.7399	65.0936	74.8335	1.0033	0.0242	103.4146
Total	10.5286	8.3364	33.2861	0.0665	4.0398	0.1875	4.2273	1.0857	0.1792	1.2649	35.5674	6,572.8736	6,608.4410	2.7652	0.0497	6,681.9204

	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	19.82	4.68	9.16	7.84	0.00	72.46	10.45	0.00	73.36	28.07	78.35	6.44	8.08	64.12	24.61	9.35

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	708.0000
Total	708.0000

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	2/15/2016	3/31/2016	5	34	
2	Grading	Grading	4/1/2016	7/31/2016	5	86	
3	Underground Infrastructure/Utilities	Trenching	8/1/2016	1/31/2017	5	132	
4	Paving	Paving	11/16/2016	1/31/2017	5	55	
5	Building Construction	Building Construction	2/1/2017	12/3/2019	5	740	
6	Architectural Coating	Architectural Coating	2/1/2018	3/18/2020	5	555	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 215

Acres of Paving: 0

**Residential Indoor: 1,712,745; Residential Outdoor: 570,915; Non-Residential Indoor: 709,603; Non-Residential Outdoor: 236,534
(Architectural Coating – sqft)**

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
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
Underground Infrastructure/Utilities	Excavators	1	8.00	162	0.38
Underground Infrastructure/Utilities	Trenchers	1	8.00	80	0.50
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
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
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	23.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	12,500.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Infrastructure/Utilities	2	5.00	0.00	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
Building Construction	9	732.00	228.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	146.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

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					
Fugitive Dust					2.4600e-003	0.0000	2.4600e-003	3.7000e-004	0.0000	3.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0729	0.7762	0.5955	6.8000e-004		0.0390	0.0390		0.0363	0.0363	0.0000	63.0655	63.0655	0.0172	0.0000	63.4257
Total	0.0729	0.7762	0.5955	6.8000e-004	2.4600e-003	0.0390	0.0414	3.7000e-004	0.0363	0.0367	0.0000	63.0655	63.0655	0.0172	0.0000	63.4257

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	2.6000e-004	3.4500e-003	2.8200e-003	1.0000e-005	1.9000e-004	5.0000e-005	2.4000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.7936	0.7936	1.0000e-005	0.0000	0.7937
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	9.8000e-004	1.4400e-003	0.0139	3.0000e-005	2.3100e-003	2.0000e-005	2.3300e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	2.1054	2.1054	1.2000e-004	0.0000	2.1079
Total	1.2400e-003	4.8900e-003	0.0168	4.0000e-005	2.5000e-003	7.0000e-005	2.5700e-003	6.7000e-004	6.0000e-005	7.2000e-004	0.0000	2.8989	2.8989	1.3000e-004	0.0000	2.9016

3.2 Demolition - 2016**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					1.1100e-003	0.0000	1.1100e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0219	0.5690	0.4295	6.8000e-004		7.9400e-003	7.9400e-003		7.9400e-003	7.9400e-003	0.0000	63.0654	63.0654	0.0172	0.0000	63.4256
Total	0.0219	0.5690	0.4295	6.8000e-004	1.1100e-003	7.9400e-003	9.0500e-003	1.7000e-004	7.9400e-003	8.1100e-003	0.0000	63.0654	63.0654	0.0172	0.0000	63.4256

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	2.6000e-004	3.4500e-003	2.8200e-003	1.0000e-005	1.9000e-004	5.0000e-005	2.4000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.7936	0.7936	1.0000e-005	0.0000	0.7937
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	9.8000e-004	1.4400e-003	0.0139	3.0000e-005	2.3100e-003	2.0000e-005	2.3300e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	2.1054	2.1054	1.2000e-004	0.0000	2.1079
Total	1.2400e-003	4.8900e-003	0.0168	4.0000e-005	2.5000e-003	7.0000e-005	2.5700e-003	6.7000e-004	6.0000e-005	7.2000e-004	0.0000	2.8989	2.8989	1.3000e-004	0.0000	2.9016

3.3 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					0.3786	0.0000	0.3786	0.1555	0.0000	0.1555	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2786	3.2170	2.1129	2.6500e-003		0.1541	0.1541		0.1418	0.1418	0.0000	250.2416	250.2416	0.0755	0.0000	251.8267
Total	0.2786	3.2170	2.1129	2.6500e-003	0.3786	0.1541	0.5327	0.1555	0.1418	0.2973	0.0000	250.2416	250.2416	0.0755	0.0000	251.8267

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	0.1396	1.8752	1.5326	4.7200e-003	0.1055	0.0246	0.1300	0.0290	0.0226	0.0516	0.0000	431.2895	431.2895	3.2100e-003	0.0000	431.3570
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	3.2900e-003	4.8700e-003	0.0470	9.0000e-005	7.8100e-003	7.0000e-005	7.8700e-003	2.0800e-003	6.0000e-005	2.1400e-003	0.0000	7.1005	7.1005	4.0000e-004	0.0000	7.1089
Total	0.1429	1.8801	1.5796	4.8100e-003	0.1133	0.0246	0.1379	0.0311	0.0226	0.0537	0.0000	438.3900	438.3900	3.6100e-003	0.0000	438.4659

3.3 Grading - 2016

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					0.1704	0.0000	0.1704	0.0700	0.0000	0.0700	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0814	2.1907	1.6316	2.6500e-003		0.0296	0.0296		0.0296	0.0296	0.0000	250.2413	250.2413	0.0755	0.0000	251.8264
Total	0.0814	2.1907	1.6316	2.6500e-003	0.1704	0.0296	0.2000	0.0700	0.0296	0.0996	0.0000	250.2413	250.2413	0.0755	0.0000	251.8264

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	0.1396	1.8752	1.5326	4.7200e-003	0.1055	0.0246	0.1300	0.0290	0.0226	0.0516	0.0000	431.2895	431.2895	3.2100e-003	0.0000	431.3570
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	3.2900e-003	4.8700e-003	0.0470	9.0000e-005	7.8100e-003	7.0000e-005	7.8700e-003	2.0800e-003	6.0000e-005	2.1400e-003	0.0000	7.1005	7.1005	4.0000e-004	0.0000	7.1089
Total	0.1429	1.8801	1.5796	4.8100e-003	0.1133	0.0246	0.1379	0.0311	0.0226	0.0537	0.0000	438.3900	438.3900	3.6100e-003	0.0000	438.4659

3.4 Underground Infrastructure/Utilities - 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	0.0519	0.5115	0.3433	4.8000e-004		0.0330	0.0330		0.0304	0.0304	0.0000	45.3868	45.3868	0.0137	0.0000	45.6743
Total	0.0519	0.5115	0.3433	4.8000e-004		0.0330	0.0330		0.0304	0.0304	0.0000	45.3868	45.3868	0.0137	0.0000	45.6743

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	1.0500e-003	1.5600e-003	0.0150	3.0000e-005	2.5000e-003	2.0000e-005	2.5200e-003	6.6000e-004	2.0000e-005	6.8000e-004	0.0000	2.2705	2.2705	1.3000e-004	0.0000	2.2732
Total	1.0500e-003	1.5600e-003	0.0150	3.0000e-005	2.5000e-003	2.0000e-005	2.5200e-003	6.6000e-004	2.0000e-005	6.8000e-004	0.0000	2.2705	2.2705	1.3000e-004	0.0000	2.2732

3.4 Underground Infrastructure/Utilities - 2016

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	0.0203	0.4333	0.3645	4.8000e-004		7.5500e-003	7.5500e-003		7.5500e-003	7.5500e-003	0.0000	45.3868	45.3868	0.0137	0.0000	45.6743
Total	0.0203	0.4333	0.3645	4.8000e-004		7.5500e-003	7.5500e-003		7.5500e-003	7.5500e-003	0.0000	45.3868	45.3868	0.0137	0.0000	45.6743

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0500e-003	1.5600e-003	0.0150	3.0000e-005	2.5000e-003	2.0000e-005	2.5200e-003	6.6000e-004	2.0000e-005	6.8000e-004	0.0000	2.2705	2.2705	1.3000e-004	0.0000	2.2732
Total	1.0500e-003	1.5600e-003	0.0150	3.0000e-005	2.5000e-003	2.0000e-005	2.5200e-003	6.6000e-004	2.0000e-005	6.8000e-004	0.0000	2.2705	2.2705	1.3000e-004	0.0000	2.2732

3.4 Underground Infrastructure/Utilities - 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	9.8900e-003	0.0960	0.0684	1.0000e-004		6.2300e-003	6.2300e-003		5.7400e-003	5.7400e-003	0.0000	8.9353	8.9353	2.7400e-003	0.0000	8.9928
Total	9.8900e-003	0.0960	0.0684	1.0000e-004		6.2300e-003	6.2300e-003		5.7400e-003	5.7400e-003	0.0000	8.9353	8.9353	2.7400e-003	0.0000	8.9928

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	1.9000e-004	2.8000e-004	2.6700e-003	1.0000e-005	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4368	0.4368	2.0000e-005	0.0000	0.4373
Total	1.9000e-004	2.8000e-004	2.6700e-003	1.0000e-005	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4368	0.4368	2.0000e-005	0.0000	0.4373

3.4 Underground Infrastructure/Utilities - 2017

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	4.0500e-003	0.0867	0.0729	1.0000e-004		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	8.9353	8.9353	2.7400e-003	0.0000	8.9928
Total	4.0500e-003	0.0867	0.0729	1.0000e-004		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	8.9353	8.9353	2.7400e-003	0.0000	8.9928

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	2.8000e-004	2.6700e-003	1.0000e-005	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4368	0.4368	2.0000e-005	0.0000	0.4373
Total	1.9000e-004	2.8000e-004	2.6700e-003	1.0000e-005	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4368	0.4368	2.0000e-005	0.0000	0.4373

3.5 Paving - 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	0.0345	0.3694	0.2445	3.7000e-004		0.0208	0.0208		0.0191	0.0191	0.0000	34.6728	34.6728	0.0105	0.0000	34.8924
Paving	0.0171					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0516	0.3694	0.2445	3.7000e-004		0.0208	0.0208		0.0191	0.0191	0.0000	34.6728	34.6728	0.0105	0.0000	34.8924

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	9.5000e-004	1.4000e-003	0.0135	3.0000e-005	2.2500e-003	2.0000e-005	2.2700e-003	6.0000e-004	2.0000e-005	6.2000e-004	0.0000	2.0435	2.0435	1.2000e-004	0.0000	2.0459
Total	9.5000e-004	1.4000e-003	0.0135	3.0000e-005	2.2500e-003	2.0000e-005	2.2700e-003	6.0000e-004	2.0000e-005	6.2000e-004	0.0000	2.0435	2.0435	1.2000e-004	0.0000	2.0459

3.5 Paving - 2016

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	0.0151	0.3251	0.2793	3.7000e-004		5.4000e-003	5.4000e-003		5.4000e-003	5.4000e-003	0.0000	34.6728	34.6728	0.0105	0.0000	34.8924
Paving	0.0171					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0322	0.3251	0.2793	3.7000e-004		5.4000e-003	5.4000e-003		5.4000e-003	5.4000e-003	0.0000	34.6728	34.6728	0.0105	0.0000	34.8924

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	1.4000e-003	0.0135	3.0000e-005	2.2500e-003	2.0000e-005	2.2700e-003	6.0000e-004	2.0000e-005	6.2000e-004	0.0000	2.0435	2.0435	1.2000e-004	0.0000	2.0459
Total	9.5000e-004	1.4000e-003	0.0135	3.0000e-005	2.2500e-003	2.0000e-005	2.2700e-003	6.0000e-004	2.0000e-005	6.2000e-004	0.0000	2.0435	2.0435	1.2000e-004	0.0000	2.0459

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0210	0.2233	0.1620	2.5000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	22.7628	22.7628	6.9700e-003	0.0000	22.9092
Paving	0.0114					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0324	0.2233	0.1620	2.5000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	22.7628	22.7628	6.9700e-003	0.0000	22.9092

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	5.6000e-004	8.4000e-004	8.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3104	1.3104	7.0000e-005	0.0000	1.3119
Total	5.6000e-004	8.4000e-004	8.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3104	1.3104	7.0000e-005	0.0000	1.3119

3.5 Paving - 2017

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	0.0100	0.2167	0.1862	2.5000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	22.7627	22.7627	6.9700e-003	0.0000	22.9092
Paving	0.0114					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0214	0.2167	0.1862	2.5000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	22.7627	22.7627	6.9700e-003	0.0000	22.9092

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	8.4000e-004	8.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3104	1.3104	7.0000e-005	0.0000	1.3119
Total	5.6000e-004	8.4000e-004	8.0100e-003	2.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3104	1.3104	7.0000e-005	0.0000	1.3119

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3692	3.1423	2.1574	3.1900e-003		0.2120	0.2120		0.1991	0.1991	0.0000	284.9801	284.9801	0.0701	0.0000	286.4531
Total	0.3692	3.1423	2.1574	3.1900e-003		0.2120	0.2120		0.1991	0.1991	0.0000	284.9801	284.9801	0.0701	0.0000	286.4531

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	0.3050	2.4579	3.7280	6.5000e-003	0.1754	0.0357	0.2112	0.0504	0.0329	0.0833	0.0000	581.3411	581.3411	4.5400e-003	0.0000	581.4364
Worker	0.2950	0.4411	4.2292	9.4400e-003	0.7906	6.4300e-003	0.7971	0.2103	5.9200e-003	0.2162	0.0000	691.8005	691.8005	0.0372	0.0000	692.5810
Total	0.6000	2.8990	7.9572	0.0159	0.9661	0.0422	1.0082	0.2607	0.0388	0.2995	0.0000	1,273.1416	1,273.1416	0.0417	0.0000	1,274.0174

3.6 Building Construction - 2017

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	0.1283	2.7919	2.1201	3.1900e-003		0.0536	0.0536		0.0536	0.0536	0.0000	284.9798	284.9798	0.0701	0.0000	286.4527
Total	0.1283	2.7919	2.1201	3.1900e-003		0.0536	0.0536		0.0536	0.0536	0.0000	284.9798	284.9798	0.0701	0.0000	286.4527

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3050	2.4579	3.7280	6.5000e-003	0.1754	0.0357	0.2112	0.0504	0.0329	0.0833	0.0000	581.3411	581.3411	4.5400e-003	0.0000	581.4364
Worker	0.2950	0.4411	4.2292	9.4400e-003	0.7906	6.4300e-003	0.7971	0.2103	5.9200e-003	0.2162	0.0000	691.8005	691.8005	0.0372	0.0000	692.5810
Total	0.6000	2.8990	7.9572	0.0159	0.9661	0.0422	1.0082	0.2607	0.0388	0.2995	0.0000	1,273.1416	1,273.1416	0.0417	0.0000	1,274.0174

3.6 Building Construction - 2018**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	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9844	308.9844	0.0756	0.0000	310.5723
Total	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9844	308.9844	0.0756	0.0000	310.5723

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	0.3148	2.4421	3.9148	7.1100e-003	0.1924	0.0363	0.2287	0.0553	0.0334	0.0887	0.0000	626.5378	626.5378	4.8900e-003	0.0000	626.6404
Worker	0.2871	0.4349	4.1363	0.0103	0.8671	6.7900e-003	0.8739	0.2306	6.2800e-003	0.2369	0.0000	730.4792	730.4792	0.0374	0.0000	731.2651
Total	0.6019	2.8769	8.0512	0.0175	1.0594	0.0431	1.1025	0.2859	0.0397	0.3256	0.0000	1,357.0170	1,357.0170	0.0423	0.0000	1,357.9055

3.6 Building Construction - 2018

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	0.1407	3.0617	2.3249	3.5000e-003		0.0588	0.0588		0.0588	0.0588	0.0000	308.9841	308.9841	0.0756	0.0000	310.5720
Total	0.1407	3.0617	2.3249	3.5000e-003		0.0588	0.0588		0.0588	0.0588	0.0000	308.9841	308.9841	0.0756	0.0000	310.5720

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3148	2.4421	3.9148	7.1100e-003	0.1924	0.0363	0.2287	0.0553	0.0334	0.0887	0.0000	626.5378	626.5378	4.8900e-003	0.0000	626.6404
Worker	0.2871	0.4349	4.1363	0.0103	0.8671	6.7900e-003	0.8739	0.2306	6.2800e-003	0.2369	0.0000	730.4792	730.4792	0.0374	0.0000	731.2651
Total	0.6019	2.8769	8.0512	0.0175	1.0594	0.0431	1.1025	0.2859	0.0397	0.3256	0.0000	1,357.0170	1,357.0170	0.0423	0.0000	1,357.9055

3.6 Building Construction - 2019

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	0.2834	2.5263	2.0630	3.2300e-003		0.1549	0.1549		0.1456	0.1456	0.0000	282.1179	282.1179	0.0686	0.0000	283.5594
Total	0.2834	2.5263	2.0630	3.2300e-003		0.1549	0.1549		0.1456	0.1456	0.0000	282.1179	282.1179	0.0686	0.0000	283.5594

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	0.2657	2.0576	3.4198	6.5600e-003	0.1776	0.0311	0.2088	0.0510	0.0286	0.0797	0.0000	568.5344	568.5344	4.4000e-003	0.0000	568.6269
Worker	0.2411	0.3658	3.4660	9.5500e-003	0.8006	6.1300e-003	0.8067	0.2130	5.6800e-003	0.2186	0.0000	650.2899	650.2899	0.0321	0.0000	650.9647
Total	0.5068	2.4233	6.8858	0.0161	0.9782	0.0373	1.0155	0.2640	0.0343	0.2983	0.0000	1,218.8243	1,218.8243	0.0365	0.0000	1,219.5915

3.6 Building Construction - 2019

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	0.1299	2.8271	2.1468	3.2300e-003		0.0543	0.0543		0.0543	0.0543	0.0000	282.1176	282.1176	0.0686	0.0000	283.5591
Total	0.1299	2.8271	2.1468	3.2300e-003		0.0543	0.0543		0.0543	0.0543	0.0000	282.1176	282.1176	0.0686	0.0000	283.5591

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2657	2.0576	3.4198	6.5600e-003	0.1776	0.0311	0.2088	0.0510	0.0286	0.0797	0.0000	568.5344	568.5344	4.4000e-003	0.0000	568.6269
Worker	0.2411	0.3658	3.4660	9.5500e-003	0.8006	6.1300e-003	0.8067	0.2130	5.6800e-003	0.2186	0.0000	650.2899	650.2899	0.0321	0.0000	650.9647
Total	0.5068	2.4233	6.8858	0.0161	0.9782	0.0373	1.0155	0.2640	0.0343	0.2983	0.0000	1,218.8243	1,218.8243	0.0365	0.0000	1,219.5915

3.7 Architectural Coating - 2018

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	1.6049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0355	0.2387	0.2207	3.5000e-004		0.0179	0.0179		0.0179	0.0179	0.0000	30.3838	30.3838	2.8900e-003	0.0000	30.4444
Total	1.6404	0.2387	0.2207	3.5000e-004		0.0179	0.0179		0.0179	0.0179	0.0000	30.3838	30.3838	2.8900e-003	0.0000	30.4444

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	0.0522	0.0791	0.7523	1.8800e-003	0.1577	1.2400e-003	0.1589	0.0420	1.1400e-003	0.0431	0.0000	132.8575	132.8575	6.8100e-003	0.0000	133.0004
Total	0.0522	0.0791	0.7523	1.8800e-003	0.1577	1.2400e-003	0.1589	0.0420	1.1400e-003	0.0431	0.0000	132.8575	132.8575	6.8100e-003	0.0000	133.0004

3.7 Architectural Coating - 2018

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	1.6049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0136	0.2799	0.2181	3.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	30.3837	30.3837	2.8900e-003	0.0000	30.4444
Total	1.6185	0.2799	0.2181	3.5000e-004		5.6600e-003	5.6600e-003		5.6600e-003	5.6600e-003	0.0000	30.3837	30.3837	2.8900e-003	0.0000	30.4444

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0522	0.0791	0.7523	1.8800e-003	0.1577	1.2400e-003	0.1589	0.0420	1.1400e-003	0.0431	0.0000	132.8575	132.8575	6.8100e-003	0.0000	133.0004
Total	0.0522	0.0791	0.7523	1.8800e-003	0.1577	1.2400e-003	0.1589	0.0420	1.1400e-003	0.0431	0.0000	132.8575	132.8575	6.8100e-003	0.0000	133.0004

3.7 Architectural Coating - 2019

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	1.7600					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0348	0.2395	0.2403	3.9000e-004		0.0168	0.0168		0.0168	0.0168	0.0000	33.3200	33.3200	2.8100e-003	0.0000	33.3791
Total	1.7948	0.2395	0.2403	3.9000e-004		0.0168	0.0168		0.0168	0.0168	0.0000	33.3200	33.3200	2.8100e-003	0.0000	33.3791

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	0.0521	0.0790	0.7487	2.0600e-003	0.1729	1.3200e-003	0.1743	0.0460	1.2300e-003	0.0472	0.0000	140.4663	140.4663	6.9400e-003	0.0000	140.6121
Total	0.0521	0.0790	0.7487	2.0600e-003	0.1729	1.3200e-003	0.1743	0.0460	1.2300e-003	0.0472	0.0000	140.4663	140.4663	6.9400e-003	0.0000	140.6121

3.7 Architectural Coating - 2019

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	1.7600					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0149	0.3070	0.2391	3.9000e-004		6.2000e-003	6.2000e-003		6.2000e-003	6.2000e-003	0.0000	33.3199	33.3199	2.8100e-003	0.0000	33.3790
Total	1.7749	0.3070	0.2391	3.9000e-004		6.2000e-003	6.2000e-003		6.2000e-003	6.2000e-003	0.0000	33.3199	33.3199	2.8100e-003	0.0000	33.3790

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0521	0.0790	0.7487	2.0600e-003	0.1729	1.3200e-003	0.1743	0.0460	1.2300e-003	0.0472	0.0000	140.4663	140.4663	6.9400e-003	0.0000	140.6121
Total	0.0521	0.0790	0.7487	2.0600e-003	0.1729	1.3200e-003	0.1743	0.0460	1.2300e-003	0.0472	0.0000	140.4663	140.4663	6.9400e-003	0.0000	140.6121

3.7 Architectural Coating - 2020

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	0.3776					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7800e-003	0.0472	0.0513	8.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	7.1491	7.1491	5.5000e-004	0.0000	7.1607
Total	0.3844	0.0472	0.0513	8.0000e-005		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	7.1491	7.1491	5.5000e-004	0.0000	7.1607

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	0.0104	0.0156	0.1482	4.4000e-004	0.0371	2.8000e-004	0.0374	9.8700e-003	2.6000e-004	0.0101	0.0000	28.9298	28.9298	1.4000e-003	0.0000	28.9592
Total	0.0104	0.0156	0.1482	4.4000e-004	0.0371	2.8000e-004	0.0374	9.8700e-003	2.6000e-004	0.0101	0.0000	28.9298	28.9298	1.4000e-003	0.0000	28.9592

3.7 Architectural Coating - 2020

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	0.3776					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1900e-003	0.0659	0.0513	8.0000e-005		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	7.1491	7.1491	5.5000e-004	0.0000	7.1607
Total	0.3808	0.0659	0.0513	8.0000e-005		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	7.1491	7.1491	5.5000e-004	0.0000	7.1607

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0104	0.0156	0.1482	4.4000e-004	0.0371	2.8000e-004	0.0374	9.8700e-003	2.6000e-004	0.0101	0.0000	28.9298	28.9298	1.4000e-003	0.0000	28.9592
Total	0.0104	0.0156	0.1482	4.4000e-004	0.0371	2.8000e-004	0.0374	9.8700e-003	2.6000e-004	0.0101	0.0000	28.9298	28.9298	1.4000e-003	0.0000	28.9592

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	2.6934	7.6014	28.5869	0.0619	4.0398	0.1059	4.1457	1.0857	0.0976	1.1833	0.0000	4,567.4713	4,567.4713	0.1625	0.0000	4,570.8834
Unmitigated	2.6934	7.6014	28.5869	0.0619	4.0398	0.1059	4.1457	1.0857	0.0976	1.1833	0.0000	4,567.4713	4,567.4713	0.1625	0.0000	4,570.8834

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Condo/Townhouse	1,782.20	1,782.20	1782.20	3,978,523	3,978,523
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	3,055.92	3,055.92	3055.92	6,821,932	6,821,932
Total	4,838.12	4,838.12	4,838.12	10,800,455	10,800,455

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.542590	0.062129	0.167184	0.110637	0.030730	0.004573	0.019109	0.050292	0.001784	0.003671	0.005678	0.000201	0.001421

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	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	1,109.5079	1,109.5079	0.0502	0.0104	1,113.7791
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,123.0304	1,123.0304	0.0508	0.0105	1,127.3537
NaturalGas Mitigated	0.0800	0.6840	0.2911	4.3700e-003		0.0553	0.0553		0.0553	0.0553	0.0000	792.1153	792.1153	0.0152	0.0145	796.9360
NaturalGas Unmitigated	0.1234	1.0546	0.4488	6.7300e-003		0.0853	0.0853		0.0853	0.0853	0.0000	1,221.3341	1,221.3341	0.0234	0.0224	1,228.7669

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	0.0000
Condo/Townhouse	6.50952e+006	0.0351	0.3000	0.1276	1.9100e-003		0.0243	0.0243		0.0243	0.0243	0.0000	347.3726	347.3726	6.6600e-003	6.3700e-003	349.4866
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.63774e+007	0.0883	0.7547	0.3211	4.8200e-003		0.0610	0.0610		0.0610	0.0610	0.0000	873.9615	873.9615	0.0168	0.0160	879.2803
Total		0.1234	1.0546	0.4488	6.7300e-003		0.0853	0.0853		0.0853	0.0853	0.0000	1,221.3341	1,221.3341	0.0234	0.0224	1,228.7669

5.2 Energy by Land Use - NaturalGas

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	tons/yr										MT/yr					
Condo/Townhouse	4.22206e+006	0.0228	0.1946	0.0828	1.2400e-003		0.0157	0.0157		0.0157	0.0157	0.0000	225.3050	225.3050	4.3200e-003	4.1300e-003	226.6762
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.06216e+007	0.0573	0.4894	0.2083	3.1200e-003		0.0396	0.0396		0.0396	0.0396	0.0000	566.8103	566.8103	0.0109	0.0104	570.2598
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	0.0000
Total		0.0800	0.6840	0.2911	4.3600e-003		0.0553	0.0553		0.0553	0.0553	0.0000	792.1153	792.1153	0.0152	0.0145	796.9360

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
Condo/Townhouse	1.1424e+006	332.3375	0.0150	3.1100e-003	333.6169
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	485760	141.3132	6.3900e-003	1.3200e-003	141.8572
Single Family Housing	2.23222e+006	649.3797	0.0294	6.0800e-003	651.8796
Total		1,123.0304	0.0508	0.0105	1,127.3537

5.3 Energy by Land Use - Electricity

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
Condo/Townhouse	1.12785e+006	328.1044	0.0148	3.0700e-003	329.3675
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	485760	141.3132	6.3900e-003	1.3200e-003	141.8572
Single Family Housing	2.20029e+006	640.0903	0.0289	5.9900e-003	642.5545
Total		1,109.5079	0.0502	0.0104	1,113.7791

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	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	7.7552	0.0510	4.4081	2.3000e-004		0.0263	0.0263		0.0263	0.0263	0.0000	38.6856	38.6856	7.6800e-003	5.8000e-004	39.0260
Unmitigated	10.3146	0.0900	7.6051	3.5300e-003		0.4899	0.4899		0.4898	0.4898	48.7796	26.6997	75.4793	0.1107	2.7100e-003	78.6456

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8421					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.2420					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.0948	0.0390	3.1971	3.3000e-003		0.4657	0.4657		0.4657	0.4657	48.7796	19.5310	68.3106	0.1037	2.7100e-003	71.3282
Landscaping	0.1358	0.0510	4.4080	2.3000e-004		0.0241	0.0241		0.0241	0.0241	0.0000	7.1687	7.1687	7.0800e-003	0.0000	7.3174
Total	10.3146	0.0900	7.6050	3.5300e-003		0.4899	0.4899		0.4898	0.4898	48.7796	26.6997	75.4793	0.1107	2.7100e-003	78.6456

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3743					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.2420					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.1800e-003	0.0000	1.7000e-004	0.0000		2.2000e-003	2.2000e-003		2.1800e-003	2.1800e-003	0.0000	31.5168	31.5168	6.0000e-004	5.8000e-004	31.7087
Landscaping	0.1358	0.0510	4.4080	2.3000e-004		0.0241	0.0241		0.0241	0.0241	0.0000	7.1687	7.1687	7.0800e-003	0.0000	7.3174
Total	7.7552	0.0510	4.4081	2.3000e-004		0.0263	0.0263		0.0263	0.0263	0.0000	38.6856	38.6856	7.6800e-003	5.8000e-004	39.0260

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	74.8335	1.0033	0.0242	103.4146
Unmitigated	98.5873	1.2544	0.0303	134.3330

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.34637	1.3709	6.0000e-005	1.0000e-005	1.3761
Condo/Townhouse	17.4613 / 11.0082	44.2343	0.5707	0.0138	60.4965
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	20.9144 / 13.1852	52.9821	0.6836	0.0165	72.4604
Total		98.5872	1.2544	0.0303	134.3330

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.0771	1.0967	5.0000e-005	1.0000e-005	1.1009
Condo/Townhouse	13.969 / 8.80656	33.5509	0.4565	0.0110	46.5536
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	16.7316 / 10.5482	40.1859	0.5468	0.0132	55.7601
Total		74.8335	1.0033	0.0242	103.4146

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	25.8276	1.5264	0.0000	57.8812
Unmitigated	103.3102	6.1055	0.0000	231.5249

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.1	0.0203	1.2000e-003	0.0000	0.0455
Condo/Townhouse	123.28	25.0247	1.4789	0.0000	56.0820
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	385.56	78.2652	4.6253	0.0000	175.3974
Total		103.3102	6.1055	0.0000	231.5249

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.025	5.0700e-003	3.0000e-004	0.0000	0.0114
Condo/Townhouse	30.82	6.2562	0.3697	0.0000	14.0205
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	96.39	19.5663	1.1563	0.0000	43.8493
Total		25.8276	1.5264	0.0000	57.8812

9.0 Operational Offroad

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

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	708.0000	0.0000	0.0000	708.0000

10.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	1000	708.0000	0.0000	0.0000	708.0000
Total		708.0000	0.0000	0.0000	708.0000

Gateway Station West TOD Alameda County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.01	-0.18	0.00	0.00	0.61	0.61	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.22	0.00	0.00	0.00	0.58	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.69	0.27	0.27	0.00	0.79	0.78	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.47	0.20	0.13	0.00	0.70	0.68	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.36	0.09	-0.14	0.00	0.73	0.71	0.00	0.00	0.00	0.00	0.00	0.00
Underground Infrastructure/Utilities	0.59	0.14	-0.06	0.00	0.77	0.75	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 2	1	1	Level 2	0.00
Concrete/Industrial Saws	Diesel	Tier 2	1	1	Level 2	0.00
Cranes	Diesel	Tier 2	1	1	Level 2	0.00
Excavators	Diesel	Tier 2	6	6	Level 2	0.00
Forklifts	Diesel	Tier 2	3	3	Level 2	0.00
Generator Sets	Diesel	Tier 2	1	1	Level 2	0.00
Graders	Diesel	Tier 2	1	1	Level 2	0.00
Pavers	Diesel	Tier 2	2	2	Level 2	0.00
Paving Equipment	Diesel	Tier 2	2	2	Level 2	0.00
Rollers	Diesel	Tier 2	2	2	Level 2	0.00
Rubber Tired Dozers	Diesel	Tier 2	3	3	Level 2	0.00
Scrapers	Diesel	Tier 2	2	2	Level 2	0.00
Tractors/Loaders/Backhoes	Diesel	Tier 2	5	5	Level 2	0.00
Trenchers	Diesel	Tier 2	1	1	Level 2	0.00
Welders	Diesel	Tier 2	1	1	Level 2	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Air Compressors	7.70900E-002	5.25350E-001	5.12220E-001	8.20000E-004	3.78300E-002	3.78300E-002	0.00000E+000	7.08528E+001	7.08528E+001	6.25000E-003	0.00000E+000	7.09842E+001
Concrete/Industrial Saws	1.09900E-002	7.85700E-002	6.41800E-002	1.10000E-004	5.90000E-003	5.90000E-003	0.00000E+000	9.14017E+000	9.14017E+000	8.80000E-004	0.00000E+000	9.15875E+000
Cranes	1.83220E-001	2.18268E+000	8.05270E-001	1.83000E-003	9.49600E-002	8.73600E-002	0.00000E+000	1.66823E+002	1.66823E+002	5.19400E-002	0.00000E+000	1.67913E+002
Excavators	7.85200E-002	8.94900E-001	6.95890E-001	1.07000E-003	4.40300E-002	4.05100E-002	0.00000E+000	1.01186E+002	1.01186E+002	3.05500E-002	0.00000E+000	1.01827E+002
Forklifts	2.02870E-001	1.78478E+000	1.35183E+000	1.69000E-003	1.42990E-001	1.31550E-001	0.00000E+000	1.54850E+002	1.54850E+002	4.82100E-002	0.00000E+000	1.55863E+002
Generator Sets	1.87300E-001	1.52327E+000	1.38669E+000	2.43000E-003	9.71500E-002	9.71500E-002	0.00000E+000	2.09127E+002	2.09127E+002	1.50800E-002	0.00000E+000	2.09443E+002
Graders	4.38100E-002	4.46340E-001	2.11880E-001	2.70000E-004	2.50700E-002	2.30700E-002	0.00000E+000	2.53327E+001	2.53327E+001	7.64000E-003	0.00000E+000	2.54931E+001
Pavers	2.11600E-002	2.37610E-001	1.56510E-001	2.50000E-004	1.17600E-002	1.08200E-002	0.00000E+000	2.32622E+001	2.32622E+001	7.06000E-003	0.00000E+000	2.34105E+001
Paving Equipment	1.63500E-002	1.88470E-001	1.39730E-001	2.20000E-004	9.38000E-003	8.63000E-003	0.00000E+000	2.06641E+001	2.06641E+001	6.27000E-003	0.00000E+000	2.07958E+001
Rollers	1.79600E-002	1.66550E-001	1.10240E-001	1.40000E-004	1.21900E-002	1.12100E-002	0.00000E+000	1.35092E+001	1.35092E+001	4.10000E-003	0.00000E+000	1.35953E+001
Rubber Tired Dozers	9.53500E-002	1.06804E+000	8.07340E-001	6.80000E-004	4.97000E-002	4.57200E-002	0.00000E+000	6.45047E+001	6.45047E+001	1.94600E-002	0.00000E+000	6.49133E+001
Scrapers	1.18890E-001	1.51323E+000	9.47840E-001	1.28000E-003	6.09900E-002	5.61100E-002	0.00000E+000	1.20731E+002	1.20731E+002	3.64200E-002	0.00000E+000	1.21496E+002
Tractors/Loaders/Backhoes	2.93040E-001	2.87095E+000	2.48410E+000	3.29000E-003	2.06240E-001	1.89740E-001	0.00000E+000	3.00894E+002	3.00894E+002	9.34300E-002	0.00000E+000	3.02856E+002
Trenchers	3.64800E-002	3.19640E-001	1.85540E-001	2.30000E-004	2.50600E-002	2.30600E-002	0.00000E+000	2.14826E+001	2.14826E+001	6.50000E-003	0.00000E+000	2.16190E+001
Welders	1.63670E-001	6.22360E-001	6.87980E-001	9.50000E-004	4.20300E-002	4.20300E-002	0.00000E+000	6.96416E+001	6.96416E+001	1.33500E-002	0.00000E+000	6.99220E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	3.16100E-002	6.52800E-001	5.08490E-001	8.20000E-004	1.31900E-002	1.31900E-002	0.00000E+000	7.08528E+001	7.08528E+001	6.25000E-003	0.00000E+000	7.09841E+001
Concrete/Industrial Saws	4.08000E-003	8.42100E-002	6.56000E-002	1.10000E-004	1.70000E-003	1.70000E-003	0.00000E+000	9.14016E+000	9.14016E+000	8.80000E-004	0.00000E+000	9.15874E+000
Cranes	4.49100E-002	1.55306E+000	9.73000E-001	1.83000E-003	1.64700E-002	1.64700E-002	0.00000E+000	1.66822E+002	1.66822E+002	5.19400E-002	0.00000E+000	1.67913E+002
Excavators	4.18800E-002	9.19080E-001	8.15490E-001	1.07000E-003	1.41100E-002	1.41100E-002	0.00000E+000	1.01186E+002	1.01186E+002	3.05500E-002	0.00000E+000	1.01827E+002
Forklifts	8.01500E-002	1.65524E+000	1.28934E+000	1.69000E-003	3.34500E-002	3.34500E-002	0.00000E+000	1.54850E+002	1.54850E+002	4.82100E-002	0.00000E+000	1.55862E+002
Generator Sets	9.33000E-002	1.92677E+000	1.50085E+000	2.43000E-003	3.89400E-002	3.89400E-002	0.00000E+000	2.09127E+002	2.09127E+002	1.50800E-002	0.00000E+000	2.09443E+002
Graders	1.02800E-002	2.25610E-001	2.00180E-001	2.70000E-004	3.46000E-003	3.46000E-003	0.00000E+000	2.53327E+001	2.53327E+001	7.64000E-003	0.00000E+000	2.54931E+001
Pavers	9.68000E-003	2.12360E-001	1.88430E-001	2.50000E-004	3.26000E-003	3.26000E-003	0.00000E+000	2.32622E+001	2.32622E+001	7.06000E-003	0.00000E+000	2.34105E+001
Paving Equipment	8.63000E-003	1.89310E-001	1.67970E-001	2.20000E-004	2.91000E-003	2.91000E-003	0.00000E+000	2.06641E+001	2.06641E+001	6.27000E-003	0.00000E+000	2.07958E+001
Rollers	6.78000E-003	1.40070E-001	1.09110E-001	1.40000E-004	2.83000E-003	2.83000E-003	0.00000E+000	1.35092E+001	1.35092E+001	4.10000E-003	0.00000E+000	1.35953E+001
Rubber Tired Dozers	1.66200E-002	5.74860E-001	3.60150E-001	6.80000E-004	6.09000E-003	6.09000E-003	0.00000E+000	6.45046E+001	6.45046E+001	1.94600E-002	0.00000E+000	6.49132E+001
Scrapers	3.15400E-002	9.96120E-001	6.83350E-001	1.28000E-003	1.15600E-002	1.15600E-002	0.00000E+000	1.20731E+002	1.20731E+002	3.64200E-002	0.00000E+000	1.21495E+002
Tractors/Loaders/Balkhoes	1.53920E-001	3.17884E+000	2.47615E+000	3.29000E-003	6.42500E-002	6.42500E-002	0.00000E+000	3.00894E+002	3.00894E+002	9.34300E-002	0.00000E+000	3.02856E+002
Trenchers	1.07100E-002	2.21170E-001	1.72280E-001	2.30000E-004	4.47000E-003	4.47000E-003	0.00000E+000	2.14826E+001	2.14826E+001	6.50000E-003	0.00000E+000	2.16190E+001
Welders	3.91700E-002	6.25430E-001	5.53830E-001	9.50000E-004	1.89100E-002	1.89100E-002	0.00000E+000	6.96416E+001	6.96416E+001	1.33500E-002	0.00000E+000	6.99219E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	5.89960E-001	-2.42600E-001	7.28203E-003	0.00000E+000	6.51335E-001	6.51335E-001	0.00000E+000	1.12910E-006	1.12910E-006	0.00000E+000	0.00000E+000	1.26789E-006
Concrete/Industrial Saws	6.28753E-001	-7.17831E-002	-2.21253E-002	0.00000E+000	7.11864E-001	7.11864E-001	0.00000E+000	1.09407E-006	1.09407E-006	0.00000E+000	0.00000E+000	1.09185E-006
Cranes	7.54885E-001	2.88462E-001	-2.08290E-001	0.00000E+000	8.26559E-001	8.11470E-001	0.00000E+000	1.13894E-006	1.13894E-006	0.00000E+000	0.00000E+000	1.19109E-006
Excavators	4.66633E-001	-2.70198E-002	-1.71866E-001	0.00000E+000	6.79537E-001	6.51691E-001	0.00000E+000	1.18594E-006	1.18594E-006	0.00000E+000	0.00000E+000	1.17847E-006
Forklifts	6.04919E-001	7.25804E-002	4.62262E-002	0.00000E+000	7.66068E-001	7.45724E-001	0.00000E+000	1.16241E-006	1.16241E-006	0.00000E+000	0.00000E+000	1.15486E-006
Generator Sets	5.01869E-001	-2.64891E-001	-8.23255E-002	0.00000E+000	5.99177E-001	5.99177E-001	0.00000E+000	1.19545E-006	1.19545E-006	0.00000E+000	0.00000E+000	1.19364E-006
Graders	7.65350E-001	4.94533E-001	5.52199E-002	0.00000E+000	8.61986E-001	8.50022E-001	0.00000E+000	1.18424E-006	1.18424E-006	0.00000E+000	0.00000E+000	1.17679E-006
Pavers	5.42533E-001	1.06267E-001	-2.03949E-001	0.00000E+000	7.22789E-001	6.98706E-001	0.00000E+000	1.28965E-006	1.28965E-006	0.00000E+000	0.00000E+000	8.54319E-007
Paving Equipment	4.72171E-001	-4.45694E-003	-2.02104E-001	0.00000E+000	6.89765E-001	6.62804E-001	0.00000E+000	9.67861E-007	9.67861E-007	0.00000E+000	0.00000E+000	1.44260E-006
Rollers	6.22494E-001	1.58991E-001	1.02504E-002	0.00000E+000	7.67842E-001	7.47547E-001	0.00000E+000	1.48047E-006	1.48047E-006	0.00000E+000	0.00000E+000	1.47109E-006
Rubber Tired Dozers	8.25695E-001	4.61762E-001	5.53905E-001	0.00000E+000	8.77465E-001	8.66798E-001	0.00000E+000	1.24022E-006	1.24022E-006	0.00000E+000	0.00000E+000	1.23241E-006
Scrapers	7.34713E-001	3.41726E-001	2.79045E-001	0.00000E+000	8.10461E-001	7.93976E-001	0.00000E+000	1.15960E-006	1.15960E-006	0.00000E+000	0.00000E+000	1.15231E-006
Tractors/Loaders/Balkhoes	4.74747E-001	-1.07243E-001	3.20035E-003	0.00000E+000	6.88470E-001	6.61379E-001	0.00000E+000	1.19643E-006	1.19643E-006	0.00000E+000	0.00000E+000	1.18868E-006
Trenchers	7.06414E-001	3.08065E-001	7.14671E-002	0.00000E+000	8.21628E-001	8.06158E-001	0.00000E+000	1.39648E-006	1.39648E-006	0.00000E+000	0.00000E+000	1.38767E-006
Welders	7.60677E-001	-4.93284E-003	1.94991E-001	0.00000E+000	5.50083E-001	5.50083E-001	0.00000E+000	1.14874E-006	1.14874E-006	0.00000E+000	0.00000E+000	1.14413E-006

Fugitive Dust Mitigation

Yes/No Mitigation Measure Mitigation Input Mitigation Input Mitigation Input

No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00

Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
Yes	Unpaved Road Mitigation	Moisture Content %	12.00	Vehicle Speed (mph)	15.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.37	0.10	0.37	0.10	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	3.00	0.81	3.00	0.81	0.00	0.00
Demolition	Fugitive Dust	0.00	0.00	0.00	0.00	0.55	0.54
Demolition	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Fugitive Dust	0.38	0.16	0.17	0.07	0.55	0.55
Grading	Roads	0.11	0.03	0.11	0.03	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Underground Infrastructure/Utilities	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Underground Infrastructure/Utilities	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	55.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	1.20	1.20	1.24	1.20
Hearth	99.85	100.00	99.99	100.00	99.53	99.53	100.00	-61.37	53.86	99.42	78.60	55.55
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	35.14	35.14	35.14	35.22	35.14	35.14	0.00	35.14	35.14	35.16	35.15	35.14
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	24.67	24.09	20.01	20.14	23.02
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.20	0.49		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00		
No	Transit Improvements	Expand Transit Network	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program			
	Commute	Commute Subtotal	0.00		

No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.00		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
Yes	Use Low VOC Paint (Residential Interior)	50.00
Yes	Use Low VOC Paint (Residential Exterior)	50.00
Yes	Use Low VOC Paint (Non-residential Interior)	50.00
Yes	Use Low VOC Paint (Non-residential Exterior)	50.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	40.00	
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher	15.00
Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Apply Water Conservation on Strategy	20.00	20.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
Yes	Install low-flow bathroom faucet	32.00	
Yes	Install low-flow Kitchen faucet	18.00	
Yes	Install low-flow Toilet	20.00	
Yes	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
Yes	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	75.00

Gateway Station West Grading Mitigation Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	9.35	Acre	9.35	407,286.00	0
Parking Lot	1,380.00	Space	12.42	552,000.00	0
City Park	1.13	Acre	1.13	49,222.80	0
Condo/Townhouse	268.00	Dwelling Unit	12.04	268,000.00	766
Single Family Housing	321.00	Dwelling Unit	11.63	577,800.00	918

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land Use based on "Title Sheet and Site Plan Vesting Tentative Map Tract 8099 Gateway Station West"

Construction Phase - Grading phase only

Off-road Equipment -

Demolition -

Grading -

Architectural Coating - Per Dumbarton TOD design feature: low VOC coatings beyond Regulation 8 Rule 3

Vehicle Trips - Trip generation rates based on Fehr & Peers Gateway Station West Transportation Analysis Memorandum dated 1/19/2015

Sequestration -

Construction Off-road Equipment Mitigation - MM Air-1: Tier 4 Final equipment during Grading.

Area Mitigation - Regulation 8, Rule 3: Architectural Coatings

Energy Mitigation - CalEEMod includes 2008 Title 24. 2013 Title 24 increases energy efficiencies by 25%. Project would exceed 2013 Title 24 by 20%. (1-25%)* (1-20%) = 60%; or a 40%

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	50
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	75.00	86.00
tblConstructionPhase	PhaseEndDate	7/29/2016	7/31/2016
tblGrading	MaterialImported	0.00	100,000.00
tblLandUse	LotAcreage	16.75	12.04
tblLandUse	LotAcreage	104.22	11.63
tblProjectCharacteristics	OperationalYear	2014	2019
tblSequestration	NumberOfNewTrees	0.00	1,000.00
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	ST_TR	10.08	9.52
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	6.07	6.65
tblVehicleTrips	SU_TR	8.77	9.52
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	6.59	6.65
tblVehicleTrips	WD_TR	9.57	9.52

2.0 Emissions Summary

	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	91.70	18.68	78.08	44.44	0.00	98.31	81.95	0.00	98.36	93.36	100.00	-4.43	18.14	87.24	72.35	18.78

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	4/1/2016	7/31/2016	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 215

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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

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
Grading	8	20.00	0.00	12,500.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 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					8.8048	0.0000	8.8048	3.6164	0.0000	3.6164			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.980 7	6,414.980 7	1.9350		6,455.615 4
Total	6.4795	74.8137	49.1374	0.0617	8.8048	3.5842	12.3891	3.6164	3.2975	6.9139		6,414.980 7	6,414.980 7	1.9350		6,455.615 4

3.2 Grading - 2016

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	3.5440	44.2898	43.2726	0.1098	2.5355	0.5718	3.1073	0.6944	0.5259	1.2203		11,041.2703	11,041.2703	0.0829		11,043.0115
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	0.0821	0.1239	1.1409	2.1500e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		180.6125	180.6125	0.0103		180.8289
Total	3.6261	44.4137	44.4135	0.1119	2.7241	0.5733	3.2974	0.7444	0.5273	1.2718		11,221.8828	11,221.8828	0.0932		11,223.8403

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					3.9622	0.0000	3.9622	1.6274	0.0000	1.6274			0.0000			0.0000
Off-Road	0.7564	3.2778	34.7787	0.0617		0.0504	0.0504		0.0504	0.0504	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	0.7564	3.2778	34.7787	0.0617	3.9622	0.0504	4.0126	1.6274	0.0504	1.6778	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154

3.2 Grading - 2016

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	3.5440	44.2898	43.2726	0.1098	2.5355	0.5718	3.1073	0.6944	0.5259	1.2203		11,041.2703	11,041.2703	0.0829		11,043.0115
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	0.0821	0.1239	1.1409	2.1500e-003	0.1886	1.5500e-003	0.1902	0.0500	1.4200e-003	0.0515		180.6125	180.6125	0.0103		180.8289
Total	3.6261	44.4137	44.4135	0.1119	2.7241	0.5733	3.2974	0.7444	0.5273	1.2718		11,221.8828	11,221.8828	0.0932		11,223.8403

Gateway Station West Grading Mitigation

Alameda County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Grading	0.58	0.60	0.17	0.00	0.85	0.85	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Excavators	Diesel	Tier 4 Final	2	2	Level 2	0.00
Graders	Diesel	Tier 4 Final	1	1	Level 2	0.00
Rubber Tired Dozers	Diesel	Tier 4 Final	1	1	Level 2	0.00
Scrapers	Diesel	Tier 4 Final	2	2	Level 2	0.00
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2	2	Level 2	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Excavators	3.33800E-002	3.81050E-001	2.94840E-001	4.60000E-004	1.87500E-002	1.72500E-002	0.00000E+000	4.29035E+001	4.29035E+001	1.29400E-002	0.00000E+000	4.31752E+001
Graders	4.38100E-002	4.46340E-001	2.11880E-001	2.70000E-004	2.50700E-002	2.30700E-002	0.00000E+000	2.53327E+001	2.53327E+001	7.64000E-003	0.00000E+000	2.54931E+001
Rubber Tired Dozers	5.32400E-002	5.96440E-001	4.50850E-001	3.80000E-004	2.77500E-002	2.55300E-002	0.00000E+000	3.60221E+001	3.60221E+001	1.08700E-002	0.00000E+000	3.62503E+001
Scrapers	1.18890E-001	1.51323E+000	9.47840E-001	1.28000E-003	6.09900E-002	5.61100E-002	0.00000E+000	1.20731E+002	1.20731E+002	3.64200E-002	0.00000E+000	1.21496E+002
Tractors/Loaders/Backhoes	2.92900E-002	2.79940E-001	2.07490E-001	2.70000E-004	2.15500E-002	1.98300E-002	0.00000E+000	2.52526E+001	2.52526E+001	7.62000E-003	0.00000E+000	2.54126E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Excavators	5.60000E-003	2.42800E-002	3.45480E-001	4.60000E-004	3.70000E-004	3.70000E-004	0.00000E+000	4.29034E+001	4.29034E+001	1.29400E-002	0.00000E+000	4.31752E+001
Graders	3.25000E-003	1.40700E-002	2.00180E-001	2.70000E-004	2.20000E-004	2.20000E-004	0.00000E+000	2.53327E+001	2.53327E+001	7.64000E-003	0.00000E+000	2.54931E+001
Rubber Tired Dozers	4.64000E-003	2.01100E-002	1.70180E-001	3.80000E-004	3.10000E-004	3.10000E-004	0.00000E+000	3.60221E+001	3.60221E+001	1.08700E-002	0.00000E+000	3.62502E+001
Scrapers	1.57700E-002	6.83400E-002	5.78220E-001	1.28000E-003	1.05000E-003	1.05000E-003	0.00000E+000	1.20731E+002	1.20731E+002	3.64200E-002	0.00000E+000	1.21495E+002
Tractors/Loaders/Backhoes	3.27000E-003	1.41500E-002	2.01420E-001	2.70000E-004	2.20000E-004	2.20000E-004	0.00000E+000	2.52526E+001	2.52526E+001	7.62000E-003	0.00000E+000	2.54126E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Excavators	8.32235E-001	9.36281E-001	-1.71754E-001	0.00000E+000	9.80267E-001	9.78551E-001	0.00000E+000	1.16541E-006	1.16541E-006	0.00000E+000	0.00000E+000	1.15807E-006
Graders	9.25816E-001	9.68477E-001	5.52199E-002	0.00000E+000	9.91225E-001	9.90464E-001	0.00000E+000	1.18424E-006	1.18424E-006	0.00000E+000	0.00000E+000	1.17679E-006
Rubber Tired Dozers	9.12847E-001	9.66283E-001	6.22535E-001	0.00000E+000	9.88829E-001	9.87857E-001	0.00000E+000	1.11043E-006	1.11043E-006	0.00000E+000	0.00000E+000	1.37930E-006
Scrapers	8.67356E-001	9.54838E-001	3.89960E-001	0.00000E+000	9.82784E-001	9.81287E-001	0.00000E+000	1.15960E-006	1.15960E-006	0.00000E+000	0.00000E+000	1.15231E-006
Tractors/Loaders/Backhoes	8.88358E-001	9.49453E-001	2.92544E-002	0.00000E+000	9.89791E-001	9.88906E-001	0.00000E+000	1.18800E-006	1.18800E-006	0.00000E+000	0.00000E+000	1.18052E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction 0.00
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction 0.00
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction 55.00
Yes	Unpaved Road Mitigation	Moisture Content %	12.00	Vehicle Speed (mph) 15.00
Yes	Clean Paved Road	% PM Reduction	0.00	

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grading	Fugitive Dust	0.38	0.16	0.17	0.07	0.55	0.55
Grading	Roads	0.11	0.03	0.11	0.03	0.00	0.00

Screening HRA Heath Risk Inputs and Calculations for Project-related Construction DPM

1 24 hrs/24 hrs

*assume all PM10 exhaust is DPM

*assumption is that emissions are constant over the acres disturbed

*Exhibit I-1

Emission Calcs

0.18 PM10 (g/bhp-hr)
 0.4% Idling Load Factor (USEPA2010)
 6 Trains per day
 0.083333333 Idling Time per Train (hrs)
 3200 HP
 1600 Daily Hp-hr
 1.152 PM10 (g/day)
 3600 seconds/hour
 24 hours/day

1.33333E-05 grams/second

Screen 3 assumptions

1.5 m receptor height
 4.5 m stack height
 use discrete distances
 urban setting

SCREEN3 Emission Rate

1.33333E-05 grams/second

0.3048 conversion factor from ft to m

ft	m	SCREEN3 Distances	
650	198	receptor 1	* project boundary
700	213	receptor 2	* 50 feet from project boundary
750	229	receptor 3	* 100 feet from project boundary
800	244	receptor 4	* 150 feet from project boundary
850	259	receptor 5	* 200 feet from project boundary
900	274	receptor 6	* 250 feet from project boundary
950	290	receptor 7	* 300 feet from project boundary
1,000	305	receptor 8	* 350 feet from project boundary

Highest Concentration (650 ft)

HRA Calcs

0.02137 SCREEN3 1-hour concentration (micrograms/meter3) Value obtained from SCREEN3 output file
 0.1 1-hour --> annual conversion From June 2007 BAAQMD PERMIT MODELING GUIDANCE, pg. 4
 2.14E-03 SCREEN3 annual concentration (micrograms/meter3)
 6.19E-07 Calculated dose (mg/kg-day)
 0.681 Cancer risk (per million)
 0.00043 Hazard Index

5 Chronic inhalation REL (micrograms/meter3)
 350 Exposure frequency (EF) days/year
 70 Exposure duration (ED) Years
 25550 Averaging time (AT) days
 302 Daily breathing rate (DBR) L/kg body weight
 1 Inhalation absorption factor (A) None
 1.00E-03 Micrograms to milligrams conversion 1 microgram
 1.00E-03 liters to cubic meters conversion liters
 1.1 Cancer potency factor mg/kg-day
 1.00E+06 risk per million people None

10/13/14
16:40:09

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Dumbarton TOD

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 0.133333E-04
STACK HEIGHT (M) = 4.5000
STK INSIDE DIAM (M) = 0.1000
STK EXIT VELOCITY (M/S) = 9.1000
STK GAS EXIT TEMP (K) = 455.0000
AMBIENT AIR TEMP (K) = 293.0000
RECEPTOR HEIGHT (M) = 1.5000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.079 M**4/S**3; MOM. FLUX = 0.133 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
198.	0.2137E-01	4	1.0	1.0	320.0	7.71	15.46	8.48	NO
213.	0.1966E-01	4	1.0	1.0	320.0	7.71	16.54	9.04	NO
229.	0.1810E-01	4	1.0	1.0	320.0	7.71	17.63	9.59	NO
244.	0.1669E-01	4	1.0	1.0	320.0	7.71	18.71	10.14	NO
259.	0.1541E-01	4	1.0	1.0	320.0	7.71	19.78	10.68	NO
274.	0.1426E-01	4	1.0	1.0	320.0	7.71	20.84	11.22	NO
290.	0.1323E-01	4	1.0	1.0	320.0	7.71	21.91	11.76	NO
305.	0.1230E-01	4	1.0	1.0	320.0	7.71	22.96	12.28	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** SUMMARY OF SCREEN MODEL RESULTS ***

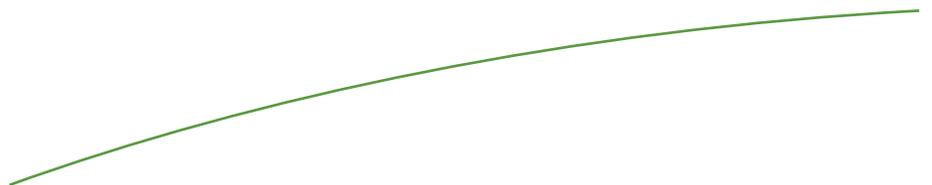
CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.2137E-01	198.	0.

** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **



Appendix E

BIOLOGICAL RESOURCES EVALUATION



Dumbarton TOD Gateway Station West Residential Project

Biological Resources Evaluation

July 2015

Prepared for:
Dumbarton Area 2, LLC
500 La Gonda Way, Suite 102
Danville, CA 94526

Prepared by:
HELIX Environmental Planning, Inc.
11 Natoma Street, Suite 155
Folsom, CA 95630

BIOLOGICAL RESOURCES EVALUATION

FOR THE

DUMBARTON TOD GATEWAY STATION WEST
RESIDENTIAL PROJECT

Prepared for:

Dumbarton Area 2, LLC
500 La Gonda Way, Suite 102
Danville, CA 94526

Prepared by:

HELIX Environmental Planning, Inc.
11 Natoma Street, Suite 155
Folsom, CA 95630

July 2015

Dumbarton TOD Gateway Station West Residential Project Biological Resources Evaluation

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F Letter from Dr. Gretchen E. Padgett-Flohr, California Environmental Services, LLC to Dr. Stephen Neudecker, Resource Balance, regarding research conducted in the project site investigating the use of disturbed habitats (such as the project site) by salt marsh harvest mouse (*Reithrodontomys raviventris*). October 2014
G Gateway Station West – Off-site Improvement Areas, Newark, California: Habitat Assessment for Salt Marsh Harvest Mouse
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1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

On behalf of Dumbarton Area 2, LLC, HELIX Environmental Planning, Inc. (HELIX) prepared this Biological Resources Evaluation (BRE) for the proposed Gateway Station West Project (proposed project) in the City of Newark, Alameda County, California. The proposed project is within the Dumbarton Transit Oriented Development (TOD) Specific Plan area (City of Newark 2010). A Final Environmental Impact Report (EIR) (RBF Consulting Inc. [RBF] 2011a; State Clearinghouse No. 2010042012) has been prepared and certified, and the Specific Plan has been adopted. For most parcels within the Specific Plan area (which includes the project site), the evaluation conducted for the EIR was programmatic. As detailed in the certified EIR, project-specific studies and documents consistent with the requirements of the California Environmental Quality Act (CEQA) are required to be completed for the proposed project prior to its development.

This BRE has been prepared in conjunction with the proposed project's required compliance with CEQA. The purposes of the BRE are (1) to document the environmental setting and existing biological conditions within the project site and off-site improvement areas; (2) to evaluate the potential for any protected plant or animal species or sensitive habitats to be present in or immediately adjacent to the project site and the off-site improvement areas and thereby be affected by the proposed project; (3) to document jurisdictional waters present in the project site and the off-site improvement areas as well as quantify any potential impacts to jurisdictional waters; (4) to document any trees in the project site and off-site improvement areas as defined by Chapter 18.16 of the City of Newark Municipal Code, entitled Preservation of Trees of Private Property and document any potential impacts to protected trees; and (5); to describe measures to avoid, minimize, and/or mitigate potential impacts to all protected biological resources in compliance with the Mitigation, Monitoring, and Reporting Program (MMRP) prepared for the Dumbarton TOD Specific Plan EIR (RBF 2011b).

1.2 PROJECT LOCATION

The 54.53-acre Gateway Station West project site is located in southwestern Alameda County within the City of Newark, California. The project site is located west of Hickory Street, and east of solar salt basins associated with the production of salt that occurs west of the site. Off-site improvements may also take place within the following locations: (1) an approximately 1.6-acre area of the 80-foot-wide Hickory Street right-of-way (ROW) east of the project site and just off the northeastern corner of the site; (2) an approximately 2-acre area of the proposed 90-foot wide Enterprise Drive ROW extending between Hickory and Willow streets; (3) an approximately 0.6-acre area of the proposed 'A' Avenue corridor extending approximately 300 feet east of Hickory Street; and (4) a 0.05-acre area adjacent to the southwestern corner of the site associated with the proposed replacement of an existing drainage culvert. The project site is generally located in a largely industrial area, with open space and existing and developing residential uses in the vicinity. The surrounding land uses are characterized by existing and former industrial parcels, with nearby business/professional centers and residential lots and an adjacent salt production facility.

The project site and off-site improvement areas are located within Section 11 of Township 5 South, and Range 2 West of the U.S. Geological Survey's (USGS) 7.5-minute "Newark, California" quadrangle map. The approximate center of the project site is at latitude: 37.517431 N, longitude: 122.053692 W, NAD 83. Figure 1 is a project location map. Figure 2 is a project vicinity map depicting the project site and surrounding areas overlaid on USGS topography. Figure 3 is a project vicinity map of the project site and surrounding areas overlaid on aerial photography.

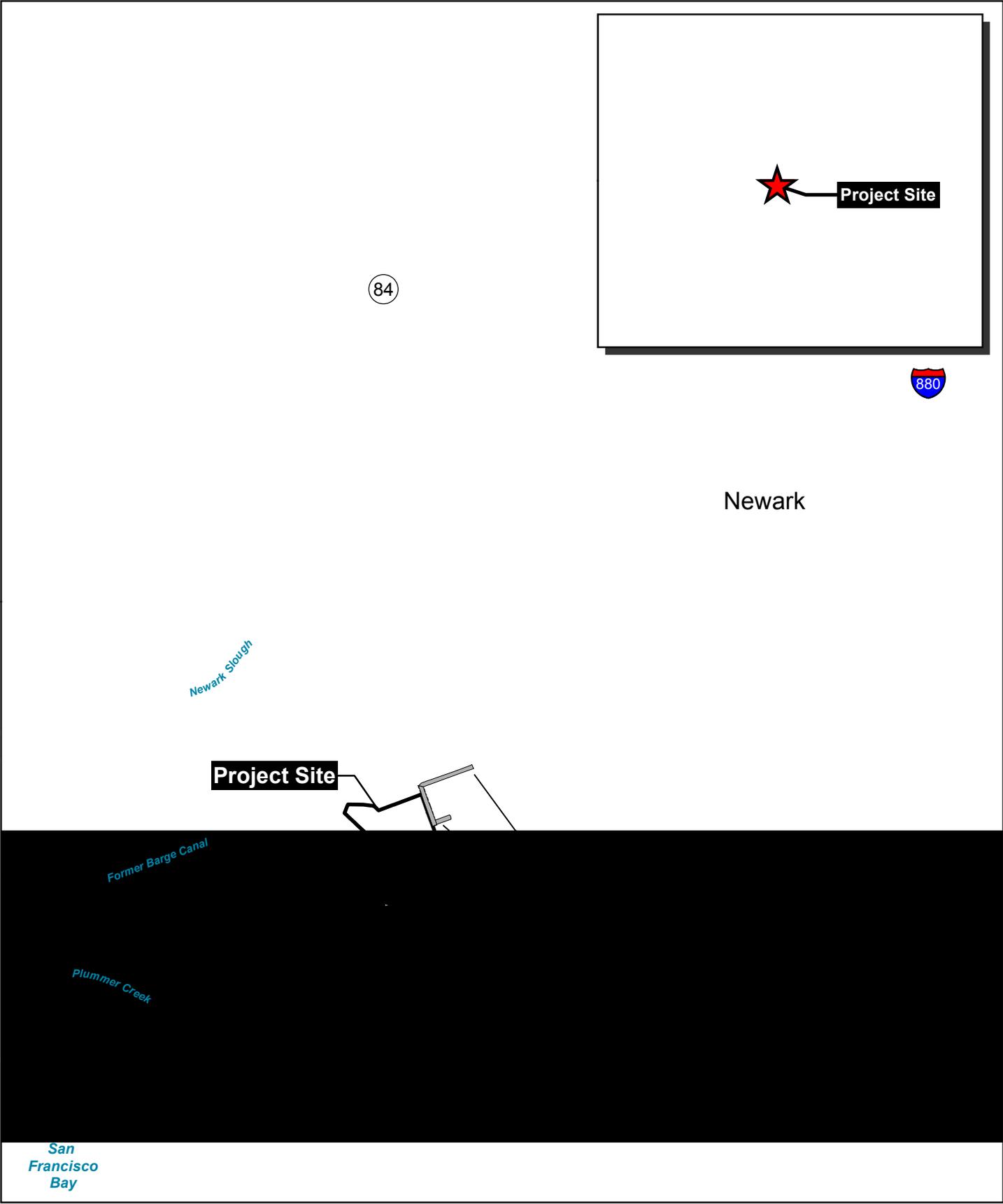
1.3 PROJECT DESCRIPTION

1.3.1 Project Characteristics

The proposed project includes development of seven villages with 589 single- and multi-family residential units and associated infrastructure (parking areas, parks, trails, storm water facilities, and roadway and utility infrastructure) on approximately 41 acres of the 54.53-acre project site. The remaining 13.55 acres are proposed as open space and will not be developed. Of those 13.55 acres 6 acres will be donated to a non-profit entity; the donation of those acres is not included in the proposed project and is not being evaluated under CEQA as part of the proposed project. Figure 4 depicts the proposed project design. Figure 5 shows the approximately 13.55-acre open space area that will be permanently preserved as well as the boundaries of the 6-acre conservation donation.

Single-family detached homes (321 units) are planned for Lots 1 through 321, and attached condominiums (268 units) are planned for Lots 322 through 361 (i.e., Units 322 through 589). Refer to Figure 4 for the proposed site plan design. A total of 321 single-family homes on approximately 15.29 net acres would comprise Villages 6, 8, 10, and 11 of the proposed project (net acres include the identified residential use, but do not include related uses such as roads, with additional information provided below). These single-family lots would range in size from approximately 1,530 to 4,456 sf (with the average single-family lot size being 2,076 sf). A total of 268 multi-family units on approximately 8.31 net acres are proposed for development within Villages 5A, 5B, 7A, 7B, and 9; multi-family lots would range in size from approximately 6,208 to 19,177 sf (with an average lot size of 9,056 sf). Additional proposed site improvements include: on and off-street parking, drive aisles, underground utilities, drainage structures, lighting, trails, sidewalks, parks and landscaping. The project features are summarized in Table 1.

S:\PROJECTS\DAT-ALL\DAT-02_GatewayStation\CEQA\GIS\MXD\June 2015\Figure 1_Regional Location Map_offsite_2015.06.09.mxd DAT-02_06/09/15-MF

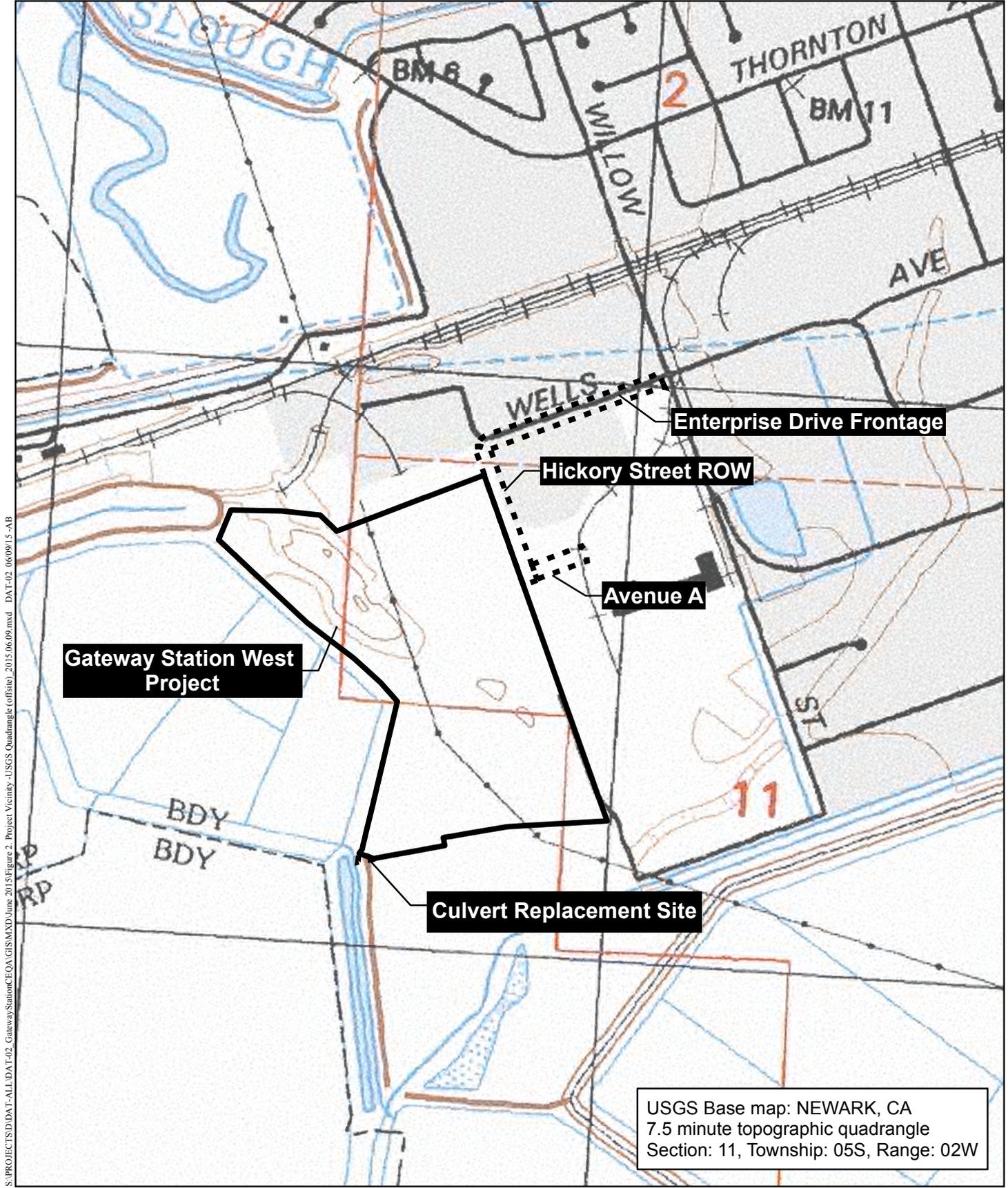


Base Map: USGS, ESRI 2014 Map Date: 06-09-2015

Site and Vicinity Map

GATEWAY STATION WEST

Figure 1



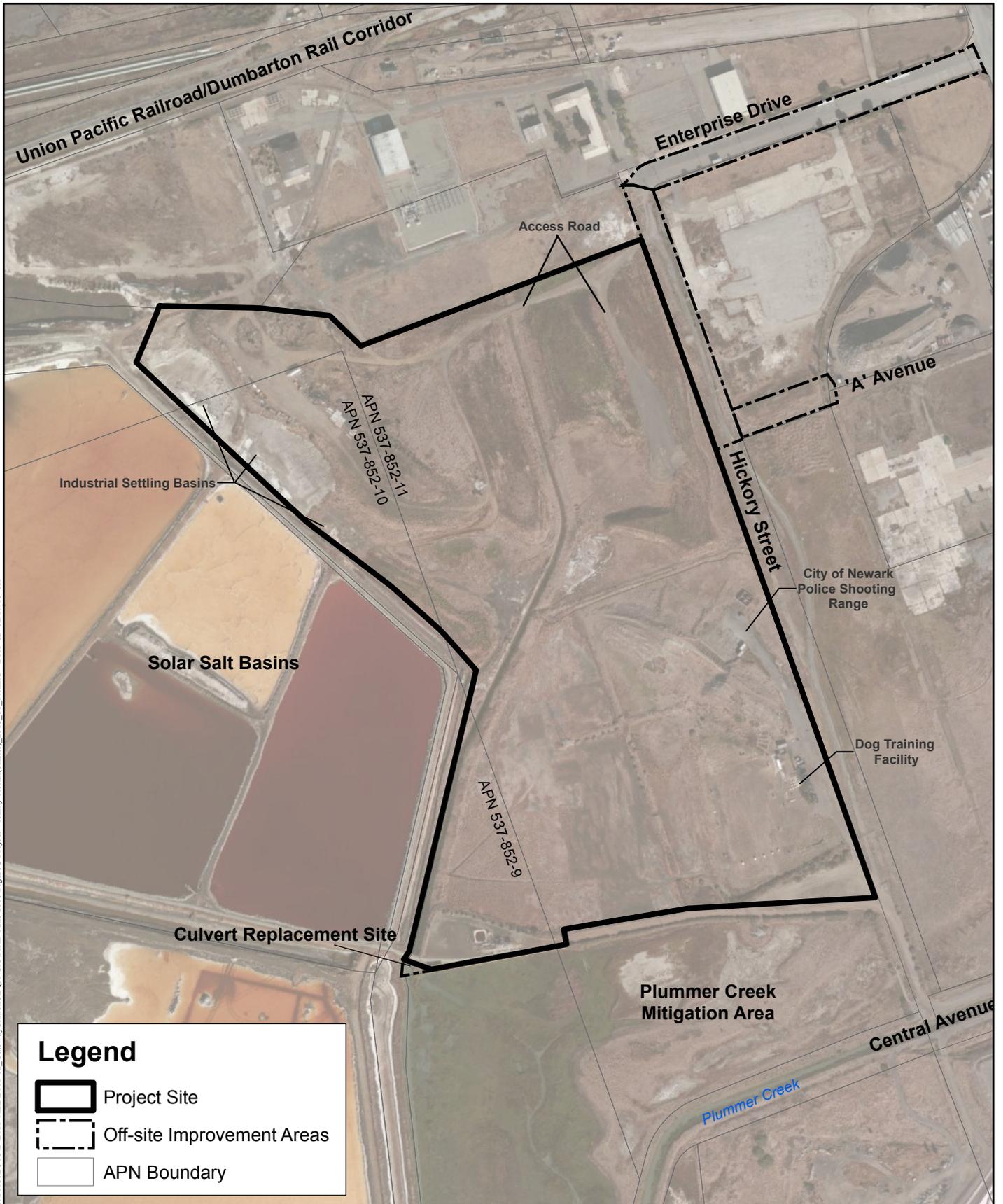
S:\PROJECTS\DAT-ALL\DAT-02_GatewayStationCEQA\GIS\MXD\June 2015\Figure 2_Project Vicinity -USGS Quadrangle (offsite).2015.06.09.mxd DAT-02_06/09/15 -AB

Map Date: 06-17-2015

USGS Quadrangle Map

GATEWAY STATION WEST
OFF-SITE IMPROVEMENT AREAS

Figure 2



S:\PROJECTS\ID\DAT-ALL\DAT-02_GatewayStation\CEQA\GIS\MXD\June 2015\Figure 3 Project Vicinity_Aerial\of\site_2015_06_17.mxd DAT-02_021915-JH

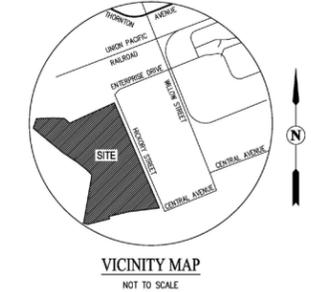
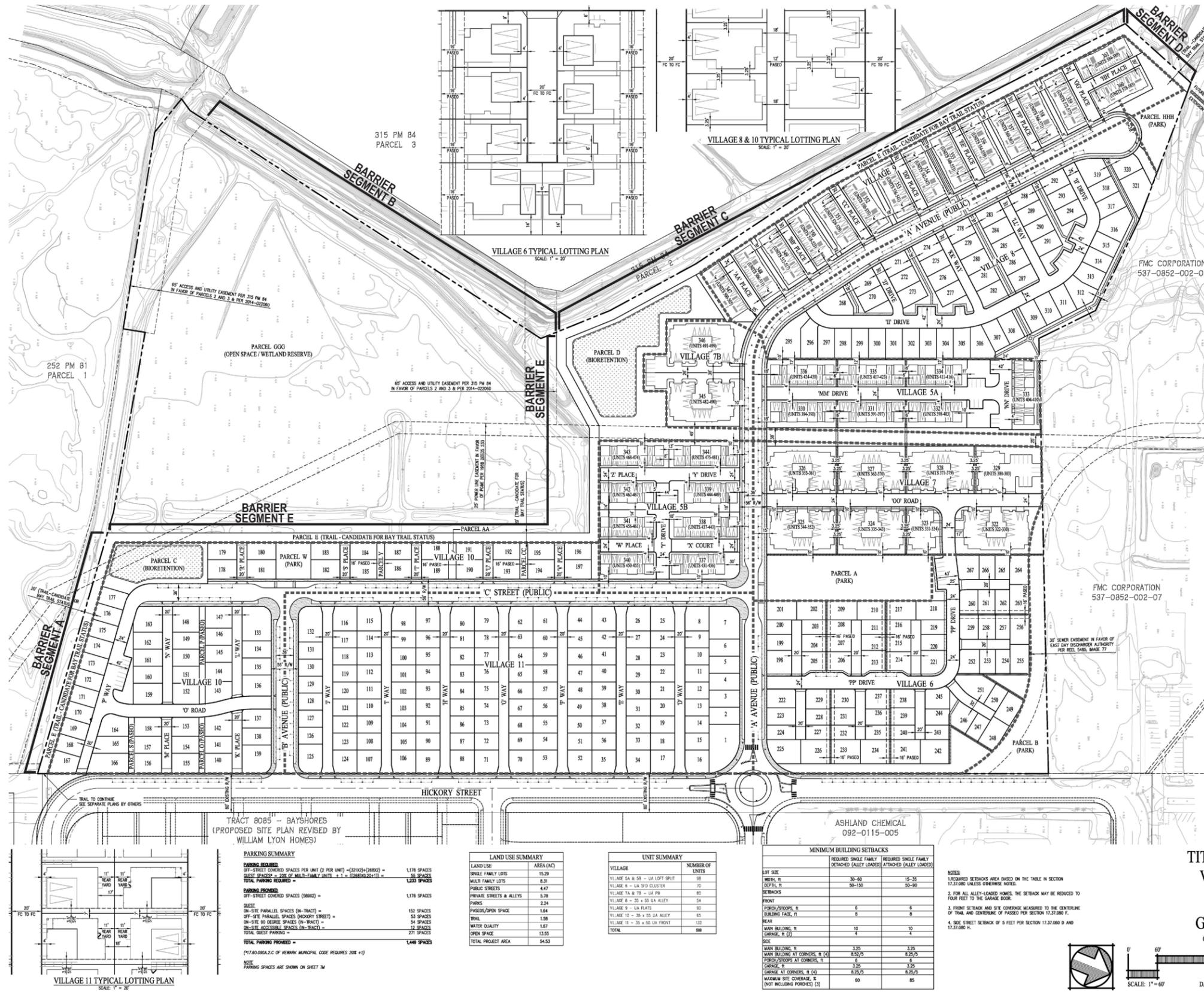
Map Date: 06-17-2015

Aerial Map

GATEWAY STATION WEST

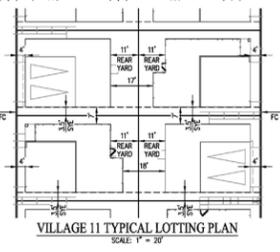
Figure 3

\\sbartm\DC\vol4\PROJECTS\DD\DATA\DAT02_GatewayStation\CEQA\Figures\Tech_DAT\02_VStudies\Noise_DAT\02_01-28-2015_JH



GENERAL NOTES:

1. OWNER/DEVELOPER: DUMBARTON AREA 2, LLC
500 LA GONDA WAY, SUITE 102
DANVILLE, CA 94526
CONTACT: GLENN BROWN
(925) 362-3749
2. ENGINEER: CARLSON, BARBEE & GIBSON, INC.
2633 CAMINO RAMON, SUITE 350
SAN RAMON, CA 94583
CONTACT: GREG MILLER
(925) 866-0322
3. SOILS ENGINEER: BERLOGAR, STEVENS & ASSOCIATES
5587 SUNOL BOULEVARD
PLEASANTON, CA 94566
CONTACT: FRANK BERLOGAR
(925) 484-0220
(925) 846-9645 (FAX)
4. EXISTING USE: LIGHT INDUSTRIAL
5. SUBDIVISION AREA:
DEVELOPABLE AREA: 54.53±
41.0±
6. NUMBER OF UNITS: 589 UNITS
7. THIS PROPERTY LIES IN THE JURISDICTION OF:
FIRE PROTECTION: CITY OF NEWARK FIRE PROTECTION DISTRICT
DOMESTIC WATER: ALAMEDA COUNTY COUNTY WATER DISTRICT
SANITARY SEWER: UNION SANITARY DISTRICT
STORM DRAIN WITHIN STREETS, LANES & PASEOS: CITY OF NEWARK (SDE)
STORM DRAIN WITHIN PRIVATE YARDS: PRIVATELY MAINTAINED BY HOMEOWNERS (PSDE)
GAS & ELECTRIC SERVICE: PACIFIC GAS & ELECTRIC
TELEPHONE SERVICE: AT&T
8. ROADWAYS AND PARCELS: UNLESS OTHERWISE NOTED (I.E. PUBLIC) ALL ROADWAYS AND PARCELS ARE TO BE MAINTAINED BY THE HOA ESTABLISHED WITH THE PROJECT. PUBLIC ACCESS EASEMENTS WILL BE DEDICATED OVER PARCEL E FOR PUBLIC USE.
9. PROPOSED LAND USE SUMMARY: SEE TABLE (THIS SHEET)
10. ASSESSORS PARCEL NUMBERS: 537-0852-009
537-0852-010
537-0852-011
11. BENCHMARK: CITY OF NEWARK OFFICIAL BENCHMARK NO. 62,
ALSO BEING AN ALAMEDA COUNTY BENCHMARK, THE TOP OF CURB AT
STORM WATER INLET AT THE NORTH-EAST CORNER OF THORNTON AVENUE
AT WILLOW STREET, ELEVATION TAKEN AS 11.39 (NAVD 88) (8.661 NAVD 29
PER CITY OF NEWARK RECORDS).
12. TOPOGRAPHY: PREPARED BY HJM GEOSPATIAL, INC. DATED MAY 2005
13. FLOOD ZONE: ZONED X AND AE
FLOOD INSURANCE RATE MAP (FIRM)
COMMUNITY PANEL NUMBER: 060009 0443 G
14. THIS PROJECT MAY BE BUILT IN PHASES AND MULTIPLE FINAL MAPS MAY BE FILED. A PHASING PLAN WILL BE PROVIDED TO THE CITY OF NEWARK PRIOR TO FINAL MAP APPROVAL.
15. LOTS 1 - 321 WILL BE RESIDENTIAL LOTS
LOTS 322 - 361 (UNITS 322-589) WILL BE CONDOMINIUM UNITS.
16. LOT DIMENSIONS AND AREAS ARE APPROXIMATE AND ARE ROUNDED TO THE NEAREST WHOLE NUMBER. EXACT DIMENSIONS AND AREAS WILL BE PROVIDED ON THE FINAL MAP
17. ALL BUILDINGS SHALL BE EQUIPPED WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 15.09.020.G OF THE NEWARK MUNICIPAL CODE.
18. GRADING SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL DESIGN.
19. ALL UTILITIES SHOWN ARE TO BE USED AS A GUIDE AND MAY CHANGE DURING FINAL DESIGN.



PARKING SUMMARY

PARKING REQUIRED:
OFF-STREET COVERED SPACES PER UNIT (2 PER UNIT) = (521X)(2) = 1,042 SPACES
GUEST SPACES = ONE (2) MULTIFAMILY UNITS = 2 SPACES
TOTAL PARKING REQUIRED = 1,044 SPACES

PARKING PROVIDED:
OFF-STREET COVERED SPACES (DRINK) = 1,178 SPACES
GUEST SPACES = ONE (2) MULTIFAMILY UNITS = 2 SPACES
ON-SITE PARALLEL SPACES (IN-TRACT) = 153 SPACES
OFF-SITE PARALLEL SPACES (HICKORY STREET) = 54 SPACES
ON-SITE ACCESSIBLE SPACES (IN-TRACT) = 14 SPACES
TOTAL GUEST PARKING = 277 SPACES
TOTAL PARKING PROVIDED = 1,448 SPACES

(174.80) AREA 2.C. OF NEWARK MUNICIPAL CODE REQUIRES 20% (+)

NOTE: PARKING SPACES ARE SHOWN ON SHEET IV

LAND USE SUMMARY

LAND USE	AREA (AC)
SINGLE FAMILY LOTS	15.29
MULTI-FAMILY LOTS	8.31
PUBLIC STREETS	4.47
PRIVATE STREETS & ALLEYS	3.38
PARKS	2.24
PASEOS/OPEN SPACE	1.64
TRAIL	1.58
WATER QUALITY	1.67
OPEN SPACE	13.55
TOTAL PROJECT AREA	54.53

UNIT SUMMARY

VILLAGE	NUMBER OF UNITS
VILLAGE 5A & 5B - 1A LOFT SPLOT	98
VILLAGE 6 - 1A 303 CLUSTER	72
VILLAGE 7A & 7B - 1A PS	80
VILLAGE 8 - 25 x 55 1A ALLEY	54
VILLAGE 9 - 1A PLATS	90
VILLAGE 10 - 30 x 55 1A ALLEY	60
VILLAGE 11 - 35 x 50 1A FRONT	132
TOTAL	686

MINIMUM BUILDING SETBACKS

LOT SIZE	REQUIRED SINGLE FAMILY DETACHED (ALLEY LOADED)	REQUIRED SINGLE FAMILY ATTACHED (ALLEY LOADED)
LOT WIDTH, FT.	30-60	15-30
DEPTHS, FT.	30-100	30-90
SETBACKS		
FRONT		
PORCH/STOOPS, FT.	6	6
BUILDING FACE, FT.	6	6
REAR		
MAIN BUILDING, FT.	10	10
GARAGE, FT. (3)	4	4
SIZE		
MAIN BUILDING, FT.	3.35	3.35
MAIN BUILDING AT CORNERS, FT. (3)	8.375	8.375
PORCH/STOOPS AT CORNERS, FT.	3.35	3.35
GARAGE, FT. (4)	8.25	8.25
GARAGE AT CORNERS, FT. (4)	8.25	8.25
MAXIMUM SITE COVERAGE, % (NOT INCLUDING PORCHES) (5)	60	85

- NOTES:**
1. REQUIRED SETBACK AREA BASED ON THE TABLE IN SECTION 17.07.000 UNLESS OTHERWISE NOTED.
 2. FOR ALL ALLEY-LOADED HOMES, THE SETBACK MAY BE REDUCED TO FOUR FEET TO THE GARAGE DOOR.
 3. FRONT SETBACK AND SITE COVERAGE MEASURED TO THE CENTERLINE OF TRAIL AND CENTERLINE OF PASEOS PER SECTION 17.07.000 F.
 4. SIDE STREET SETBACK OF 5 FEET FOR SECTION 17.07.000 D AND 17.07.000 F.

**TITLE SHEET AND SITE PLAN
VESTING TENTATIVE MAP
TRACT 8099
GATEWAY STATION WEST**

CITY OF NEWARK ALAMEDA COUNTY CALIFORNIA



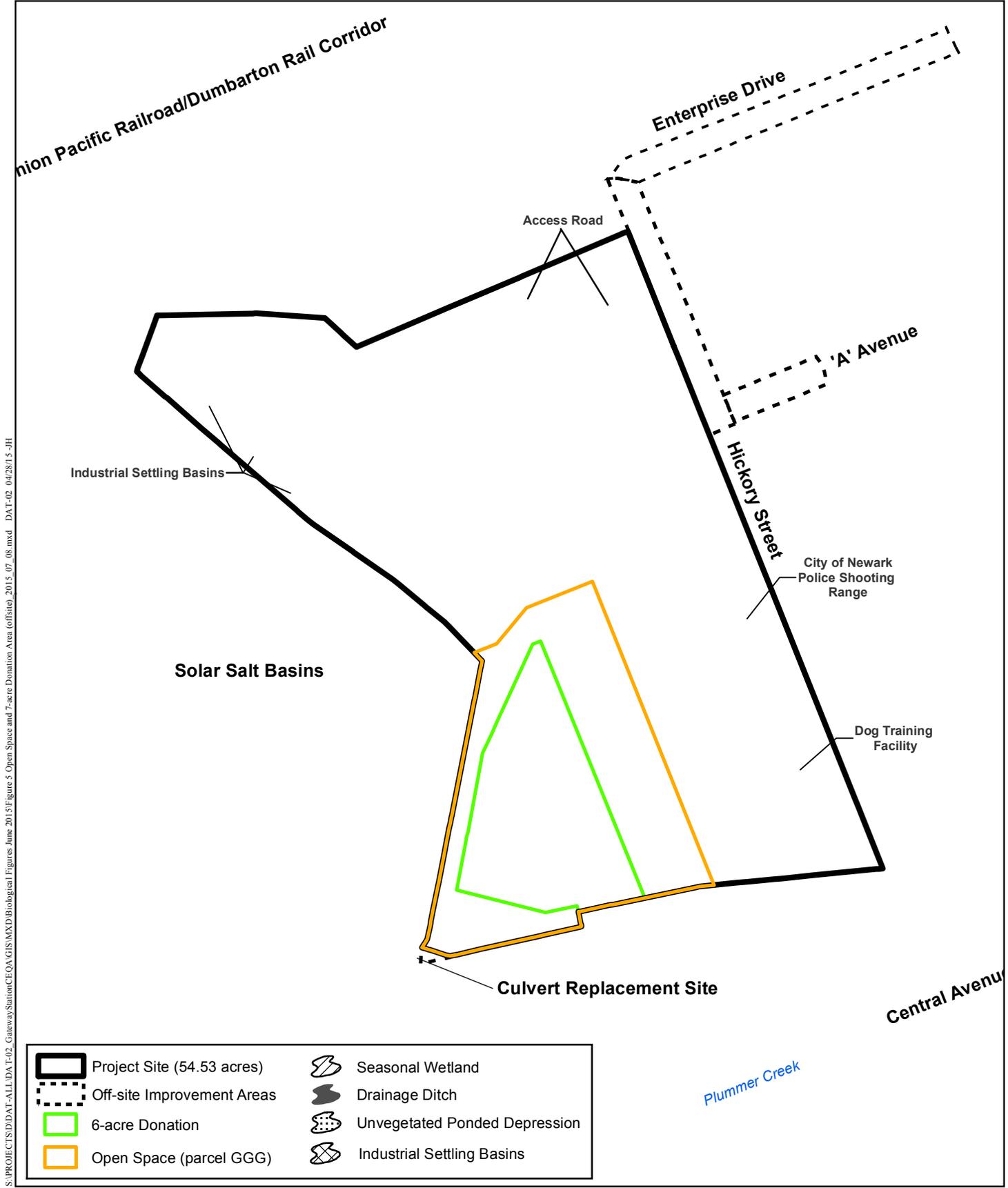
Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS - SURVEYORS - PLANNERS
2633 CAMINO RAMON, SUITE 350
SAN RAMON, CALIFORNIA 94583
(925) 866-0322
www.cbgi.com

SHEET NO. TM-1 OF 8 SHEETS



SCALE: 1" = 60'
DATE: JUNE 3, 2015

Source: Carlson, Barbee & Gibson, Inc. 2015



S:\PROJECTS\ID\DAT-ALL\DAT-02_GatewayStation\CEQA\GIS\MXD\Biological\Figures June 2015\Figure 5 Open Space and 7-acre Donation Area (offsite)_2015_07_08.mxd DAT-02_04/28/15-JH

Map Date: 07-08-2015

Open Space Preserve and 6-acre Donation

GATEWAY STATION WEST



Figure 5

Table 1 SUMMARY OF PROJECT FEATURES		
PROJECT FEATURE	NUMBER UNITS/SPACES	ACRES
Residential Development/Parking		
Single-family residential units	321 units	15.29
Multi-family residential units	268 units	8.31
Off-street covered parking spaces	1,178 spaces	---
Parallel and 90-degree street parking spaces	259 spaces	---
Handicap accessible spaces	12 spaces	---
<i>Subtotal for Residential/Parking</i>	<i>589 Units/1,449 Spaces</i>	<i>23.60</i>
Parks/Roadways/Trails/Water Quality Features		
Neighborhood parks	---	2.24
Public streets	---	4.47
Private streets and alleys	---	5.78
Paseos (walkways)/green areas	---	1.64
Candidate San Francisco Bay Trail	---	1.58
Water quality treatment basins (bioretention, etc.)	---	1.67
<i>Subtotal for Parks/Roadways/Trails/Water Quality</i>	---	<i>17.38</i>
<i>Development Totals</i>	<i>589 Units/1,405 Spaces</i>	<i>40.98</i>
Open Space/Donation		
Open space	---	7.55
Future land donation (actual land donation is not part of the proposed project)	---	6.00
<i>Open Space/Donation Totals</i>	---	<i>13.55</i>
PROJECT SITE TOTALS	589 Units/1,405 Spaces	54.53

Source: Gateway Station Vesting Tentative Map and Site Plans Tract 8099 dated June 3, 2015, prepared by Carlson, Barbee & Gibson, Inc.

Parks and Open Space

Parks and Community Use Areas

Approximately 2.24 acres of park area are included in the proposed project, with an additional 1.58 acres of public trail. One park would be sited on Parcel 'A', which would be located immediately north of the intersection of 'C' Street and 'A' Avenue. This park would feature landscaping (including trees), a turf area, outdoor workout equipment, a shaded play area with a rubberized play structure, a barbeque area, swings, picnic tables, basketball hoops and a sand volleyball court. Another park would be sited on Parcel 'B', which is located in the northeast corner of the project site near the intersection of Enterprise Drive and Hickory Street. This park would feature an open turf area, benches, large park trees, and exercise stations. A small park would also be located on Parcel 'HHH' along the northern side of the project site at the terminus of the 'A' Avenue cul-de-sac; this park would have benches and a tot lot and front the candidate San Francisco Bay Trail extension proposed on site (described below). A small park would also be located on Parcel 'HHH' along the northern side of the project site at the terminus of the 'A' Avenue cul-de-sac; this park would have benches and a tot lot and front the candidate San

Francisco Bay Trail extension proposed on site (described below). Finally, a small park would be located on Parcel ‘W’ just west of the ‘B’ Avenue and ‘C’ Street intersection in the southeastern portion of the site. This park would include a tot lot and related facilities geared towards children ages 2 to 5, as well as bench seating, decorative pavement elements and shade trees intended to create a grove-like setting. Trees planted along the perimeters of all the described parks would provide some screening between the parks and the adjacent homes.

The section of the candidate trail (Parcel ‘E’) along portions of the southern and western edges of the project site would include parallel but separate bicycle and pedestrian trails with benches and landscaping. The 20-foot wide, multi-purpose trail would be situated between the edge of development and the salt ponds and Plummer Creek Wetland Mitigation Area to the south and west of the project site. In addition, the project design includes three types of fencing/barriers along the noted trail, with these proposed barriers outlined below and the locations of the associated trail/barrier segments shown on Figure 4:

- Segment A – The section of barrier along the southern project boundary (Segment A) would consist of a 4-foot high masonry wall topped with a 4-foot high (8-foot total height) black colored woven wire mesh (not chain link) in a square or rectangular pattern. The woven wire spacing would be no tighter than 3 inches. The 2-inch square metal tubing posts would be spaced 8 to 10 feet on center, and topped with a continuous 2-inch square metal tubing rail. Fence posts and rails would also be black colored.
- Segments B through D – The entire portion of the project boundary adjacent to the solar salt basins (Segments B through D) would consist of 6-foot high woven wire mesh panels in a square or rectangular pattern, with 3-inch minimum spacing for the top 3 feet and 0.5-inch mesh spacing on the lower 3 feet. Two-inch diameter posts would be spaced approximated 8 to 10 feet on center, with the top rail and mid rail also to be 2-inch diameter. All woven wire mesh panels, posts and railings will be black colored.
- Segment E - The portion of the proposed trail/barrier inside the project boundary (Segment E) would have a 4-foot high precast concrete “split rail” fence along the eastern and southern sides. The split rail fencing would have three rails and posts spaced 8 feet on center, with all posts and rail components to be textured to simulate wood grain and sand integral color.

An additional 5.78 acres of paseos (walkways) and associated green areas are proposed on 34 separate parcels throughout the project site. These areas would be landscaped and maintained as community use areas.

Open Space

A total of 13.55-acres located in the southwest corner of the project site is designated as open space (Parcel ‘GGG’) and would be preserved and maintained as native habitat as part of the proposed project (see Figure 5). Of the 13.55 acres, it is anticipated that approximately 6 acres would be donated to a non-profit entity for conservation; however, this land donation action is not part of the proposed project. The area is characterized by seasonal wetland and segments of constructed drainage ditches – one flows north to south through the open space area, to the

southwestern corner of the project site, and another flows east/west with a small segment falling within the open space area at its northern boundary. Minor upland components occur within and around the perimeter of the wetland and drainage ditches. Fencing would be installed between the development and the open space area, and the southern boundary of the open space would remain open. Refer to the descriptions of barrier segments B and E described in “Parks and Community Use Areas” for more information.

Infrastructure

Grading and Drainage

Approximately 41 acres of the project site would be disturbed during site preparation and grading. In preparing the site for construction, existing structures associated with the pistol range and dog training area would be removed, debris and vegetation would be cleared, and the site would be graded. The project site would be graded to achieve 0.5 to 2 percent slope. Manufactured slopes would be constructed with a maximum 2:1 slope from the top of the pad to the proposed finished ground.

A portion of the site is within a Federal Emergency Management Agency (FEMA) 100-year flood zone. According to the Shoreline Areas Vulnerable to Sea Level Rise Central Bay South Inundation Map (San Francisco Bay Conservation and Development Commission [SFBCDC] 2008), the forecasted rise in sea level in the western portion of the Dumbarton Specific Plan area could increase flood related impacts, especially from storm surge-induced flood events. Section 15.40.51 of the City’s Municipal Code has flood elevation standards for lands within special flood hazard areas as defined by FEMA. Those standards require building pads of all occupied structures to be a minimum of 11.25 feet above mean sea level (AMSL) with the finished floor being a minimum of six inches above the building pad. Site elevation following grading would comply with those requirements.

A storm drain system comprised of bio-retention areas, curbs and gutters along the roadways, and underground storm drain pipes would be installed on the project site. The grading described above would delineate the site into two drainage management areas – 12.9 acres in the southeast portion of the site comprise drainage management area 1, and 26 acres in the northern portion of the site comprise drainage management area 2. Storm water in drainage management area 1 would be collected in storm drains and directed to an 18,185-sf bioretention basin located at the southern site boundary (Parcel C), just east of the open space area. The bioretention basin would feature plants and gravel to filter storm water. An overflow inlet would drain to wetlands in the open space west of the bioretention basin, and would have outfall protection consisting of loose rock rip rap to dissipate and low down the flow so as not to cause erosion. The stormwater runoff would pond in the existing wetlands, and flow overland to the drainage ditch that flows south through the open space area and exit the project site at the southwestern corner.

A second bioretention basin is located at the western site boundary (Parcel D), just north of the open space area. This 56,798-sf bioretention basin would collect and treat storm water from the storm drain system in drainage management area 2, and would function similarly to the

bioretention basin on Parcel C. The treated overflow would outlet directly to the drainage ditch that flows south through the open space area.

The existing culvert near the southwestern site boundary would be replaced to accommodate the proposed drainage. This activity would entail a total disturbance footprint of approximately 0.1 acre, with this area roughly split between on- and off-site activities. Specific elements of this replacement would involve removing the existing culvert, installing a new box culvert and related facilities such as headwalls and guardrails, and implementing applicable re-contouring/restoration. Refer to the description of the *Off-site Improvement Area Box Culvert Replacement*, below.

Water Service

The Alameda County Water District would supply water to the project site, as described in the Dumbarton TOD Specific Plan EIR. The main water service to the project site would be from 10-inch-diameter water lines installed along 'P' Way, 'A' Avenue and 'C' Street per Alameda County Water District Standards. These water lines would connect to future water lines in Hickory Street. Eight-inch diameter water lines would be installed throughout the project site, with on-site tie-ins to the 10-inch-diameter water lines and an off-site tie-in to Hickory Street at 'B' Avenue. The Alameda County Water District indicated in the adopted Water Supply Assessment for Dumbarton TOD Specific Plan EIR that demand associated with the Specific Plan would be consistent with its planning assumptions and is included in its forecast and water supply planning (Alameda County Water District 2010).

Sanitary Sewer Service

The Union Sanitary District would provide sanitary sewer service to the project site. Eight-inch diameter sanitary sewer lines would be installed in the main and ancillary roadways throughout the project site, and wastewater would gravity-flow off-site to the east via a proposed 8- to 12-inch sanitary sewer line in 'A' Avenue. This sewer line would continue east and connect to an existing 36-inch gravity sewer main in Willow Street, which ultimately connects to additional existing gravity mains and flows to the Newark Pump Station near the northwest corner of the Specific Plan area. Wastewater from the Newark Station is then pumped to the Alvarado Treatment Plant, approximately 5 miles to the north.

Easements

Existing easements on the project site would remain and are incorporated into the project Tentative Map. Specifically, a 65-foot wide access and utility easement in favor of the property to the west of the project site is located in the southwest corner of the project site. An additional 65-foot wide utility easement is located near the northern boundary of the proposed open space. From the northern site boundary, a 25-foot wide Pacific Gas and Electric (PG&E) power line easement extends north/south through the center of the project site. Near the center of the proposed open space area, the easement turns slightly and extends to the southeast. An approximately 55-foot wide area along the easement would remain undeveloped where it extends through the development area of the project site. A 30-foot wide East Bay Discharge Authority

sewer easement with existing underground sewer lines extends through the project site in the northeastern portion of the site, and follows Hickory Street. The easement would remain partially undeveloped, although the Parcel 'B' park would be constructed within a portion of the easement.

Landscaping

The project proposes a landscaping plan that includes ornamental trees, shrubs, and groundcover. The conceptual landscaping design concentrates plantings along the perimeter of the project site, along village roadways and parking areas, and in park areas. The approximately 13.55-acre open space in the southwestern corner of the project site would be left undisturbed, and would not be planted or otherwise altered.

Landscaping would include a wide array of trees and shrubs. No plant listed as invasive by the California Invasive Plant Council (Cal-IPC) would be used. Additionally, 75 percent of plants (not including turf) would be California-native, Mediterranean, or climate-adapted plants. No more than 25 percent of the total landscape area would be irrigated turf (not including sport and multiple use fields), and irrigation practices would be weather-based and include moisture and/or rain sensor shutoff mechanisms.

Off-site Improvements

Hickory Street ROW

Hickory Street would be improved in support of developments proposed to be implemented under the TOD Specific Plan. Improvements would include the addition of travel lanes, curb and gutter, sidewalks and landscaping. All improvements would remain within the existing 80-foot-wide ROW that is partially located outside of the project site. The project applicant may be responsible for constructing improvements within the existing ROW for the northernmost approximately 715 linear feet (the approximately 1.6-acre Hickory Street ROW). The remainder of the roadway may be constructed under the Torian Project which is currently permitted and under construction; however, if the proposed project is constructed before the Torian Project, the project applicant would be responsible for constructing full-width improvements along the shared portion of Hickory Street adjacent to the Torian project site. However, the construction costs would be partially assumed by the project applicant – the project applicant would be required to construct or pay for one half of the width of the street and the sidewalk and landscaping on the west side of the road (adjacent to the proposed project site).

'A' Avenue

The project site could also be accessed via the future extension of 'A' Avenue between Hickory and Willow Streets, through the Torian project site to the east of the project site. Depending on the timing of construction of the Torian Project (which includes construction of 'A' Avenue), the project applicant may be responsible for constructing an approximately 300-foot portion of 'A' Avenue extending east from Hickory Street (refer to Figure 5). The noted off-site portion of 'A' Avenue would include a 56-foot wide ROW, with specific improvements assumed to be

similar to those proposed for the on-site portions of 'A' Avenue (and this assumption to be verified during final design). Specifically, these improvements would include two 10-foot wide travel lanes, two 8-foot wide parking lanes, two 5-foot wide sidewalks, and two 5-foot wide landscape corridors. Enterprise Drive ROW

Based on the current timing of the Torian and SHH projects, the proposed project would also implement improvements to Enterprise Drive within an approximately 2.3-acre area located north and east of the site (with Enterprise Drive to provide site access via Hickory Street, refer to Figure 5). Specifically, proposed improvements to Enterprise Drive would be located within a proposed 90-foot wide ROW corridor extending approximately 1,100 feet between Hickory and Willow Streets. This area includes the paved roadway of Enterprise Drive and its southern frontage to 11 feet from the edge of pavement. These improvements would include construction of a 12-foot wide median curb in applicable portions of the noted roadway segment, as well as installation of a 5-foot wide sidewalk and an adjacent 6-foot wide landscape corridor along the southern edge of the proposed Enterprise Drive ROW (with all of the noted improvements except the proposed 5-foot wide sidewalk located within the existing 80-foot wide Enterprise Drive ROW).

Culvert Replacement Site

The constructed north-south drainage ditch through the project site connects to an off-site channel south of the project site via a culvert located at the southwest corner of the project site. A sheet pile barrier in front of the culvert prevents water generated on site from draining off-site. This culvert is proposed be replaced with a box culvert which would involve the following activities: (1) installation of a temporary sheet pile barrier along the southern (downstream) edge of the existing access road/culvert along the southern site boundary; (2) excavation and removal of the existing culvert; (3) installation of a new 18-foot long, 8-foot wide and 4-foot deep single box culvert, along with associated head walls and vehicle guard rails; (4) removal of the temporary sheet pile; and (5) re-contouring of graded areas and restoration of impacted wetlands.

1.3.2 Cut and Fill Quantities/Impervious Surfaces

Approximately 250,000 cubic yards of soil would be cut and used on site as fill for grading and construction of the building pads, along with an additional 100,000 cubic yards of soil that would be imported to the project site. A total of 993,557 sf of impervious area would be constructed on the project site, consisting of building foundations and paved areas. A total of 3,000 sf of existing structure and 2,000 sf of existing concrete pavement would be demolished and removed from the project site.

1.3.3 Construction and Phasing

Grading activities are anticipated to begin in September 2016 and are expected to last four months. Infrastructure construction activities including utilities and construction of the building pads are anticipated to begin in the Spring or Summer of 2017, and are expected to last six months. Site development activities would immediately follow, with all development construction activities to be completed within approximately four years or by October 2020.

1.3.4 Environmental Remediation and Mitigation

The project site has a history of hazardous materials contamination associated with previous land uses. The site has been subject to several remediation and clean-up actions that have been completed under State supervision. In 2001, the owner entered into a voluntary cleanup agreement with the Regional Water Quality Control Board (RWQCB) and several inches of topsoil containing lead and asphaltic sleet targets containing polycyclic aromatic hydrocarbons (PAHs) were excavated and disposed of off-site. The areas were left to recover naturally and the RWQCB certified case closure in 2004.

Portions of the site contain some elevated levels of hazardous materials that must be remediated prior to site development. These areas are located in the southeastern portion of the site, and along an existing drainage ditch that runs north/south through the project site Hayley & Aldrich 2014b). Remediation activities would include excavation and disposal of shallow soil prior to project construction.

The bedrock outcrop located in the southeastern portion of the site is comprised of serpentinite that contains chrysotile, a form of naturally occurring asbestos. The bedrock outcrop would either be removed to a safe location prior to site development or buried and covered with the appropriate amount of top soil.

2.0 REGULATORY SETTING

Regulations pertaining to the protection of biological resources in the project site and vicinity are summarized in the following sections.

2.1 FEDERAL REQUIREMENTS

2.1.1 Federal Endangered Species Act

The United States Fish and Wildlife Service (USFWS) enforces the provisions stipulated within the Federal Endangered Species Act of 1973 (FESA, 16 USC Section 1531 et seq.). Species identified as federally threatened or endangered (50 CFR Section 17.11, and 17.12) are protected from take, defined as direct or indirect harm, unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via a Section 7 consultation. Pursuant to the requirements of the FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally-listed species may be present on the project site and determine whether the proposed project will have a potentially significant impact on them. Under the FESA, habitat loss is considered to be an impact to a species. In addition, the USFWS is required to determine whether the project is likely to jeopardize the continued existence of any species that is proposed for listing under the FESA or to result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]). Therefore, project related impacts to those species or their habitats would be considered significant and would require mitigation. Other federal agencies designate species of concern (species that have the

potential to become listed), that are evaluated during environmental review although they are not otherwise protected under the FESA. Impacts to those species or their habitats would likewise be considered significant and would require mitigation.

2.1.2 Migratory Bird Treaty Act

Under the Executive Order 13186: Migratory Bird Treaty Act of 1918 (MBTA) (16 USC Subsections 703 to 712), migratory bird species, their nests and eggs are protected from injury or death; these species are listed at 50 CFR Section 10.13. Project related disturbances must be reduced or eliminated during the breeding season. The USFWS has statutory authority and responsibility for enforcing the MBTA.

2.2 STATE REQUIREMENTS

2.2.1 California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code Sections 2050 to 2097) is similar to the FESA. The California Fish and Game Commission is responsible for maintaining lists of threatened and endangered species under the CESA. CESA prohibits the take of listed and candidate (petitioned to be listed) species. “Take” under California law means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch capture, or kill (California Fish and Game Code Section 86). The California Department of Fish and Wildlife (CDFW) can authorize take of a state-listed species under Section 2081 of the California Fish and Game Code if the take is incidental to an otherwise lawful activity, the impacts are minimized and fully mitigated, funding is ensured to implement and monitor mitigation measures, and CDFW determines that issuance would not jeopardize the continued existence of the species. A CESA permit must be obtained if a project will result in the take of listed species, either during construction or over the life of the project. For species listed under both the FESA and the CESA requiring a Biological Opinion under Section 7 of the FESA, CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

2.2.2 California Code of Regulations and California Fish and Game Code

The official listing of endangered and threatened animals and plants is contained in the California Code of Regulations Title 14 § 670.5. A state candidate species is one that the California Fish and Game Code has formally noticed as being under review by CDFW for inclusion on the state list pursuant to Sections 2074.2 and 2075.5 of the California Fish and Game Code.

Legal protection is also provided for wildlife species in California that are identified as “fully protected animals.” These species are protected under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fishes) of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species at any time. The CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by these species. The CDFW has informed non-federal agencies and private parties

that they must avoid take of any fully protected species. However, Senate Bill 618 (2011) allows the CDFW to issue permits authorizing the incidental take of fully protected species under the CESA, so long as any such take authorization is issued in conjunction with the approval of a Natural Community Conservation Plan that covers the fully protected species (California Fish and Game Code Section 2835).

2.2.3 California Environmental Quality Act

Under CEQA (Public Resources Code Section 21000 *et seq.*), lead agencies analyze whether projects would have a substantial adverse effect on a candidate, sensitive, or special-status species (Public Resources Code Section 21001(c)). These “special-status” species generally include those listed under the FESA and the CESA, and species that are not currently protected by statute or regulation, but would be considered rare, threatened, or endangered under the criteria included in the State CEQA Guidelines Section 15380. Therefore, species that are considered rare are addressed in this study regardless of whether they are afforded special protection through any other statute or regulation. The California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity; plants ranked by the CNPS as 1A, 1B, and 2 are generally considered special-status species under CEQA.¹

Although threatened and endangered species are protected by specific federal and state statutes, State CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare if it can be shown to meet certain specified criteria. Those criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or the CDFW (i.e., candidate species) would occur. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agency has an opportunity to designate the species as protected, if warranted.

2.2.4 California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (California Fish and Game Code Sections 1900 to 1913) requires all state agencies to use their authority to implement programs to conserve endangered and otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use other than changing from one agricultural use to another, which allows CDFW to salvage listed plants that would otherwise be destroyed.

2.2.5 Nesting Birds

California Fish and Game Code Subsections 3503 and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. California Fish and Game Code Subsection 3503.5 protects all birds in the orders Falconiformes and Strigiformes (birds of prey).

¹ The CNPS rare plant ranking system can be found online at < <http://www.cnps.org/cnps/rareplants/ranking.php>>

California Fish and Game Code Section 3511 lists birds that are “fully protected” as those that may not be taken or possessed except under specific permit.

2.3 LOCAL REQUIREMENTS

2.3.1 Dumbarton Transit Oriented Development Specific Plan

The proposed project is within the Dumbarton TOD Specific Plan area. A Final EIR (State Clearinghouse No. 2010042012) has been prepared and certified, and the Specific Plan has been adopted. For most parcels within the Specific Plan area (including the proposed project site), the evaluation conducted for the Dumbarton TOD Specific Plan EIR was programmatic. That EIR requires project-specific studies and documentation to be completed for subsequent development in the Specific Plan area consistent with the requirements of CEQA. The Specific Plan EIR also contains measures to avoid, minimize, or mitigate potential impacts to biological resources in its Mitigation, Monitoring, and Reporting Program (MMRP) that are required to be implemented by applicants proposing future projects in the Specific Plan area.

2.3.2 City of Newark Municipal Code

Chapter 18.16 of the City of Newark Municipal Code: Preservation of Trees of Private Property states: No person shall cut down, destroy, remove or move any tree, which shall include any live woody plant having one or more well defined perennial stems with a trunk diameter of 6 inches or greater measured at 4 feet above ground level, growing within the City limits on any parcels of land except developed residential parcels of land 10,000 SF or less in area, unless a permit to do so has been obtained from the Public Works Director (Ordinance 63 § 2 (part), 1979).

2.4 JURISDICTIONAL WATERS

2.4.1 Federal Requirements

Any person, firm, or agency planning to alter or work in waters of the U.S., including the discharge of dredged or fill material, must first obtain authorization from the U.S. Army Corps of Engineers (USACE) under Section 404 of the CWA (33 USC 1344). Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act of 1899 prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from USACE (33 USC 403).

Waters of the U.S. are defined as: (1) all waters used in interstate or foreign commerce; (2) all interstate waters including interstate wetlands; (3) all other waters such as intrastate lakes, rivers, streams, mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, where the use, degradation, or destruction of which could affect interstate commerce; (4) impoundments of these waters; (5) tributaries of these waters; or (6) wetlands adjacent to these waters (33 CFR Part 328). With non-tidal waters, in the absence of adjacent wetlands, the extent of USACE jurisdiction extends to the ordinary high water mark (OHWM), the line on the shore established by fluctuations of water and indicated by a clear, natural line

impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, or the presence of litter and debris. Wetlands are defined in 33 CFR Part 328 as:

Those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Federal and state regulations pertaining to waters of the U.S., including wetlands, are discussed below.

Clean Water Act (33 USC 1251-1376). The CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 of the CWA requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. must obtain a state certification that the discharge complies with other provisions of CWA. The California Environmental Protection Agency's (CalEPA) State Water Resources Control Board (SWRCB) administers the certification program in California, and may require a Section 401 Water Quality Certification before other permits can be issued. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S.

Section 404 of the Clean Water Act (CWA; 33 USC 1344). Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S. (including wetlands). Implementing regulations by USACE are found at 33 CFR Parts 320-332. The Section 404 (b)(1) Guidelines were developed by the U.S. Environmental Protection Agency (USEPA) in conjunction with USACE (40 CFR Part 230), allowing the discharge of dredged or fill material for non-water dependent uses into special aquatic sites only if there is no practicable alternative that would have less adverse impacts.

2.4.2 State Requirements

Porter-Cologne Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 *et seq.*) is California's statutory authority for the protection of water quality in conjunction with the federal CWA. The Porter-Cologne Act requires the SWRCB and its RWQCBs to adopt and periodically update water quality control plans, or basin plans. Basin plans establish beneficial uses, water quality objectives, and implementation for the nine regions of California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill material to notify the RWQCB of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, NPDES permits, Section 401 Water Quality Certifications, or other approvals.

California Fish and Game Code

Diversions or obstructions of the natural flow of, or substantial changes or use of material from the bed, channel, or bank of any river, stream, or lake in California that supports wildlife

resources are subject to regulation by CDFW, pursuant to Section 1600 *et seq.* of the California Fish and Game Code. The CDFW requires notification prior to commencement of any such activities, and a Streambed Alteration Agreement (SAA) pursuant to Fish and Game Code Sections 1601 to 1603, if the activity may substantially adversely affect an existing fish and wildlife resource.

3.0 STUDY METHODS

Sensitive biological resources are defined as those biological resources protected by the regulations summarized in Chapter 2.0 *Regulatory Setting*. The methods used in preparation of this BRE to evaluate potential impacts to sensitive biological resources are presented in the following sections. The evaluations included database searches, a review of published literature and existing documentation regarding biological resources in the project site, and numerous biological surveys.

3.1 REVIEW OF EXISTING BIOLOGICAL DOCUMENTATION

Information was incorporated into this BRE from the following sources that document previous biological and wetland studies conducted within the project site:

- *Habitat Suitability Index for the Salt Marsh Harvest Mouse for the Hill Parcel* (WRA 1999)
- *Special Status Species Habitat Assessment and Impact Analysis Report for the Newark Gun Club* (WRA 2001)
- *Certified Arborist Tree Inventory, Gateway Station Project, City of Newark, California* (HELIX 2014a; Appendix A)
- *Delineation of Potential Jurisdictional Waters of the United States, Parcel 1 of Parcel Map 9837, City of Newark, California* (HELIX 2015a as revised; Appendix B)
- *Parcel 1 of Parcel Map 9837, Newark, California: Habitat Assessment for Salt Marsh Harvest Mouse* (California Environmental Services 2014a; Appendix C)
- *Burrowing Owl Survey Report, Parcel 1 of Parcel Map 9837, City of Newark, California* (HELIX 2014c; Appendix D)
- *Rare Plant Survey Letter Report, Parcel 1 of Parcel Map 9837, City of Newark, California* (HELIX 2014d; Appendix E)
- Letter from Dr. Gretchen E. Padgett-Flohr, California Environmental Services, LLC to Dr. Stephen Neudecker, Resource Balance, regarding research conducted in the project site investigating the use of disturbed habitats (such as the project site) by salt marsh harvest mouse (*Reithrodontomys raviventris*; California Environmental Services 2014c; Appendix F)

The following sources document biological and wetland studies conducted within the off-site improvement areas:

- *Gateway Station West – Off-site Improvement Areas, Newark, California: Habitat Assessment for Salt Marsh Harvest Mouse* (California Environmental Services, LLC 2015; Appendix G) (covers Hickory Street ROW, Avenue A, culvert replacement)
- *Delineation of Potential Waters, Gateway Station West Off-site Improvement Areas Project* (HELIX 2015; Appendix H)

3.2 SPECIAL-STATUS SPECIES EVALUATION

For the purposes of this BRE, special-status species are those that fall into one or more of the following categories:

- Listed as endangered or threatened under the FESA (including candidate species and species proposed for listing),
- Listed as endangered or threatened under the CESA (including candidate species and species proposed for listing),
- Designated as a Species of Special Concern by the CDFW; and/or
- Designated as California Rare Plant Rank 1, 2, or 3.

The most current lists of special-status plant and animal species known to occur and/or having the potential to occur in the project region were reviewed to determine the potential for those regionally occurring, special-status species to be present on the project site or otherwise be affected by any project-related activities. The following lists were reviewed for special-status species and sensitive natural communities known to occur or potentially occurring in the “Newark, California” USGS 7.5-minute quadrangle and are included as Appendix I:

- USFWS list of federally protected species (USFWS 2015),
- CNPS list of special-status plants (CNPS 2015)
- California Natural Diversity Database (CNDDB) list of special-status species (CDFW 2015).

Appendix J presents the general habitat requirements, status, presence or absence of suitable habitat; and rationale for each special-status species and sensitive natural community evaluated. Special-status species and sensitive natural communities for which no suitable habitat is present on the project site were excluded from further evaluation. Special-status species for which suitable habitat is present on the project site are evaluated in detail in Chapter 5.

3.3 BIOLOGICAL SURVEYS CONDUCTED

Biological surveys/studies conducted at the project site and off-site improvement areas include wetland delineations, a biological reconnaissance survey, a tree inventory, burrowing owl surveys, a branchiopod survey, focused rare plant surveys, a salt marsh harvest mouse habitat

assessment, and a small mammal, live-trapping study. Table 2 summarizes the biological surveys that have been conducted at the project site, and Table 3 summarizes the biological surveys that have been conducted on the off-site improvement areas in support of the proposed project.

Table 2		
SUMMARY OF BIOLOGICAL SURVEYS CONDUCTED AT THE PROJECT SITE		
SURVEY DATE(S)	PERSONNEL	PURPOSE
Biological Surveys Conducted by HELIX		
08/06/2013	Stephen Stringer, Catherine Silvester	Delineation of wetlands and other waters of the U.S./State
08/13/2013	Stephen Stringer, Catherine Silvester	Delineation of wetlands and other waters of the U.S./State
12/11/2013	Stephen Stringer, Catherine Silvester	Biological reconnaissance survey, tree inventory
03/27/2014	Stephen Stringer	Burrowing owl survey
04/02/2014	Stephen Stringer	Branchiopod survey
04/30/2014	Stephen Stringer	Rare plant survey; burrowing owl survey
05/29/2014	Stephen Stringer	Burrowing owl survey
06/20/2014	Stephen Stringer	Burrowing owl survey
07/18/2014	Stephen Stringer	Rare plant survey
08/08/2014	Stephen Stringer	Rare plant survey
09/11/2014	Stephen Stringer	Rare plant survey
Biological Studies conducted by California Environmental Services		
03/17/2014	Dr. Gretchen E. Padgett-Flohr	Salt marsh harvest mouse habitat assessment
09/08-09/12, 2014	Dr. Gretchen E. Padgett-Flohr	Small mammal live-trapping

**Table 3
SUMMARY OF BIOLOGICAL SURVEYS CONDUCTED AT THE OFF-SITE
IMPROVEMENT AREAS**

SURVEY DATE(S)	PERSONNEL	PURPOSE
Biological Surveys Conducted by HELIX		
10/20/2014	Stephen Stringer	Biological reconnaissance, botanical survey, wetland delineation, and arborist survey of Hickory Street ROW.
03/02/2015	Stephen Stringer	Biological reconnaissance, botanical survey, and wetland delineation of culvert replacement site.
03/16/2015	Stephen Stringer	Biological reconnaissance, botanical survey, and wetland delineation of 'A' Avenue.
03/25/2015	Stephen Stringer	Biological reconnaissance and burrowing owl habitat assessment of Hickory Street ROW, culvert replacement site, 'A' Avenue.
04/14/2015	Stephen Stringer	Burrowing owl survey and rare plant survey of Hickory Street ROW, culvert replacement site, 'A' Avenue
05/08/2015	Stephen Stringer	Rare plant survey of Hickory Street ROW, culvert replacement site, 'A' Avenue
05/19/2015	Stephen Stringer	Burrowing owl survey and rare plant survey of Hickory Street ROW, culvert replacement site, 'A' Avenue
06/04/2015	Catherine Silvester	Biological reconnaissance, botanical inventory of Enterprise Drive ROW.
06/21/2015	Stephen Stringer	Arborist inventory of Enterprise Drive ROW, burrowing owl survey and rare plant survey of Hickory Street ROW, culvert replacement site, and 'A' Avenue
Biological Studies conducted by California Environmental Services		
03/30/2015	Dr. Gretchen E. Padgett-Flohr	Salt marsh harvest mouse habitat assessment of Hickory Street ROW, culvert easement, and Avenue A.

3.3.1 Jurisdictional Delineation

HELIX prepared separate delineations of wetlands and other waters of the U.S./State for the project site and the off-site improvement areas (HELIX 2015a; 2015b). No potential wetlands or other waters of the U.S. were identified in the Enterprise Drive Frontage, and this area is not included in the jurisdictional delineation for the off-site improvement areas. The delineations were conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0; USACE 2008). The limits of potential waters of the U.S./State (wetlands and other waters) were mapped in the field using a Trimble GeoXT® sub-meter accurate global positioning system (GPS) and aerial photography. Those data were

exported into ArcMap 10[®] and then used to produce the maps of potential waters of the U.S. and calculate the acreages of potential waters of the U.S. on the sites.

The jurisdictional delineations for the project site and the off-site improvement areas are included as Appendices B and H, respectively. The results of the jurisdictional delineations are also incorporated into this BRE.

3.3.2 Biological Reconnaissance Survey

Biological reconnaissance surveys were conducted on the project site and off-site improvement areas to determine the existing conditions, identify biological habitats/vegetation communities on the project site, conduct a general botanical and wildlife inventory, conduct a tree inventory, and identify the habitats present on the project site that have the potential to support special-status species. Vegetation communities/habitat types were mapped by conducting pedestrian surveys of the project site while noting changes in plant communities based on the composition of predominant plant species. An inventory of plant and animal species observed during the biological reconnaissance surveys is included as Appendix K.

3.3.3 Certified Arborist Tree Inventory

HELIX conducted an inventory of trees protected under Chapter 18.16 of the City of Newark Municipal Code, entitled *Preservation of Trees of Private Property*, on the project site and off-site improvement areas. The arborist survey of trees on the project site was conducted on December 11, 2013 by International Society of Arboriculture (ISA) Certified Arborist Stephen Stringer, M.S. (WE-7129A), and Catherine Silvester. Mr. Stringer conducted an arborist survey in the Hickory Street ROW on October 20, 2014, and the Enterprise Drive frontage on June 21, 2015. No trees are present on Avenue A or the culvert replacement site, so no arborist surveys of those areas were conducted. All live woody plants in the project area meeting the City of Newark's definition of a tree were assessed. The diameter of each tree was measured at approximately 4 feet above ground level using a diameter logger's tape measure. For multi-trunked trees, the diameter of each trunk was measured. The location of trees with one or more trunks with a diameter of six inches or greater were measured at four feet above ground level and recorded using a Trimble GeoXH GPS. For each tree recorded, the species, trunk diameter(s), height, and vigor were recorded on a data sheet. Each tree was evaluated for vigor and assigned a category ranging from poor (likely to die within 5 years) to fair (dead branches, burns, rots, insects, etc.; but will survive more than 5 years) to excellent. Comments such as number of trunks, irregularities, scars or other growth characteristics or vigor indicators were recorded for each tree.

The *Certified Arborist Tree Inventory, Gateway Station Project, City of Newark, California* that was prepared by HELIX in June 2015 to document the methods and results of the arborist inventory on the project site and off-site improvement areas is included as Appendix A. The results of the tree inventory are also incorporated into this BRE.

3.3.4 Protocol Burrowing Owl Surveys

HELIX conducted breeding season burrowing owl surveys at the project site, 'A' Avenue, Hickory Street ROW, and culvert easement site according to the guidelines prepared by CDFW in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Each site was surveyed multiple times during the burrowing owl breeding season. During each survey, the entire site was surveyed by walking transects spaced approximately 15 to 20 meters apart and stopping every 100 meters or less to scan the surrounding area for burrowing owl presence with binoculars. All observed mammal burrows were searched for sign of recent use by burrowing owls such as excrement, feathers, and owl pellets.

Burrowing Owl Survey Report, Parcel 1 of Parcel Map 9837, City of Newark, California prepared by HELIX in June 2014 to document the methods and results of the burrowing owl survey conducted in the project site is included as Appendix D. The results of the burrowing owl surveys conducted to date within the off-site improvement areas are also incorporated into this BRE.

3.3.5 Branchiopod Surveys

During the biological survey conducted on March 27, 2014, Mr. Stringer observed fairy shrimp in several of the seasonal wetlands on the project site. On March 28, 2014, Mr. Stringer requested permission from USFWS to collect and identify the fairy shrimp specimens per the terms of his Federal Fish and Wildlife Recovery Permit (TE-141359-2). Upon receiving authorization from David Kelly of the USFWS to collect the fairy shrimp, Mr. Stringer collected and identified the shrimp on April 2, 2014. The correspondence between Mr. Stringer and David Kelly is included in Appendix L.

The shrimp were identified as the common brine shrimp (*Artemia franciscana*), as would be expected because of the site's proximity to salt ponds along the margins of San Francisco Bay and the highly alkaline condition of the site's wetlands. Because the industrial settling basins and seasonal wetlands support common brine shrimp, they are too saline to support any listed species of fairy shrimp. In California, the only other fairy shrimp ever reported to have been collected in the same body of water as brine shrimp is the non-listed *Branchinecta campestris*, and those two species have been found together only in Soda Lake in San Luis Obispo County (Belk 1999). Therefore, the project site has no potential to support special-status branchiopods.

3.3.6 Rare Plant Surveys

HELIX conducted focused rare plant surveys at the project site to determine presence/absence of regionally-occurring special-status plant species. Mr. Stringer conducted rare plant surveys on the project site on April 30, July 18, August 8, and September 11, 2014. Mr. Stringer conducted rare plant surveys on 'A' Avenue, Hickory Street ROW, and the culvert replacement site in March, April, May and June 2015. Ms. Silvester conducted rare plant surveys on the Enterprise Drive ROW on June 4, 2015. The surveys were conducted by walking north/south transects across the site at approximately 50-foot intervals, adjusted to account for vegetation height/density, to obtain 100 percent visual coverage of the site. When wetland areas were encountered, they were searched intensively for potential special-status plants. An inventory of

plant species observed was prepared during each site visit. All plant species encountered during the rare plant surveys were identified to the taxonomic level necessary to determine whether or not they were special-status species. Floral nomenclature follows Baldwin et al. 2012.

Rare Plant Survey Letter Report, Parcel 1 of Parcel Map 9837, City of Newark, California prepared by HELIX in October 2014 to document the methods and results of the rare plant surveys is included as Appendix E. The results of the rare plant surveys are also incorporated into this BRE along with the results of the rare plant surveys conducted to date within the off-site improvement areas.

3.3.7 Salt Marsh Harvest Mouse Habitat Assessment

Dr. Gretchen Padgett-Flohr, a 10(a)(1)(A) salt marsh harvest mouse-permitted mammologist (Permit No. TE006112-6) conducted a habitat assessment for salt marsh harvest mouse at the project site (previously known as Parcel 1 of Parcel Map 9837). She conducted a separate habitat assessment of the Hickory Street ROW, Avenue A and culvert easement. No habitat assessment of the Enterprise Drive frontage was conducted due to lack of habitat. Both habitat assessments involved conducting a pedestrian survey of the entire area, and assessing the area being surveyed for potential suitability for salt marsh harvest mouse. The habitat assessment of the project site was conducted on 03/17/2014 (Appendix C) and the habitat assessment of the off-site improvement areas was conducted on 03/30/2015 (Appendix G). For both habitat assessments, the CNDDDB was queried to identify all documented occurrences of salt marsh harvest mouse within 5 miles of the survey area over the last 30 years. The habitat assessments are included as Appendices C and G and the results of the habitat assessment are incorporated into this BRE.

3.3.8 Small Mammal Live-Trapping Study

Dr. Padgett-Flohr conducted live trapping for small mammals at the Gateway Station West project site as part of a research project investigating the potential use of disturbed habitats by salt marsh harvest mouse. A total of 443 trap nights for small mammals was conducted at 36 randomly selected sample sites throughout the project site beginning September 8, 2014 and ending September 12, 2014. A letter reporting the methods and results of the study is included as Appendix F and the results of the study are incorporated into this BRE.

4.0 RESULTS: ENVIRONMENTAL SETTING

4.1 LOCATION DESCRIPTION

The proposed project is located within the Dumbarton TOD Specific Plan Area, which is comprised of former industrial parcels planned for future transit-oriented, mixed-use development. The project site is bounded to the north by a former industrial facility owned and operated by FMC Corporation and by Enterprise Drive, to the east by vacant and disturbed former industrial parcels, including the Torian property which is under construction to develop a residential subdivision, to the south by Wildlands' Plummer Creek Wetland Mitigation Bank,

and to the west by active salt basins. The Hickory Street ROW is on Hickory Street and is bounded to the north by Enterprise Drive and to the east by a vacant formerly industrial parcel; to the south by the remaining undeveloped Hickory Street; and to the west by the project site. “A Avenue” is adjacent to the Hickory Street ROW and is bounded by a vacant formerly industrial parcel to the north, and the Torian property to the south. The Enterprise Drive ROW is bound by vacant former industrial properties to the north and south, Hickory Street to the west, and Willow Street to the east. The culvert replacement site is bound by the project site to the north and east, Cargill owned property to the west, and Wildlands’ Plummer Creek Wetland Mitigation Bank to the south. The San Francisco Bay is approximately 1.9 miles west of the project site.

The project site has been used in the past for various industrial activities, recreational uses, and police training. Those activities have resulted in the construction and operation of industrial settling basins associated with the manufacture of bromine and magnesia compounds, excavation of waste ditches, removal of rock, and the placement of stockpile materials in upland areas. Access roads circumnavigate the site, and large areas are used for equipment parking/staging. The settling basins in the northwest portion of the project site were constructed in uplands as part of the processes of the former FMC industrial facility (WRA 2013). Two constructed ditches are present in the project site; one of the ditches runs generally north/south through the site and the other runs east/west and connects to the north/south ditch.

Before World War II, a recreational pistol range was present in the southeastern portion of the Gateway Station West project site and then the Newark Sportsmen’s Club operated a skeet shooting range there from 1969 to 1995. The City of Newark has leased an area in the southeastern portion of the project site for use as a police pistol range since 1975, but use of lead shot was discontinued approximately 6 to 8 years ago. The City of Newark Police Department is currently using the property for a pistol range and dog training facility. Structures associated with the dog training facility are located in the southeast portion of the project site as well as parking areas, and mowed/maintained training areas. Dog training activities were observed during the site visits.

The project site has also been subject to clean up actions that have been completed under State supervision. In 2001, the owner entered into a voluntary cleanup agreement with RWQCB and several inches of topsoil containing lead and polycyclic aromatic hydrocarbons (PAHs) were excavated and disposed of off-site. The areas were left to recover naturally and RWQCB certified case closure in 2004.

Hickory Street follows the eastern project site boundary, connecting Enterprise Drive to the north and Central Avenue to the south. The Hickory Street ROW off-site improvement area included in the proposed project is comprised of the northernmost 715 feet of City ROW for Hickory Street. This ROW contains the slightly elevated roadbed for the undeveloped aggregate roadway, as well as topographically lower areas on both sides of the roadway, presumably intended for drainage and other utilities. Several vegetated depressions as well as a drainage ditch are located on the western side of the road, between the undeveloped road and the project site. A 30-foot-wide East Bay Discharge Authority sewer easement with existing underground

sewer lines (a 33-inch diameter sanitary sewer force main), parallels the west side of Hickory Street in the Hickory Street ROW.

‘A’ Avenue is a currently undeveloped corridor along the northern boundary of the undeveloped and disturbed property east of the project site. ‘A’ Avenue is relatively flat with some wetland depressions along the southern and eastern boundaries. As previously described, the Enterprise Drive ROW is the paved roadway of Enterprise Drive and its southern frontage to 11 feet from the edge of pavement. A 6-foot-high chain link fence follows the roadway from its intersection with Hickory Street, eastward for approximately 750 feet. The westernmost 450 feet of the chain link fence are within the Enterprise Drive ROW, and are set back approximately 6 feet from the edge of pavement. A segment of aggregate gravel sidewalk is between the fence and roadway, and the remainder of the frontage is generally unimproved, disturbed upland. The culvert replacement site is comprised primarily of a drainage ditch and seasonal wetland with some disturbed upland areas on berms around the ditch. Directly above the culvert there is a wood platform with pumping equipment.

4.2 TOPOGRAPHY AND SOILS

Terrain in the project site is characterized by a series of natural hills; upland soil stockpiles; constructed basins; wetland depressions, and flat expanses. The surface elevations on the project site range from about 8 to 10 feet amsl, with the exception of a serpentinite outcrop that extends to approximately 26 feet amsl, and stockpile storage areas that reach 30 to 35 feet amsl. The rock outcrop is located in the southeastern portion of the site, and is comprised of serpentine bedrock that contains chrysotile, a form of naturally occurring asbestos.

The off-site improvement areas are relatively flat – topography in the Hickory Street ROW is associated with the slightly raised roadbed, and topography in the culvert replacement site is associated with constructed berms around the ditch. The surface elevations of the Hickory Street ROW and ‘A’ Avenue range from approximately 5 to 9 feet amsl. The surface elevation of the Enterprise Drive Frontage is approximately 11 feet amsl, and the surface elevations in the culvert replacement site range from approximately 7 to 10 feet amsl.

Soil types in the area were obtained from the online Natural Resources Conservation Service, (NRCS) soil survey on July 31, 2013 (Figure 6). The entire project site is mapped as poorly drained clay/clay loam (NRCS 2013a); however, the bedrock outcrop on site is comprised of serpentinite bedrock that contains chrysotile. The soil types identified by NRCS as occurring in the project site and the off-site improvement areas are described in detail below as modified from the online NRCS soils unit descriptions (NRCS 2013a). Typical soil profiles do not exist in many portions of the project site as a result of past land uses.

133 – Pescadero Clay, drained

The entire project site, Avenue “A,” culvert replacement site, and a portion of the Hickory Street ROW are mapped as Pescadero clay. This soil is comprised of 85 percent Pescadero and similar soils, and 15 percent minor components (Willows and Omni). The Pescadero clay component is characterized by poorly drained alluvial soils derived from sedimentary rock, and typically

S:\PROJECTS\DAT-ALL\DAT-02_GatewayStation\CEQA\GIS\MXD\June 2015\Figure 6_Soil Map(offsite)_2015 06 12.mxd ABC-01 04/17/13 -AB



Source: Esri, USGS, USDA Map Date: 06-12-2015

Soil Map

GATEWAY STATION WEST

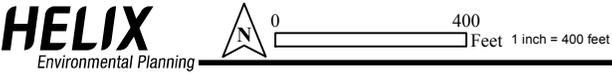


Figure 6

occurs on nearly level basin rims at elevations of 0 to 100 feet amsl. The typical depth to a restrictive layer is more than 80 inches, and the depth to the water table is approximately 48 to 72 inches.

A typical profile of this soil is clay loam from a depth of 0 to 2 inches, clay from a depth of 2 to 30 inches, and clay loam from a depth of 30 to 60 inches. The frequency of flooding in this soil type is classified as “none” and the frequency of ponding is classified as “none.” This soil series has a low water capacity. Pescadero clay, drained is listed as a hydric soil on the national hydric soils list for depressional features (NRCS 2013b).

125 – Marvin Silt Loam, saline – alkali

Marvin silt loam occurs in the northeast corner of the Hickory Street ROW, and in the entire Enterprise Drive Frontage. This soil is comprised of 85 percent Marvin and similar soils, and 15 percent minor components (Pescadero and Willows). The Marvin silt loam component is characterized by somewhat poorly drained soils derived from sedimentary rock, and typically occurs on the toe of slope of stream terraces at elevations of 10 to 100 feet amsl. The typical depth to a restrictive layer is more than 80 inches, and the depth to water table is approximately 42 to 72 inches.

A typical profile of Marvin silt loam is silt loam from a depth of 0 to 4 inches, clay from a depth of 4 to 36 inches, and clay loam from a depth of 36 to 60 inches. The frequency of flooding in this soil type is classified as “none” and the frequency of ponding is classified as “none.” Marvin silt loam is listed as a hydric soil in Alameda County on the national hydric soils list (NRCS 2012).

4.3 HYDROLOGY

The project area falls within two watersheds: the San Francisco Bay Estuaries watershed (HUC12 18050041001) and the Plummer Creek-Frontal San Francisco Bay Estuaries watershed (HUC12 180500040702). Plummer Creek is a tidal channel south of the project site that is connected to the San Francisco Bay 2.3 miles westward via Newark Slough.

Precipitation is the only source of water for the project site, Hickory Street ROW, Avenue “A,” and Enterprise Drive Frontage. The culvert replacement site is fed by tidal influence from Plummer Creek.

Water within the seasonal wetlands and drainage ditches on the project site generally drains to the north/south drainage and then southward toward Plummer Creek. A sheet pile barrier prevents water from leaving the site in compliance with a Stormwater Pollution Prevention Plan (SWPPP) that was designed to prevent storm water generated on the site from entering the Bay.

The seasonal wetlands in the Hickory Street ROW occur within a low point in the topography between the aggregate base of the partially improved Hickory Street roadbed and higher elevation uplands on the adjacent Gateway Station West project site. Direct precipitation and stormwater runoff from adjacent uplands collect in the seasonal wetlands. The seasonal wetlands

are in closed depressions with no surface outflow – higher elevation uplands and berms surround the seasonal wetlands on all sides.

The Hickory Street ROW receives storm water run-off from Enterprise Drive and the adjacent Torian property. The drainage ditch in the Hickory Street ROW is fed by a culvert outfall that collects stormwater runoff from drop inlets along the north and south sides of Enterprise Drive. The drainage ditch terminates at the north side of a dirt/gravel access road that enters the project site.

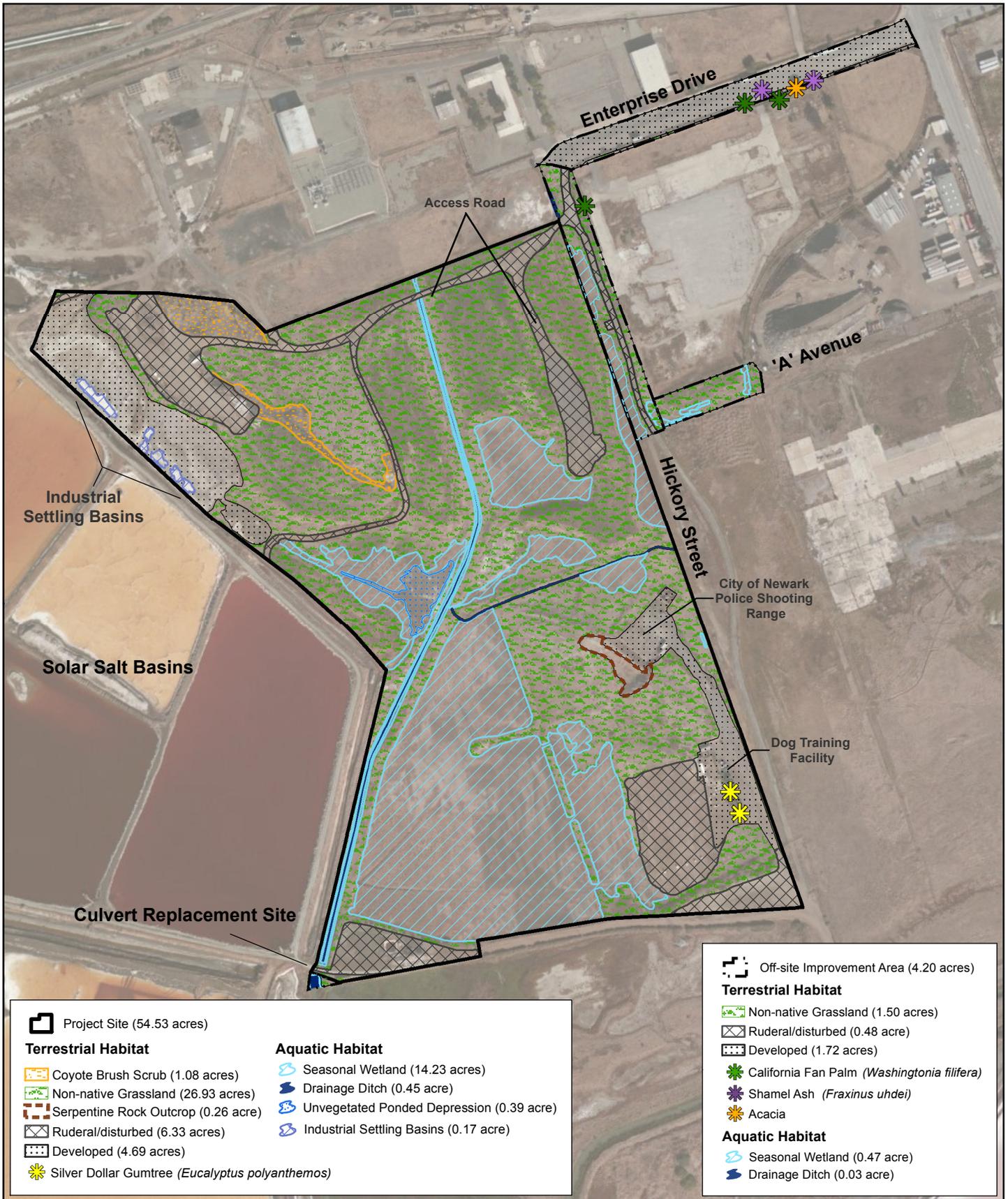
The seasonal wetlands in ‘A’ Avenue also occur within low points in the topography, apparently created or enhanced by past soil disturbance associated with the construction of Hickory Street and surrounding development. Direct precipitation and stormwater runoff from adjacent uplands collect in the seasonal wetlands. The two seasonal wetlands in “Avenue A” are also in closed depressions with no surface outflow – higher elevation uplands and berms surround the wetland on all sides.

Stormwater runoff in the Enterprise Drive Frontage collects along the edges of the roadway, and enters the storm drain system via gutters in the roadway. A storm drain inlet located in the ROW also collects stormwater runoff and directs it to the storm drain.

The drainage ditch in the off-site culvert replacement site is fed by tidal influence from Plummer Creek. A sheet pile in the drainage ditch just north of the access road restricts water in the ditch from leaving or entering the Gateway Station West project site. The wetlands along the margins of the drainage ditch are sustained by brackish water in the ditch.

4.4 VEGETATION COMMUNITIES/BIOLOGICAL HABITAT TYPES

Habitat types in the project site include non-native grassland, ruderal/disturbed, developed, coyote brush scrub, serpentine rock outcrop, seasonal wetland, drainage ditch, unvegetated ponded depression, and constructed, industrial settling basin. Table 4 summarizes the existing vegetation communities/biological habitat types in the project site and off-site improvement areas. The distribution and characteristics of the habitat types are presented in the following sections. Figure 7 is a habitat map of the project areas and Appendix K includes a list of plant species observed in the project site and the off-site improvement areas.



Base Map: Esri, USGS Map Date: 06-24-2015

Habitat Map

GATEWAY STATION WEST

**Table 4
EXISTING HABITAT TYPES IN
THE PROJECT SITE AND OFF-SITE IMPROVEMENT AREAS**

HABITAT TYPE	GATEWAY STATION PROJECT SITE (ACRES)	OFF-SITE IMPROVEMENT AREAS				TOTAL HABITAT TYPE (acres)
		Hickory Street ROW (acres)	'A' Avenue (acres)	Enterprise Drive ROW (acres)	Culvert Replacement Site (acres)	
Terrestrial						
Coyote Brush Scrub	1.08	--	--	--	--	1.08
Non-Native Grassland	26.93	0.85	0.56	0.07	0.02	28.43
Serpentine Rock Outcrop	0.26	--	--	--	--	0.26
Ruderal/Disturbed	6.33	0.38	--	0.10	--	6.81
Developed	4.69	--	--	1.79	--	6.48
Aquatic						
Seasonal Wetland	14.23	0.40**	0.07	--	<0.01	14.70
Drainage Ditch	0.45	<0.01	--	--	0.03	0.48
Unvegetated Poned Depression	0.39	--	--	--	--	0.39
Industrial Settling Basin (aquatic)	0.17	--	--	--	--	0.17
TOTAL	54.53	1.63	0.63	1.96	0.05	58.80

* Totals may not add as the result of rounding

** This area includes 0.21 acre adjacent to the Torian Project that is included in that project's aquatic resource permits.

4.4.1 Terrestrial Biological Communities

Coyote Brush Scrub

A total of 1.08 acres of coyote brush scrub habitat occurs primarily along a relatively undisturbed ridgeline in the northwestern portion of the project site. Coyote brush (*Baccharis pilularis*) is the predominant shrub canopy (approximately 15 percent or greater cover) over a grassy understory. Similar to those described above in the non-native grassland habitat, the grassy understory contains primarily non-native grass and forb species typical of disturbed sites.

Non-native Grassland

A total of 26.93 acres of non-native grassland occurs throughout the project site, and an additional 1.5 acres occurs in all of the off-site improvement areas. This is the predominant habitat on the project site, and it occurs primarily within areas that have been previously disturbed by industrial operations, such as stockpiles and non-depressional areas with soil previously removed or treated by clean-up operations. In the off-site improvement areas, this habitat type is the predominant terrestrial habitat, and it occurs in upland areas that are not currently developed or maintained relatively vegetation free (e.g., developed and ruderal areas in Enterprise Drive and Hickory Street). This habitat type is characterized by non-native grasses

such as wild oats (*Avena fatua*), Bermuda grass (*Cynodon dactylon*), and Italian rye grass (*Festuca perennis*). Forbs such as stinkwort (*Dittrichia graveolens*), milk thistle (*Silybum marianum*), and five-horned smotherweed (*Bassia hyssopifolia*), are common throughout the grassland, and shrubs such as alkali heath (*Frankenia salina*) and big salt bush (*Atriplex lentiformis* spp. *lentiformis*) occur sparsely. The non-native grassland in the Hickory Street ROW, Avenue “A,” and Enterprise Drive Frontage is occasionally mowed.

Serpentine Rock Outcrop

As described earlier, a 0.26-acre rock outcrop is located in the southeastern portion of the project site, and reaches approximately 26 feet amsl. That outcrop is comprised of serpentinite bedrock that contains chrysotile, a form of naturally occurring asbestos. Vegetation on the rock outcrop consists primarily of non-native grass and forb species similar to those described above in the non-native grassland habitat.

Ruderal/Disturbed

A total of 6.33 acres of ruderal/disturbed habitat occurs in the project site, 0.38 acre occurs within the Hickory Street ROW, and 0.10 acre occurs within the Enterprise Drive ROW. On the project site, this habitat primarily occurs along access roads and areas cleared for equipment and materials storage. In the Hickory Street ROW, this habitat occurs within the unpaved, cleared roadway, and in the Enterprise Drive ROW, this habitat occurs in sparsely vegetated areas of the ROW with no ground treatment (e.g., sidewalks). These areas are largely devoid of vegetation, but may contain non-native plant species that commonly occur in poor soils and disturbed habitats, including species such as wild oats, Bermuda grass, bristly ox tongue (*Helminthotheca echioides*), and five-horned smotherweed. No ruderal/disturbed habitat occurs in ‘A’ Avenue or the culvert replacement site.

Developed

Developed land is where permanent structures, pavement, and/or other land uses prevent the growth of vegetation, or where the vegetation is associated with landscaping and is clearly tended and maintained. Developed portions of the project site (a total of 4.69 acres) include active and abandoned structures and facilities (e.g. the pistol range and dog training area) and constructed, industrial settling basins. The settling basins (which comprise 2.87 acres of the 4.69 acres of developed land) are located in the northwest corner of the project site. They are highly alkaline and contain gypsum and other salts, and are subject to ongoing maintenance activities. As a result, these features are largely devoid of vegetation and have low biological habitat value. Portions of the settling basins contain aquatic habitat as described in Section 4.4.2. Developed portions of the Enterprise Drive Frontage include the aggregate sidewalk, paved driveways to adjacent properties, and paved roadway. No developed area occurs within the Hickory Street ROW, Avenue “A,” or the culvert replacement site.

4.4.2 Aquatic Habitats

Seasonal Wetlands

Seasonal wetlands on the project site and off-site improvement lands are located either in topographical depressions or at the margins of water sources, with a hydrologic regime characterized by temporary saturation or inundation capable of supporting hydrophytic plant species and hydric soils. A total of 14.23 acres of seasonal wetland occur in the project site and are adjacent to drainage ditches or ponded features on or off site. An additional 0.48 acre of seasonal wetland occurs on the off-site improvement lands. The seasonal wetlands on the project areas have been disturbed, and several of the wetlands are the result of ground disturbance associated with previous land uses.

Areas of the project site that retain water for a longer duration feature stands of Pacific swampfire, opposite leaf Russian thistle (*Salsola soda*; nonnative), and red saltwort (*Salicornia rubra*; native). These pickleweed stands occur in the lower elevation areas of the site - primarily in the southernmost portion of the project site, and along the margins of the north/south drainage ditch and the unvegetated ponded depression. As previously mentioned, these wetlands are seasonally inundated and in general, the native pickleweed (Pacific swampfire and red saltwort) occur sparsely in the brackish pickleweed wetlands, and are short in stature. The densest stands of Pacific swampfire and red saltwort occur as a narrow band along either side of the channel of the north/south drainage ditch.

The wetland located in the southern portion of the project site encompasses more than half of the southern portion of the project site and is generally topographically flat with berms along its perimeter. Portions of this wetland were previously scraped to remove lead shot. These areas are slightly topographically lower, and much of the remaining soils contain gravel and cobble. This wetland has been mapped as brackish pickleweed wetland because it is characterized by a predominance of red saltwort and Pacific swampfire, which are generally short in stature. The composition and density of these species are dependent on the depth and duration of the ponded water – the vegetation is less dense and is either limited to the annual red saltwort or is barren in deeper areas that pond water for a longer duration. The majority of the wetland is sparsely vegetated or barren, and the greatest vegetation cover is in the southwestern portion of the wetland.

The remaining seasonal wetlands on the project site, Hickory Street ROW and ‘A’ Avenue are also brackish seasonal wetlands that are inundated less frequently or are characterized primarily by saturation. These seasonal wetlands are vegetated with species such as perennial rye grass (*Festuca perennis*), seaside barley (*Hordeum marianum*), coastal salt grass (*Distichilis spicata*), and alkali sea-heath. These wetlands are located in the northern portions of the project site, and occur in depressional areas between stock piles, along access roads, and areas excavated as part of previous site remediation activities.

The seasonal wetland in the culvert replacement site occurs along the margins of the drainage ditch in the easement. This seasonal wetland is tidally influenced and characterized by gumweed

(*Grindelia* sp.), Italian ryegrass (*Festuca perennis*), and coastal salt grass with a marginal amount of Pacific swampfire.

Drainage Ditches

Two constructed drainage ditches (0.46 acre) occur within the project site: one runs north/south through the project site, and the other runs east/west, bisecting the property. Both drainage ditches are man-made, and collect surface runoff from the site. The north/south drainage ditch flows southward until it reaches a sheet pile barrier at the southwestern end of the project site that prevents water from draining off-site. Since runoff collected in the ditch cannot leave the site, water collected either evaporates, infiltrates, or is pumped to wherever it's needed in the adjacent salt production facilities. The northern extension of the drainage ditch is mapped as seasonal wetland because of a lack of a defined bed and bank.

The segment of the north/south drainage ditch in the project site was mostly dry at the time of the site visits, although some standing water was present near the southern end of the ditch. Throughout the Gateway Station West project site, the bottom of the ditch is devoid of vegetation. The banks of the ditch support seasonal wetlands characterized by Pacific swampfire and opposite leaf Russian thistle (*Salsola soda*) (described as brackish pickleweed wetland, above). The east/west ditch was dry during the site visits, and the ditch bottom and banks are vegetated with red saltwort and opposite leaf Russian thistle.

One constructed drainage ditch (0.004 acre) occurs within the Hickory Street ROW. The drainage ditch receives stormwater run-off from Enterprise Drive. The drainage ditch is vegetated primarily with upland grasses and forbs occurring in the surrounding non-native grassland.

Unvegetated Poned Depression

The 0.39-acre unvegetated ponded depression on the project site is located in a topographic depression surrounded by seasonal wetland, but the depression is devoid of vegetation. A culvert connects the unvegetated ponded depression to the north/south ditch. The depression collects runoff from the site and when it exceeds capacity, drains to the ditch through the culvert. Seed shrimp carapaces (*Ostracoda* sp.) were observed in the depression when it was dry, and brine shrimp (*Artemia franciscana*) were observed in the depression when it was inundated.

Industrial Settling Basins (aquatic)

The industrial settling basins were constructed as part of the industrial processes. These basins are devoid of vegetation, and are largely considered to be a developed habitat (see the description of the settling basins in Section 4.4.1, *Developed*), but do collect surface runoff which ponds within depressions in the bottoms of the settling basins. Brine shrimp inhabit the depressions in the bottoms of the w settling basins.

4.5 WILDLIFE

The project site and off-site improvement areas provide suitable habitat for a variety of wildlife species commonly inhabiting the San Francisco Bay area. Eucalyptus trees, barn owl boxes, and utility line towers on the project site and adjacent areas provide potential nesting habitat for various raptors, and the upland habitats provide suitable foraging habitat. Red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), and barn owl (*Tyto alba*) have been observed foraging over the project site during biological surveys. Although limited, the trees and shrubs on the project site and off-site improvement areas provide suitable nesting habitat for various passerines. Passerines including mourning dove (*Zenaida macroura*), rufous-crowned sparrow (*Dendroica coronata*), white-crowned sparrow (*Zonotrichia leucophrys*), black phoebe (*Sayornis nigricans*), and yellow-rumped warbler (*Dendroica coronata*) have been observed foraging and perching in a variety of habitats in the project site and various passerine nests have been observed in the project site in the coyote brush scrub and in the salt bush along the southern boundary of the site. During the winter, the ponded seasonal wetlands provide suitable foraging habitat for migratory waterfowl, raptors, and passerines.

Black-tailed jackrabbit (*Lepus californicus*), house mice (*Mus musculus*), and Columbian black-tailed deer (*Odocoileus hemionus* var. *columbianus*) have been observed at the site. Additional common mammals likely to occur include coyote (*Canis latrans*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), and raccoons (*Procyon lotor*). Reptiles that may be present include gopher snake (*Pituophis melanoleucus*) and western fence lizard (*Sceloporus occidentalis*).

5.0 RESULTS: DISCUSSION OF SENSITIVE BIOLOGICAL RESOURCES AND POTENTIAL IMPACTS

5.1 DISCUSSION OF PROTECTED TREES

A total of eight trees meeting the criteria for protection under the City of Newark Municipal Code were identified on the project site and off-site improvement areas. Two non-native silver dollar gum trees (*Eucalyptus polyanthemos*) are located on the project site adjacent to the dog training facility in the southeast corner of the site, and are generally in good condition. One California fan palm (*Washingtonia filifera*) occurs within the Hickory Street ROW, and two California fan palms, two shamel ash trees (*Fraxinus uhdei*), and one acacia (*Acacia* sp.) meeting the criteria for protection under the Municipal Code are located in the Enterprise Drive ROW. Refer to Figure 7 for the locations of the trees in the project area. The *Certified Arborist Tree Inventory Technical Memorandum*, including a Tree Location Map documenting the location of the protected trees in the project area and the Arborist Survey Data Form containing the data associated with each tree inventoried is included as Appendix A.

Both of the silver dollar gum trees occurring on the project site would be removed to facilitate implementation of the proposed project. Proposed improvements along the Enterprise Drive ROW would require that the two shamel ash trees and the California fan palms be removed. The acacia straddles the boundary of the Enterprise Drive ROW project limits and may be able to be

retained. The California fan palm within the Hickory Street ROW straddles the boundary of the off-site project limits and may be able to be retained.

5.2 DISCUSSION OF VEGETATION COMMUNITIES/BIOLOGICAL HABITAT TYPES, SENSITIVE HABITATS OR SPECIAL-STATUS NATURAL COMMUNITIES

5.2.1 Vegetation Communities/Biological Habitat Types

Existing habitats in the project area are described in Section 4.4.1. Potential impacts to all habitat types in the project site are summarized in the following table (Table 5), and are depicted on Figure 9.

Table 5 SUMMARY OF IMPACTS TO EXISTING HABITATS IN THE PROJECT SITE				
HABITAT TYPE	EXISTING AREA (acres)	IMPACTED AREA (acres)		NO IMPACT
		Permanent	Temporary	
Terrestrial				
Coyote Brush Scrub	1.08	1.08	--	--
Non-Native Grassland	26.93	24.80	--	--2.13?
Serpentine Rock Outcrop	0.26	0.26	--	--
Ruderal/Disturbed	6.33	5.65	--	--0.68
Developed	4.69	1.81	--	--
Aquatic				
Seasonal Wetland	14.23	4.83	0.18	9.22
Drainage Ditch	0.45	0.24	0.20	0.01
Unvegetated Poned Depression	0.39	0.39	--	--
Industrial Settling Basin (aquatic)	0.17	0.17	--	--
TOTAL	54.53	39.23	0.38	9.23

The proposed project would permanently remove 39.23 acres of existing upland and aquatic habitat in the project site. These impacts are associated with the placement of permanent structures in the development footprint on the project site. A total of 0.38 acre of habitat in the project site will be temporarily impacted. These impacts are associated with site remediation activities along the north/south drainage ditch through the proposed open space area. Following remediation, these areas would be left to recover naturally. A portion of the north/south drainage in the open space area will be permanently impacted by the culvert replacement. New riprap bank protection will be placed at the culvert inlet on the project site. Following culvert replacement, the existing sheet pile barrier would be removed from the culvert, to connectivity with the tidally-influenced downstream portion of the channel. Natural habitat along the drainage ditch would be expected to improve as a result of the remediation activities and post project connectivity. The “no impact” areas are located within the proposed open space area and would not be affected by construction or site remediation activities.

Potential impacts to all existing habitat types in the off-site improvement areas are summarized in the following table (Table 6), and are depicted on Figure 9.

Table 6 SUMMARY OF IMPACTS TO EXISTING HABITATS IN THE OFF-SITE IMPROVEMENT AREAS			
JURISDICTIONAL AREAS	EXISTING AREA (acres)	IMPACTED AREA (acres)	
		Permanently	Temporary
Hickory Street ROW			
<i>Terrestrial</i>			
Non-Native Grassland	0.85	0.85	--
Ruderal/Disturbed	0.38	0.38	--
<i>Aquatic</i>			
Seasonal Wetland	0.40	0.40	--
Drainage Ditch	<0.01	<0.01	--
Total Hickory Street ROW	1.63	1.63	--
'A' Avenue			
<i>Terrestrial</i>			
Non-Native Grassland	0.56	0.56	--
<i>Aquatic</i>			
Seasonal Wetland	0.07	0.07	--
Total 'A' Avenue	0.63	0.63	--
Enterprise Drive ROW			
<i>Terrestrial</i>			
Non-Native Grassland	0.07	0.07	--
Ruderal/Disturbed	0.10	0.10	--
Developed	1.79	1.79	--
Total Enterprise Drive ROW	1.96	1.96	--
Culvert Replacement Site			
<i>Terrestrial</i>			
Non-Native Grassland	0.02	--	0.02
<i>Aquatic</i>			
Seasonal Wetland	<0.01	--	<0.01
Drainage Ditch	0.03	--	0.03
Total Culvert Replacement Site	0.05	--	0.05
TOTAL	4.27	4.22	0.05

¹ Includes the estimated acreage of the portion of the seasonal wetland within the Hickory Street ROW based on aerial photography and mapping contained in the jurisdictional delineation of the Torian Property prepared by Zentner and Zentner (Zentner and Zentner 2010), which was verified by the USACE in 2010 (File No. 2010-00230S).

The proposed project would permanently remove 4.22 acre of upland and aquatic habitats in the off-site improvement areas. These impacts would be the result of installing permanent infrastructure associated with the roadway improvements in 'A' Avenue, Hickory Street ROW, and Enterprise Drive ROW. Approximately 0.05 acre of upland and aquatic habitats in the culvert replacement site would be temporarily impacted as a result of replacing the existing pipe

culvert. These habitats would be temporarily disturbed during installation of the new box culvert but would be able to return to the previous habitat following construction. Permanent impacts to aquatic habitat in the culvert replacement site would be avoided because the replacement culvert would not extend any further than the existing culvert, and riprap protection would be placed on the bank where there is no wetland.

5.2.2 Sensitive Habitats or Special-Status Natural Communities

Sensitive habitats within the project area are limited to aquatic resources considered to be waters of the U.S. /State and/or subject to CDFW jurisdiction under Section 1600 *et seq.* of the Fish and Game Code. All aquatic habitats in the project area are considered to be potential waters of the U.S./State. These habitats are discussed in Section 5.2.2. No sensitive upland habitat identified as a special-status natural community is present within the project area.

Waters of the U.S./State

All of the aquatic habitats described in Section 4.4.2 are considered to be potential waters of the U.S. A total of 15.25 acres of wetlands and other waters were identified on the project site consisting of eight seasonal wetlands, two man-made drainage ditches, an unvegetated ponded depression, and industrial settling basins. All of the 15.25 acres of wetlands and other waters on the project site were identified as potential waters of the U.S. in the jurisdictional delineation prepared by HELIX (HELIX 2015a; Appendix B), which has been submitted to the USACE. The acreages of wetlands and other waters in the project site are preliminary and subject to change pending verification by the USACE. All potential waters of the U.S. on the project site are also considered to be potential waters of the State under jurisdiction of the State Water Resources Control Board. There are no potential waters of the State in addition to the potential waters of the U.S. on the project site. Refer to the delineation map in Appendix B for the locations of potential waters of the U.S. on the project site.

An estimated 0.40 acre of wetlands and other waters were mapped in the Hickory Street ROW comprised of two seasonal wetlands (referred to as Seasonal Wetlands A and B), and one constructed drainage ditch (referred to as Drainage Ditch A). Seasonal Wetland A and Drainage Ditch A were delineated by HELIX in October 2014 (HELIX 2015b; Appendix G) and that delineation will be submitted to the USACE for verification. Seasonal Wetland B falls within the off-site improvement area for the Torian property and was delineated in 2010 by Zentner and Zentner (Zentner and Zentner 2010) and verified by the USACE (File No. 2010-00230S). The acreage of the portion of Seasonal Wetland B within the Hickory Street ROW was estimated for the purposes of this report based on aerial photography and the delineation for the Torian property prepared by Zentner and Zentner (2010).

A total of 0.07 acre of wetlands (referred to as Seasonal Wetlands C and D) were mapped in Avenue "A." A portion of Seasonal Wetland C extends into the Hickory Street ROW; however, the majority of the feature is within Avenue "A," so the total acreage of that feature is presented under Avenue "A."

A total of 0.03 acre of wetlands and other waters were mapped in the culvert replacement site, comprised of one seasonal wetland (referred to as Seasonal Wetland E), and one constructed drainage ditch (referred to as Drainage Ditch B).

No potential waters of the U.S. occur in the Enterprise Drive ROW.

All of the 0.50 acre of wetlands and other waters in the off-site improvement areas are potential waters of the U.S., pending verification by the USACE. All potential waters of the U.S. in the off-site improvement areas are considered to be potential waters of the State. There are no potential waters of the State in addition to the potential waters of the U.S. in the off-site improvement areas.

Table 7 provides the acreages of potential waters of the U.S. in the project site and Table 8 provides the estimated acreages of potential waters of the U.S. in the off-site improvement areas. Figure 8 depicts the delineated waters of the U.S. in the project site and off-site improvement areas, including the estimated portion of Seasonal Wetland B. The waters of the U.S. are described in the following sections.

Table 7 SUMMARY OF WATERS OF THE U.S. IN THE GATEWAY STATION WEST PROJECT SITE	
JURISDICTIONAL AREAS	AREA (acres)
Unclassified	
Industrial Settling Basins (aquatic)	0.17
<i>Subtotal Unclassified</i>	<i>0.17</i>
Other Waters of the U.S.	
Drainage Ditch 1	0.37
Drainage Ditch 2	0.08
Unvegetated Poned Depression	0.39
<i>Subtotal Other Waters of the U.S.</i>	<i>0.84</i>
Wetlands	
Seasonal Wetland 1	0.41
Seasonal Wetland 2	1.09
Seasonal Wetland 3	0.38
Seasonal Wetland 4	0.93
Seasonal Wetland 5	0.38
Seasonal Wetland 6	0.27
Seasonal Wetland 7	10.76
Seasonal Wetland 8	0.01
<i>Subtotal Wetlands</i>	<i>14.23</i>
GRAND TOTAL	15.25

Table 8 SUMMARY OF WATERS OF THE U.S. IN THE OFF-SITE IMPROVEMENT AREAS	
JURISDICTIONAL AREAS	AREA (acres)
Hickory Street ROW	
Wetlands	
Seasonal Wetland A	0.15
Seasonal Wetland B	0.21 ¹
Seasonal Wetland C	0.04
<i>Subtotal</i>	<i>0.40</i>
Other Waters of the U.S.	
Drainage Ditch	<0.01
Total Hickory Street ROW	0.40
'A' Avenue	
Wetlands	
Seasonal Wetland C	0.04
Seasonal Wetland D	0.03
Total 'A' Avenue	0.07
Culvert Replacement Site	
Wetlands	
Seasonal Wetland E	<0.01
Other Waters of the U.S.	
Drainage Ditch B	0.03
Total Culvert Replacement Site	0.03
GRAND TOTAL	
0.50	

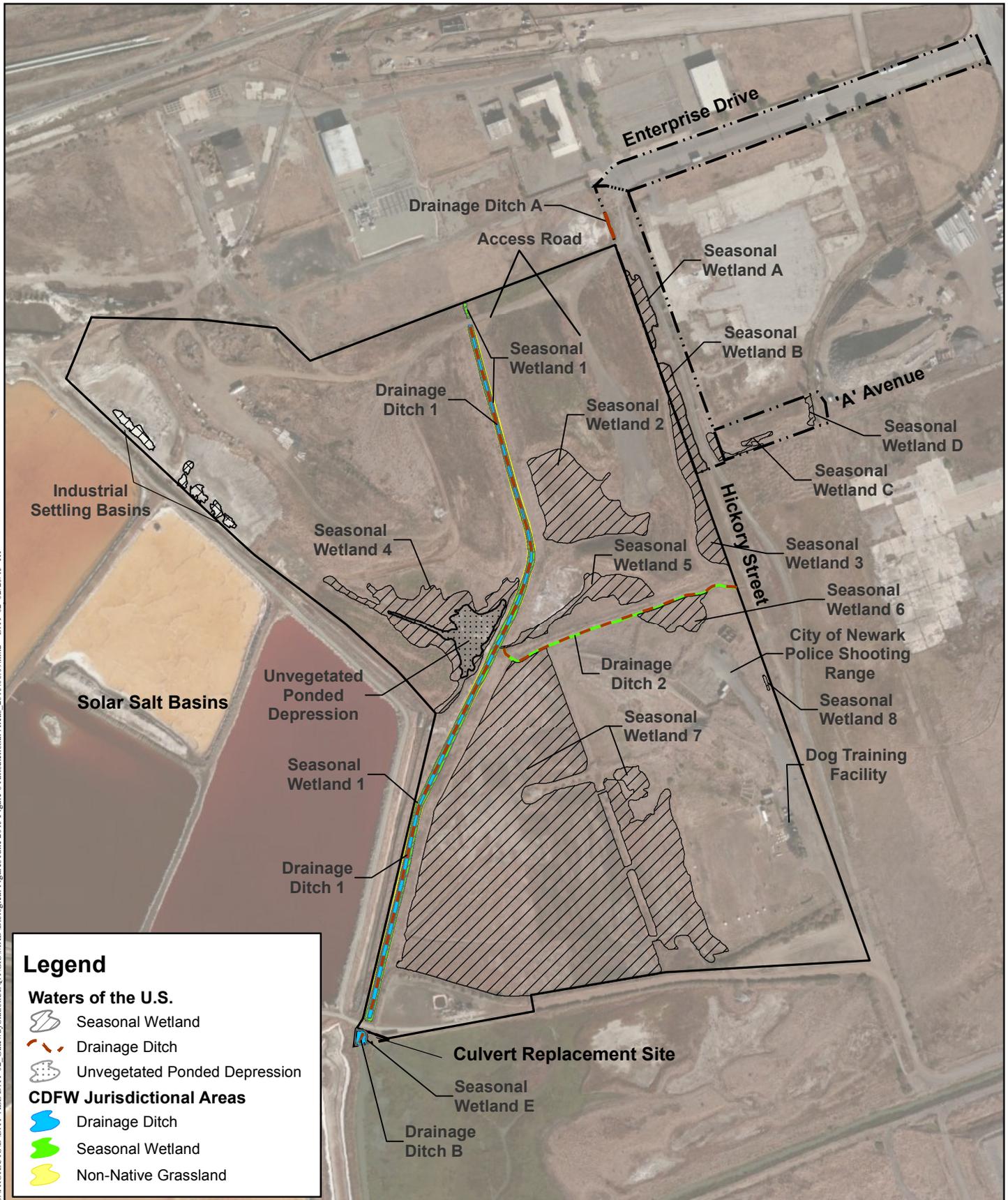
¹ Represents the estimated acreage of the portion of the seasonal wetland within the Hickory Street ROW based on aerial photography and mapping contained in the jurisdictional delineation of the Torian Property prepared by Zentner and Zentner (Zentner and Zentner 2010), which was verified by the USACE in 2010 (File No. 2010-00230S).

Impacts to Waters of the U.S./State

A total of 15.25 acres of wetlands and other waters of the U.S. were identified in the project site, and an additional 0.5 acre of wetlands and other waters of the U.S. were identified in the off-site improvement areas.

Impacts to aquatic resources on the project site would result from the placement of fill into the seasonal wetlands and other waters of the U.S./State within the project footprint to allow construction of the proposed development. A total of 0.20 acre of the north/south drainage (Drainage Ditch 1) and 0.18 acre of the adjacent seasonal wetland (Seasonal Wetland 1) will be temporarily impacted by soil remediation within the drainage ditch. The southernmost portion of Drainage Ditch 1 and Seasonal Wetland 1 will be permanently impacted by installation of the new box culvert to replace the existing culvert. The replacement box culvert will not extend further than the existing pipe culvert; however, new riprap bank protection will be placed at the culvert inlet which will result in permanent impacts. Less than 0.01 acre of Seasonal Wetland E

S:\PROJECTS\DAT-ALL\DAT-02_GatewayStation\CEQA\GIS\MXD\Biological\Figures June 2015\Figure 8 Jurisdictional Areas_2015.06.09.mxd DAT-02_02/20/15 -JH



Base Map: Esri (2014) Map Date:06-19-2015

Jurisdictional Areas

GATEWAY STATION WEST

and 0.03 acre of Drainage Ditch B will be temporarily impacted by replacement of the existing culvert. These waters would be disturbed during culvert replacement but would return to the previous habitat following construction. Permanent impacts to aquatic habitat in the culvert replacement site would be avoided because the replacement culvert would not extend any further than the existing culvert, and the riprap protection would be placed on the bank where there is no wetland.

The remaining seasonal wetlands within the project open space will be avoided during construction activities. As part of the proposed project, these seasonal wetlands will be preserved in perpetuity in the open space preserve. As a result of their proximity to proposed development, there is the potential for indirect impacts to these wetlands as a result of adjacent land uses. The open space area will be set aside in perpetuity and managed under a management plan that will include measures to manage litter accumulation, limit access and land uses, and monitor habitat quality. This would reduce the potential for degradation of the wetlands and drainage ditches from planned adjacent land uses. The project design includes directing treated stormwater runoff from the project site to the preserved wetlands and Drainage Ditch 1 via bioretention basins on the project site. Following project construction, the existing sheet pile barrier at the southern boundary of Drainage Ditch 1 would be removed, allowing connectivity with the tidally-influenced downstream portion of the channel. Natural habitat along the drainage ditch would be expected to improve as a result of the post-project connectivity. Figure 9 depicts impacts to biological habitats in the project area including upland habitats, waters of the U.S./State, and CDFW jurisdictional areas.

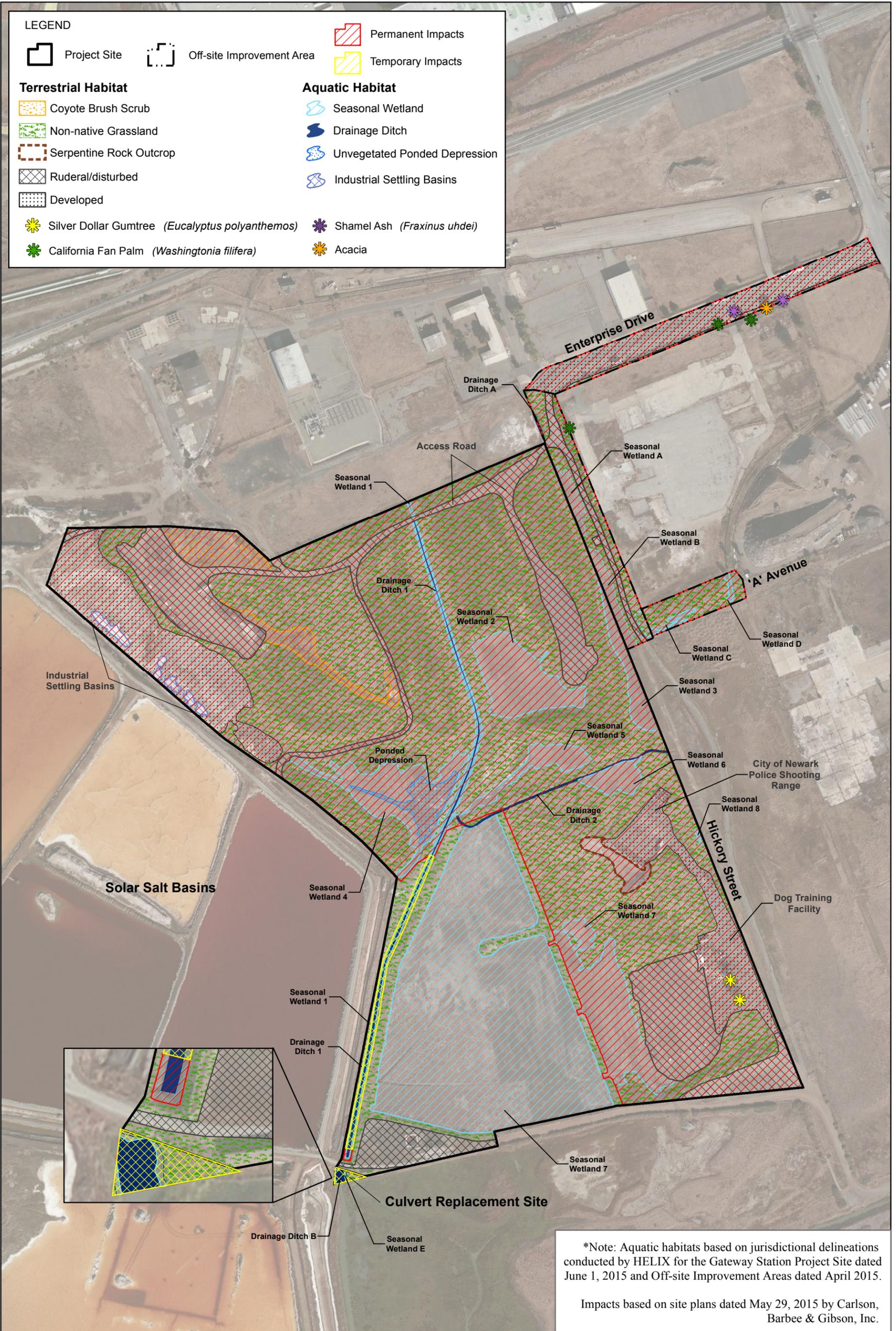
Table 9 is a summary of estimated impacts to waters of the U.S. that would occur on the Gateway Station West project site as a result of the proposed project. Table 10 is a summary of the estimated impacts to waters of the U.S. that would occur in the off-site improvement areas as a result of the proposed project.

**Table 9
SUMMARY OF IMPACTS TO WATERS OF THE U.S.
IN THE PROJECT SITE**

JURISDICTIONAL AREAS	EXISTING AREA (acres)	IMPACTED AREA (acres)		NO IMPACT
		Permanent	Temporary	
Unclassified				
Industrial Settling Basins (aquatic)	0.17	0.17	--	--
<i>Subtotal Unclassified</i>	<i>0.17</i>	<i>0.17</i>	<i>--</i>	<i>--</i>
Other Waters of the U.S.				
Drainage Ditch 1	0.37	0.17	0.20	--
Drainage Ditch 2	0.08	0.07	--	0.01
Unvegetated Poned Depression	0.39	0.39	--	--
<i>Subtotal Other Waters</i>	<i>0.84</i>	<i>0.63</i>	<i>0.20</i>	<i>0.01</i>
Wetlands				
Seasonal Wetland 1	0.41	0.23	0.18	--
Seasonal Wetland 2	1.09	1.09	--	--
Seasonal Wetland 3	0.38	0.38	--	--
Seasonal Wetland 4	0.93	0.93	--	--
Seasonal Wetland 5	0.38	0.38	--	--
Seasonal Wetland 6	0.27	0.27	--	--
Seasonal Wetland 7	10.76	1.54	--	9.22
Seasonal Wetland 8	0.01	0.01	--	--
<i>Subtotal Wetlands</i>	<i>14.23¹</i>	<i>4.83</i>	<i>0.18</i>	<i>9.22</i>
TOTAL*	15.25	5.63	0.38	9.23

Source: HELIX 2015c

¹Totals may not add due to rounding.



Aerial Source: ESRI

Impacts to Habitats and Jurisdictional Areas

GATEWAY STATION WEST

**Table 10
SUMMARY OF IMPACTS TO WATERS OF THE U.S.
IN THE OFF-SITE IMPROVEMENT AREAS**

JURISDICTIONAL AREAS	EXISTING AREA (acres)	IMPACTED AREA (acres)	
		Permanently	Temporary
Hickory Street ROW			
Wetlands			
Seasonal Wetland A	0.15	0.15	--
Seasonal Wetland B	0.21 ¹	0.21	--
Seasonal Wetland C	0.04	0.04	
<i>Subtotal</i>	<i>0.40</i>	<i>0.40</i>	<i>--</i>
Other Waters of the U.S.			
Drainage Ditch A	<0.01	<0.01	--
Total Hickory Street ROW	0.40	0.40	--
'A' Avenue			
Wetlands			
Seasonal Wetland C	0.04	0.04	--
Seasonal Wetland D	0.03	0.03	--
Total 'A' Avenue	0.07	0.07	--
Culvert Replacement Site			
Wetlands			
Seasonal Wetland E	<0.01	--	<0.01
Other Waters of the U.S.			
Drainage Ditch B	0.03	--	0.03
Total Culvert Replacement Site	0.03	--	0.03
TOTAL	0.50	0.47	0.03

¹ Represents the estimated acreage of the portion of the seasonal wetland within the Hickory Street ROW based on aerial photography and mapping contained in the jurisdictional delineation of the Torian Property prepared by Zentner and Zentner (Zentner and Zentner 2010), which was verified by the USACE in 2010 (File No. 2010-00230S).

Potential CDFW Jurisdiction

Section 1600 *et seq.* of the Fish and Game Code regulates activities affecting rivers, streams, and lakes where fish or wildlife resources may be adversely affected. Streambeds within CDFW jurisdiction are based on the definition of a stream as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life” (CCR Vol. 18 Title 14, Section 1.72).

The two man-made drainage ditches on the project site provide seasonal flows, and the drainage ditch in the culvert easement is a tidally influenced perennial waterway. These drainages are considered to be potentially regulated by the CDFW and the limits of potential CDFW jurisdiction associated with these drainages were defined by the top of bank. Refer to Figure 8 for the limits of the streambed (seasonal or perennial flows), together with their banks, in the project site. A total of 1.03 acres of habitat potentially regulated by CDFW occurs in the project site, and an additional 0.03 acre of habitat potentially regulated by CDFW occurs in the culvert

replacement site. These acreages are subject to change, and the actual limits of CDFW jurisdiction will be determined through subsequent coordination with CDFW.

Portions of the drainage ditches below the ordinary high water mark and the adjacent seasonal wetlands are also considered waters of the U.S./State, and are referred to as Drainage Ditches 1, 2, and B; and Seasonal Wetlands 1 and E on Figure 8). Areas of nonnative grassland along Drainage Ditch 1 are above the ordinary high water mark, but still within the bank of the ditch, and are also under CDFW jurisdiction. The northern extension of Drainage Ditch 1 and the entirety of Drainage Ditch 2 are mapped as seasonal wetland because they lack well-defined bed and bank, but are subject to periodic flow and they support hydrophytic plants such as Pacific swampfire, opposite leaf Russian thistle, and red saltwort as well as hydrophytic grasses. Table 11, *Habitats Potentially Regulated by CDFW*, provides the acreages of potential CDFW jurisdictional features in the project site and off-site improvement areas.

FEATURE		AREA¹ (acres)
Drainage Ditch 1	Drainage Ditch	0.37
	Seasonal wetland	0.41
	Ruderal	0.17
<i>Subtotal</i>		<i>0.95</i>
Drainage Ditch 2		0.08
<i>Total in project site</i>		<i>1.03</i>
Drainage Ditch B	Drainage Ditch	0.03
	Seasonal wetland	<0.01
<i>Total in Culvert Replacement Site</i>		<i>0.03</i>
TOTAL		1.06

¹Rounded to nearest one-hundredth of an acre.

Impacts to Potential CDFW Jurisdictional Areas

Permanent impacts to bed, banks, and channel of drainage ditches potentially regulated by CDFW would result from the placement of fill into certain drainages and associated seasonal wetlands to facilitate construction of the proposed project. Temporary impacts are associated with remediation activities along the segment of Drainage Ditch 1 through the open space area. Table 12, *Impacts to Habitats Potentially Regulated by CDFW*, is a summary of impacts to the habitats potentially regulated by CDFW under Section 1600 *et seq.* of the Fish and Game Code that would result from the proposed project. Impacts to such areas are depicted on Figure 9.

Table 12
IMPACTS TO HABITATS POTENTIALLY REGULATED BY CDFW

FEATURE		AREA ¹ (acres)	IMPACTED AREA (acres)		NO IMPACT (acres)
			Permanent	Temporary	
Drainage Ditch 1	Drainage ditch	0.37	0.15	0.22	--
	Seasonal wetland	0.41	0.19	0.22	--
	Ruderal	0.17	0.1	0.07	--
<i>Subtotal</i>		<i>0.95</i>	<i>0.44</i>	<i>0.51</i>	<i>--</i>
Drainage Ditch 2		0.08	0.06	--	0.02
Total in project site		1.03	0.50	0.51	0.02
Drainage Ditch B	Drainage ditch	0.03	--	0.03	--
	Seasonal wetland	<0.01	--	<0.01	--
Total in Culvert Replacement Site		0.03	--	0.03	--
TOTAL		1.06	0.50	0.54	0.02

Source: HELIX 2015c

¹ Rounded to nearest one-hundredth of an acre.

5.3 DISCUSSION OF SPECIAL-STATUS SPECIES

Three special-status animal species and six special-status plant species have the potential to occur in the project area or otherwise be impacted by development of the proposed project. These species are listed in Table 13, *Potentially Occurring Special-Status Species*, and discussed in detail in the following sections. Although salt marsh harvest mouse has no potential to occur in the project area, it is also discussed in this section because of the requirements of the Dumbarton TOD EIR MMRP.

Table 13
POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES

SCIENTIFIC NAME/ COMMON NAME	FEDERAL STATUS	STATE/CNPS STATUS	HABITAT NOTES
PLANTS			
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	None	None; 1B.2	The seasonal wetlands on the project site provide marginally suitable soil and hydrologic conditions for this species. No suitable habitat in the off-site improvement areas.
<i>Atriplex joaquiniana</i> San Joaquin sparscale	None	None; 1B.2	The non-native grassland and seasonal wetlands on the project site and off-site improvement areas provide marginally suitable soil and hydrologic conditions for this species.

**Table 13 (cont.)
POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES**

SCIENTIFIC NAME/ COMMON NAME	FEDERAL STATUS	STATE/CNPS STATUS	HABITAT NOTES
PLANTS (cont.)			
<i>Centromadia parryi</i> spp. <i>congdonii</i> Congdon's tarplant	None	None; 1B.1	Some marginal habitat for this species occurs within the non-native grassland and ruderal/disturbed habitats on the project site and off-site improvement areas.
<i>Eryngium aristulatum</i> var. <i>hooveri</i> Hoover's button-celery	None	None; 1B.1	The seasonal wetlands on the project site and off-site improvement areas provide marginally suitable soil and hydrologic conditions for this species.
<i>Lasthenia conjugens</i> Contra Costa goldfields	Endangered	None; 1B.1	The non-native grassland and seasonal wetlands on the project site and off-site improvement areas provide marginally suitable soil and hydrologic conditions for this species.
<i>Trifolium hydrophilum</i> saline clover	None	None; 1B.2	The non-native grassland and seasonal wetlands on the project site and off-site improvement areas provide marginally suitable soil and hydrologic conditions for this species.
BIRDS			
<i>Athene cunicularia</i> burrowing owl	None	Species of special concern	Potential habitat occurs in the non-native grassland, ruderal/disturbed areas, and seasonal wetland habitats in the project site and off-site improvement areas.
<i>Circus cyaneus</i> northern harrier	None	Species of special concern	The project site and off-site improvement areas do not provide suitable nesting habitat for this species, however, foraging habitat is present in the project site and off-site improvement areas.
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	None	Species of special concern	Marginal nesting and foraging habitat for this species occurs in the project site along Drainage Ditch 1.
MAMMALS			
<i>Reithrodontomys raviventris</i> salt marsh harvest mouse	Endangered	Endangered	There is no suitable habitat for this species in the project site. See text for further discussion.

Source: California Rare Plant Rank (accessible online at <<http://cnps.org/cnps/rareplants/ranking.php>>)

Notes: 1B = Plants Rare, Threatened, or Endangered in California and Elsewhere

0.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2 Moderately threatened in California (20-80 percent occurrences threatened / moderate degree and immediacy of threat)

5.3.1 Discussion of Special-Status Plant Species

The lists of regionally-occurring special-status species obtained from USFWS, CNDDDB, and CNPS identified nine special-status plant species with the potential to occur in the “Newark, California” 7.5 minute USGS quadrangle (Appendix I). Low to moderate quality habitat is present for six of the special-status plant species in the non-native grassland, brackish wetlands, and/or ruderal/disturbed habitats in the project area. Contra Costa goldfields is federally listed as endangered; none of the remaining five special-status plant species has any federal or state listing status. All six plant species are listed by the CNPS as rare and meet the criteria for evaluation under CEQA as explained in Section 2.2.3. Because the CNDDDB contains reported occurrences of these six species in close proximity to the project area and low to moderate quality habitat is present in the project area, these species are discussed below.

Alkali milk-vetch (*Astragalus tener* var. *tener*)

Federal Status – None

State Status – None

Other – CNPS List 1B.2

Alkali milk-vetch is an annual herb that occurs in alkaline habitats of playas, valley and foothill grasslands (adobe clay soils), and vernal pools at elevations that range from 3 to 197 feet amsl. Specifically, this species occurs within low ground, alkali flats, and flooded land in annual grassland or in playas or vernal pools. The known range of this species includes Alameda, Contra Costa, Merced, Monterey, Napa, San Benito, Santa Clara, San Francisco, San Joaquin, Solano, Sonoma, Stanislaus, and Yolo Counties. This species blooms from March through June (CNPS 2014).

Survey History

Focused botanical surveys were conducted in the project site in April 2014 during the blooming season for this species (March to June) and it was not observed. This species was also not observed during focused botanical surveys of ‘A’ Avenue, Hickory Street ROW, and the culvert replacement site in March, April, May and June 2015, and of the Enterprise Drive ROW in June 2015.

Habitat Suitability/Potential to Occur in the Project Site

Deeper portions of the seasonal wetlands on the project site and off-site improvement areas, where the vegetation is sparse or bare, provide marginally suitable soil and hydrologic conditions for this species. There is no reported occurrence of this species in the CNDDDB in or adjacent to the project site. The CNDDDB contains only one reported occurrence of this species on the Newark quad from an 1895 collection, which described it as “possibly extirpated.” The reported location is a non-specific polygon described as “Newark.” There is no other reported occurrence of this species on the Newark quad, and the project site and surrounding areas have been previously developed and disturbed. As a result of the existing level of disturbance and lack of

suitable natural habitat such as playas and vernal pools, the project area provides only marginally suitable habitat for this species.

Because the project site and off-site improvement areas only provides marginally suitable habitat for this species, suitable habitat is not present in the off-site improvement areas, and it was not observed during focused botanical surveys during the blooming season, it is presumed absent from the project site and off-site improvement areas.

Potential Project Impacts

No impact to alkali milk-vetch is anticipated to occur as a result of the proposed project.

San Joaquin Spearscale (*Atriplex joaquiniana*)

Federal Status – None

State Status – None

Other – CNPS List 1B.2

San Joaquin spearscale is an annual herb that occurs on alkaline soils within chenopod scrub, meadows and seeps, playas, and valley and foothill grassland at elevations from 3 to 2,740 feet amsl. The known range of this species includes Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Santa Clara, and San Joaquin counties. This species blooms from April through October (CNPS 2014).

Survey History

Focused botanical surveys were conducted on the project site on April 30, July 18, August 8, and September 11, 2014 during the blooming season for this species (April to October) and this species was not observed. This species was also not observed during focused botanical surveys of 'A' Avenue, Hickory Street ROW, and the culvert replacement site in April, May, and June 2015, and of the Enterprise Drive ROW in June 2015.

Habitat Suitability/Potential to Occur in the Project Site

The non-native grassland and seasonal wetlands in the project site and off-site improvement areas provide marginally suitable soil and hydrologic conditions for this species. The potentially suitable habitats in the project site and off-site improvement areas exhibit a high level of disturbance with modified soils. There is no reported occurrence of this species in the CNDDDB in or adjacent to the project area. The CNDDDB contains only one reported occurrence on the Newark quad from a 1927 collection, and is described as “presumed extant.” The location of the reported occurrence is described in the CNDDDB as “unknown and mapped as a best guess in the vicinity of Newark.” There is no other known occurrence of this species on the Newark quad, and the project area and surrounding areas have been previously developed and disturbed. As a result of the existing level of disturbance and lack of suitable natural habitat such as chenopod scrub, meadows and seeps, playas, and grasslands, the project area provides only marginally suitable habitat for this species.

Since the species has not been observed in the project site and off-site improvement areas during focused botanical surveys during the blooming season, and has not been observed on adjacent properties it is presumed absent from the project site and off-site improvement areas.

Potential Project Impacts

No impact to San Joaquin spearscale is anticipated to occur as a result of the proposed project.

Congdon's Tarplant (*Centromadia parryi* spp. *congdonii*)

Federal Status – None

State Status – None

Other – CNPS List 1B.1

Congdon's tarplant is an annual herb that occurs in alkaline soils of valley and foothill grassland at elevations that range from 0 to 755 feet amsl. The known range of this species includes Alameda, Contra Costa, Monterey, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, and Solano Counties. This species blooms from May through November (CNPS 2014).

Survey History

Focused botanical surveys were conducted in the project site on April 30, July 18, August 8, and September 11, 2014 during the blooming season for this species (May to November) and this species was not observed. This species was also not observed during focused botanical surveys of 'A' Avenue, Hickory Street ROW, and the culvert replacement site in May and June 2015, and of the Enterprise Drive ROW in June 2015.

Habitat Suitability/Potential to Occur in the Project Site

Some marginal habitat for this species occurs within the non-native grassland and ruderal/disturbed habitats in the project site and off-site improvement areas. A population of this species was documented in 2003 at a site located approximately 0.2 mile northeast of the project area (CDFW 2014a). The associated habitat was ruderal/grassland featuring prickly ox tongue, wild oats, Italian rye grass, and Bermuda grass. Due to the existing level of disturbance and lack of suitable natural habitat such as valley and foothill grasslands, the project area and off-site improvement areas provide only marginally suitable habitat for this species.

Because the project site and off-site improvement areas only provides marginally suitable habitat for this species, and it was not observed during focused botanical surveys during the blooming season, it is presumed absent from the project site and off-site improvement areas.

Potential Project Impacts

No impact to Congdon's tarplant is anticipated to occur as a result of the proposed project.

Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*)

Federal Status – None

State Status – None

Other – CNPS List 1B.1

Hoover's button-celery is an annual or perennial herb that occurs in vernal pools ranging from 9 to 148 feet amsl. The known range of this species includes Alameda, San Benito, Santa Clara, San Diego and San Luis Obispo. This species blooms from July to August (CNPS 2014).

Survey History

Focused botanical surveys were conducted in the project site on July 18 and August 8, 2014 during the blooming season for this species (July to August) and this species was not observed. No focused botanical surveys have been conducted in the off-site improvement areas during the bloom period for this species; however, this species would have been identifiable to genus during the June species, if present. This species has not been observed during surveys of potentially suitable habitats on the adjacent Torian and SHH/FMC project sites.

Habitat Suitability/Potential to Occur in the Project Site

Portions of the seasonal wetlands in the project site where the vegetation is sparse or bare provide marginally suitable soil and hydrologic conditions for this species. The seasonal wetlands on the Hickory Street ROW, 'A' Avenue, and culvert replacement site do not provide suitable habitat for this species; therefore, this species is not expected to occur in the seasonal wetlands in the off-site improvement areas. The CNDDDB contains one reported occurrence of this species on the Newark quad from 2011 and 2013 observances approximately 0.25 mile northeast of the project site where this species was documented by Mr. Stringer in shallow seasonal wetlands. Due to the existing level of disturbance and lack of suitable natural habitat such as vernal pools, the project area provides only marginally suitable habitat for this species.

Because the project site only provides marginally suitable habitat for this species and it was not observed during focused botanical surveys during the blooming season it is presumed absent from the project site. Seasonal wetlands on the off-site improvement areas do not provide suitable habitat for this species. Further, although botanical surveys of the seasonal wetlands on the off-site improvement areas were not conducted during the blooming season for this species, it would have been visible in its vegetative state during the surveys. Because this species was not observed in the off-site improvement areas during botanical surveys and it has not been found in suitable habitats on the adjacent project site, SHH/FMC, or Torian properties, it is presumed absent from the seasonal wetlands on the off-site improvement areas.

Potential Project Impacts

No impact to Hoover's button-celery would result from the proposed project.

Contra Costa goldfields (*Lasthenia conjugens*)

Federal Status – Endangered

State Status – None

Other – CNPS List 1B.1

Contra Costa goldfields was federally listed as endangered on June 18, 1997 (62 FR 33029 33038), with critical habitat established in 2003 (71 FR 7118 7316; 70 FR 46924 46999; 68 FR 46684 46732). This species is an annual herb that occurs in vernal pools, swales, moist flats, and depressions within a grassland matrix, although this species is also known from the saline-alkaline transition zone between vernal pools and tidal marshes on the eastern margin of the San Francisco Bay and evaporating ponds used to concentrate salt (USFWS 2006). Suitable habitats range from 0 to 1,542 feet amsl. The known range of this species includes Alameda, Contra Costa, Mendocino, Monterey, Marin, Napa, Santa Barbara, Santa Clara, Solano, and Sonoma Counties. This species blooms from March through June (CNPS 2014).

Survey History

Focused botanical surveys were conducted in the project site on April 30, 2014 during the blooming season for this species (March to June) and this species was not observed. This species was also not observed during focused botanical surveys of ‘A’ Avenue, Hickory Street ROW, and the culvert replacement site in March, April, May, and June 2015, and of the Enterprise Drive ROW in June 2015.

Habitat Suitability/Potential to Occur in the Project Site

The seasonal wetlands in the project area provide potentially suitable soil and hydrologic conditions for this species. However, the CNDDDB contains only one reported occurrence of this species on the Newark quad from an 1895 collection, and is described as “extirpated.” The reported occurrence is a non-specific polygon that overlaps the project site with the location of the reported occurrence listed as “Newark.” The exact location where this plant was identified is unknown. No additional known record of this species occurs on the Newark quad, and the project area and surrounding areas have been previously developed and disturbed. As a result of its disturbed condition and the absence of suitable natural habitat such as playas, native grasslands, and vernal pools, the project area provides only marginally suitable habitat for this species.

Because the project site and off-site improvement areas only provides marginally suitable habitat for this species, and it was not observed during focused botanical surveys during the blooming season, it is presumed absent from the project site and off-site improvement areas.

Potential Project Impacts

No impact to Contra Costa goldfields would result from the proposed project. The seasonal wetlands in the project area are disturbed, and are not likely to support this species; therefore, no impacts to suitable habitat will occur.

Saline Clover (*Trifolium hydrophilum*)

Federal Status – None

State Status – None

Other – CNPS List 1B.2

Saline clover is an annual herb that occurs in salt marshes, marshes and swamps, open areas in alkaline soils, and alkaline grasslands at an elevation of 0 to 985 feet amsl. The known range of this species includes Alameda, Contra Costa, Mendocino, Monterey, Marin, Napa, Santa Barbara, Santa Clara, Solano, and Sonoma Counties. This species blooms from April through June (CNPS 2014).

Survey History

Focused botanical surveys were conducted in the project site on April 30, 2014 during the blooming season for this species (April to June) and this species was not observed. This species was also not observed during focused botanical surveys of 'A' Avenue, Hickory Street ROW, and the culvert replacement site in April, May, and June 2015, and of the Enterprise Drive ROW in June 2015.

Habitat Suitability/Potential to Occur in the Project Site

The non-native grassland and seasonal wetlands on the project site and off-site improvement areas provide marginally suitable soil and hydrologic conditions for this species. There is no reported occurrence in the CNDDDB of this species in the project area; but, the CNDDDB contains a reported occurrence of this species approximately 0.2 mile northeast of the site from a 2004 collection, which is described as “presumed extant.” However, the CNDDDB indicates that the exact location where this plant was observed is unknown and the mapping is approximate. No additional known record of this species occurs on the Newark quad, and the project area and surrounding areas have been previously developed and disturbed. Because of the existing level of disturbance and lack of suitable natural habitat such as marshes and swamps, grasslands, and vernal pools, the project area provides only marginally suitable habitat for this species.

Because the project site and off-site improvement areas only provides marginally suitable habitat for this species and it was not observed during focused botanical surveys during the blooming season it is presumed absent from the project area.

Potential Project Impacts

No impact to saline clover is anticipated to occur as a result of the proposed project.

5.3.2 Discussion of Special-Status Wildlife

The lists from USFWS and CNDDDB identified two invertebrate species, eight fish species, two amphibian species, one reptile species, 12 bird species, and three mammal species meeting the criteria of special-status species with the potential to occur in the Newark USGS quadrangle.

The lists of regionally occurring special-status species obtained from USFWS, CDFW, and CNPS are included as Appendix I for reference. Three of the special-status animal species have the potential to occur in the project area and are discussed below. Although it has been determined to have no potential to occur in the project area or be impacted by the proposed project, salt marsh harvest mouse is also discussed as required by the Dumbarton TOD Specific Plan EIR.

Burrowing Owl (*Athene cunicularia*)

Federal Status – None

State Status – SSC

Other – None

Burrowing owls are often found in open, dry grasslands, agricultural and range lands, and desert habitats. They can also inhabit grass, forb, and shrub stages of pinyon and ponderosa pine habitats. Burrowing owls occur at elevations ranging from 200 feet below mean sea level to over 9,000 feet amsl. In California, the highest elevation where burrowing owls are known to occur is 5,300 feet amsl in Lassen County. In addition to natural habitats, burrowing owls can be found in urban habitats such as at the margins of airports and golf courses and in vacant urban lots. Burrowing owls nest in underground burrows and commonly perch on nearby fence posts or mounds. The owls also use ground squirrel burrows, badger dens or artificial burrows such as abandoned pipes or culverts. Breeding pairs have been consistently documented using agricultural canal berms in rice growing areas (ICF International [ICF], 2012).

Although the more northern burrowing owl populations migrate seasonally, burrowing owls are year-round residents in much of California. The owls often form loose colonies, with nest burrows 46 to 2,952 feet apart (ICF 2012). The nesting season for burrowing owl can begin as early as February 1 and continues through August 31. Burrowing owls forage in adjacent grasslands and other suitable habitats primarily for insects and small mammals, and less often for reptiles, amphibians, and other small birds.

Survey History

Protocol presence/absence surveys for burrowing owl were conducted at the project site during the burrowing owl breeding season in 2014; four surveys were conducted between March and June. No burrowing owl or active burrow was observed on the project site during any of the survey events. However, some evidence of past burrowing owl use was observed in a mammal burrow in the southern portion of the project site as explained below under *Habitat Suitability*. Protocol burrowing owl surveys are currently underway in the ‘A’ Avenue, Hickory Street ROW, and the culvert replacement site and no burrowing owl has been identified to date in the off-site improvement areas. No protocol surveys for burrowing owl have been conducted in the Enterprise Drive ROW.

There are several reported occurrences in CNDDDB of burrowing owl on the Newark quad and within 5 miles of the project area. Two of the occurrences overlap or are within 1 mile of the project site, but are from 1950 and 1983. Both occurrences are presumed extirpated. The

nearest presumed extant occurrences are one occurrence 1.9 mile east of the project site where pairs and juveniles were observed on a property east of Mowry Avenue in 2005, and 1.9 mile north of the project site where two adults and five juveniles were observed in a pasture in 1993. Seven additional reported occurrences are within five miles of the project site.

Habitat Suitability/Potential to Occur in the Project Site

The non-native grassland, ruderal/disturbed, and seasonal wetlands on the project site and off-site improvement areas provide suitable nesting and foraging habitat for this species. The project site and off-site improvement areas contain numerous ground squirrel (*Otospermophilus beecheyi*) burrows that could potentially be used by burrowing owl for nesting or stopover during winter migration.

During the burrowing owl survey on March 27, 2014, a mammal burrow was observed in the southern portion of the project site (see Figure 2 in Appendix D) with some excrement and pellets that is evidence of past use by burrowing owl. Based on the quantity of burrowing owl pellets and excrement it appeared to have been used by a solitary burrowing owl for a relatively short period of time. The presence of spider webs across the entrance to the burrow and lack of recent signs of occupation indicated that the burrow was unoccupied at the time of the survey. During each consecutive burrowing owl survey, as well as numerous site visits conducted later in the year, Mr. Stringer visited the burrow and there was no sign of further use by burrowing owl (fresh excrement, feathers or pellets). The fact that no burrowing owl or sign of further use were observed at the burrow or elsewhere on the project site during any subsequent surveys indicates that the burrow was likely briefly used by a solitary winter migrant.

Barn owls and red-tailed hawks have been observed foraging over the project site. These raptors are natural predators of burrowing owls. Barn owl boxes are present throughout the area that is proposed for open space and will remain in place following project construction. As a result, suitable opportunities for barn owls will remain on the project site during and following construction. The presence of these species would be expected to preclude burrowing owl from using the area, for nesting in particular. .

Potential Project Impacts

No burrowing owl or active burrow was observed on the project site or off-site improvement areas, although one mammal burrow on the project site exhibited signs of past use by burrowing owl. As a result, construction of the proposed project would result in permanent removal of suitable habitat for the burrowing owl, including potential foraging habitat. However, the Specific Plan MMRP prescribes compensatory mitigation only if a pair(s) of burrowing or unpaired resident burrowing owl is identified. Because the only evidence of burrowing owl use on the project site and off-site improvement lands was signs of potential past use by a solitary winter migrant, the MMRP requirement for compensatory mitigation would not be triggered by the proposed project. However, because of this sign of past use, and due to the presence of suitable burrows, additional pre-construction surveys are warranted. If burrowing owl pair(s) or resident burrowing owl is observed during the pre-construction surveys, mitigation would be

required as stated in the MMRP, consisting of avoidance of burrows during the nesting season and compensatory mitigation for loss of habitat.

As previously mentioned, due to the presence of other raptors that are natural predators of burrowing owl, it is not likely that burrowing owls would use the project area for forage or nesting during and following construction. However, if burrowing owl were to occupy the project area prior to construction, potential impacts to burrowing owls could include nest disturbance resulting in forced fledging or abandonment of young and loss of foraging habitat. If burrowing owls occupy suitable habitat in the open space area following construction, they may be affected by the nearby development. Construction of the proposed project would increase the number of people in close vicinity to potentially suitable habitat, and associated potential impacts would include harassment from increased noise and activity in the vicinity of potentially suitable habitat, degradation of habitat from litter and light spillover from the nearby development, and the potential for increased predation as a result of increased domestic and feral cats and dogs associated with development.

The open space area will be set aside in perpetuity and managed under a management plan which will include elements to manage litter accumulation, limit access and land uses, and monitor habitat quality. This would reduce the potential for habitat degradation from planned adjacent land uses. Access to the open space area from the development would be restricted by the installation of construction of an eight-foot high wall along the western development boundary, a 4-foot high concrete split rail fence which will create a barrier between the development and the open space area, and will reduce opportunities for people and their controlled pets from entering the open space area. A split rail fence would not act as a physical barrier for cats; therefore, to minimize opportunities for cats associated with the development to enter the open space area, the keeping of outside feline pets or feral cat stations will be prohibited. Project lighting will be designed consistent with Policy LU-6.6 of the City General Plan Land Use Element, and the Site and Architecture Design Guidelines contained in the Specific Plan which require that the lighting be designed to reduce glare and over-lighting impacts. As a result, potential indirect impacts to burrowing owl associated with light and glare would be reduced.

Northern Harrier (*Circus cyaneus*)

Federal Status – None

State Status – SSC

Other – None

Northern harriers breed and forage in a variety of treeless habitats including freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and nonnative grasslands, weed fields, croplands pastures, sagebrush flats, and desert sinks. The bird nests on the ground, often in patches of dense, tall, vegetation in undisturbed areas along a marsh edge. Plant species composition varies by site, but the nest is built on a large mound of sticks. The breeding season for northern harrier is from March to August (Shuford, et. al. 2008).

Survey History

Northern harriers have been observed foraging over the project site and off-site improvement areas on several occasions during the numerous biological surveys that have been conducted at the project site. Northern harrier nesting has not been observed in the project site or off-site improvement areas.

There are three reported occurrences in CNDDDB of northern harrier on the Newark quad but only one reported occurrence within five miles of the project area. This reported occurrence is along the margin of the San Francisco Bay, approximately 1 mile southwest of the project site, where this species was observed nesting in a salt marsh.

Habitat Suitability/Potential to Occur in the Project Site

The project site and off-site improvement areas provide foraging habitat for northern harrier; however, suitable nesting habitat is not present. The Plummer Creek Wetland Mitigation Bank south of the project site appears to provide suitable nesting habitat for northern harrier.

Potential Project Impacts

Construction of the proposed project will result in the permanent removal of potential foraging habitat for northern harrier in the project footprint. If construction of the proposed project commences during the nesting period for northern harrier, construction activities and construction-related disturbance (noise, vibration, increased human activity) could adversely affect this species if it were to nest in the project area or in suitable habitat in close proximity to the project area (e.g., the Plummer Creek Wetland Mitigation Bank south of the project site).

Similar to the impacts described for burrowing owl, construction of the proposed project would increase the number of people in close vicinity to potentially suitable nesting and foraging habitat for northern harrier. Associated potential impacts would include harassment from increased noise and activity in the vicinity of potentially suitable habitat, degradation of habitat from litter and light spillover from the nearby development, and the potential for increased predation as a result of increased domestic and feral cats, dogs, and other predatory pets associated with development.

The open space area will be set aside in perpetuity and managed under a management plan that will include elements to manage litter accumulation, limit access and land uses, and monitor habitat quality. This would reduce the potential for habitat degradation from planned adjacent land uses. As previously mentioned, installation of the concrete split rail fence between the development and the open space area will limit access to the open space area, thereby reducing the potential for habitat degradation associated with human access. The proposed 8-foot-high masonry and mesh wire fence along the southern boundary of the development area would also limit direct access to off-site areas from the development – specifically, the Plummer Creek Wetland Mitigation Bank south of the project site. The proposed fencing between the development and these areas of potential northern harrier habitat would reduce the potential for habitat degradation from planned adjacent land uses. The keeping of outside feline pets or feral

cat stations will be prohibited, thereby reducing the potential for cats to prey on or harass northern harrier nests in suitable habitat near the project site. Lighting will be designed consistent with Policy LU-6.6 of the City General Plan Land Use Element, and the Site and Architecture Design Guidelines contained in the Specific Plan which require that the lighting be designed to reduce glare and over-lighting impacts. As a result, potential indirect impacts to northern harrier associated with light and glare would be reduced.

Saltmarsh Common Yellowthroat (*Geothlypis trichas sinuosa*) and Other Nesting Passerines

Federal Status – None

State Status – SSC

Other – None

The saltmarsh common yellowthroat breeds in brackish marsh, freshwater marsh, and woody swamps. This species may occur in relatively isolated patches of habitat, including swales and seeps where groundwater is close to the surface. Nests of this species are constructed near the ground in grasses, herbaceous vegetation, cattails (*Typha* spp.), tules (*Schoenoplectus* spp.), and shrubs (e.g., *Baccharis pilularis*) (Shuford, et. al. 2008). This species occupies its breeding range year round. The breeding season is mid-March to late July.

Survey History

Saltmarsh common yellowthroat has not been observed during the numerous biological surveys that have been conducted at the project area. However, as previously stated, other passerines such as rufous-crowned sparrow, white-crowned sparrow, black phoebe, and yellow-rumped warbler have been observed foraging and perching in a variety of habitats in the project site and various passerine nests have been observed in the project site in the coyote brush scrub and in the salt bush along the southern boundary of the site.

There are several reported occurrences in CNDDDB of saltmarsh common yellowthroat on the Newark quad and within 5 miles of the project area. The nearest reported occurrence in CNDDDB of saltmarsh common yellowthroat is along Newark Slough, approximately 0.75 mile northwest of the project area, where this species was observed nesting in a marsh.

Habitat Suitability/Potential to Occur in the Project Site

An approximately 40-foot-wide strip of relatively dense herbaceous vegetation occurs along the east bank of the north/south drainage ditch near the southern boundary of the project site. This segment of the ditch contains relatively permanent water with adjacent vegetation which provides marginal habitat for this species. The Plummer Creek Wetland Mitigation Bank south of the project site appears to provide potential suitable nesting habitat for saltmarsh common yellowthroat. Other passerines have the potential to nest in a variety of habitats in the project area. Trees and large shrubs in and immediately adjacent to the Enterprise Drive ROW provide potential nesting opportunities for passerines. Refer to Section 5.3.4 for a discussion of migratory passerines in the project area.

Potential Project Impacts

Although potential nesting habitat is limited on the project site and off-site improvement lands, the proposed project includes removal of vegetation that provides potential nesting habitat for nesting birds protected by Fish and Game Code. Project construction activities would potentially result in significant adverse impacts to nesting birds if construction of the proposed project commences during the typical nesting period for passerines and other migratory birds. Construction activities and construction-related disturbance (noise, vibration and increased human activity) could adversely affect these species if they were to nest in or adjacent to the project area. Potential effects include nest abandonment and/or individuals being forced to seek out nesting opportunities elsewhere, resulting in the potential for increased competition for nest sites.

As described above, potentially suitable nesting habitat for saltmarsh common yellowthroat is located along the southernmost portion of the north/south drainage ditch, which falls within the open space area. The only project-related activities that would occur in the open space area are associated with site remediation activities in which the bottom of the ditch will be excavated along its entire length prior to construction. No adjacent vegetation will be removed for this activity; so there would be no loss of potential nesting habitat along the banks of the ditch; however, remediation activities could adversely affect saltmarsh common yellowthroat and other species nesting in the area. Once the area is remediated, the culvert in the culvert replacement site would be installed and the existing barrier that prevents flows from leaving the project site would be removed, allowing connectivity with the tidally-influenced downstream portion of the channel. Natural habitat along the drainage ditch would be expected to improve as a result of the post-project connectivity.

Construction of the proposed project would increase the number of people in close vicinity to potentially suitable nesting and foraging habitat for saltmarsh common yellowthroat and other nesting passerines. Similar to those identified for burrowing owl, associated potential impacts would include harassment from increased noise and activity in the vicinity of potentially suitable habitat, degradation of habitat from litter and light spillover from the nearby development, and the potential for increased predation as a result of increased domestic and feral cats, dogs, and other predatory pets associated with development.

The open space area will be set aside in perpetuity and managed under a management plan which will include elements to manage litter accumulation, limit access and land uses, and monitor habitat quality. The proposed fencing around the southern and western boundaries of the development footprint will limit access to the open space area and the Plummer Creek Wetland Mitigation Bank south of the project site, which would reduce the potential for harassment or habitat degradation from planned adjacent land uses. The keeping of outside feline pets or feral cat stations will be prohibited, thereby reducing the potential for cats to prey on or harass saltmarsh common yellowthroat or other nesting passerines in suitable habitat near the project site. Lighting will be designed consistent with Policy LU-6.6 of the City General Plan Land Use Element, and the Site and Architecture Design Guidelines contained in the Specific Plan which require that the lighting be designed to reduce glare and over-lighting impacts. As a result, potential indirect impacts to saltmarsh common yellowthroat and other nesting passerines associated with light and glare would be reduced.

Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*)

Federal Status – Endangered

State Status – Endangered

Other – None

The salt marsh harvest mouse (SMHM) was federally listed as endangered in its entire range on October 13, 1970 (Federal Register 35: 16047). Critical habitat has not been designated for this species. This mouse is also state listed as endangered. A recovery plan for the salt marsh harvest mouse was prepared in 1984 and is currently under revision.

The federal and state listed salt marsh harvest mouse is endemic to tidal and brackish marsh habitats of the San Francisco Bay region. Salt marsh harvest mice are primarily found in the salt marshes along the northern San Pablo Bay, surrounding the Suisun Bay, and along the southern San Francisco Bay (USFWS 1984). The acreage believed to be necessary to sustain a healthy salt marsh harvest mouse population is 150 acres or more (USFWS 2010). The salt marsh harvest mouse is critically dependent on dense cover and its preferred habitat is pickleweed. In marshes with an upper zone of halophytes, it uses this vegetation to escape high tides, and may also move into adjoining grasslands during the highest winter tides. The best type of pickleweed association for the species has: 100 percent vegetative cover with a cover depth of 30 to 50 centimeters at summer maximum, at least 60 percent cover of pickleweed, and additional halophytes such as fat hen (*Atriplex patula*) and alkali heath (*Frankenia salina*). The amount of salt grass, brass buttons (*Cotula coronopifolia*), alkali bulrush (*Bolboschoenus maritimus*), or other species (e.g., *Scirpus* sp. or *Typha* sp.) should be low (USFWS 1984).

The *Salt Marsh Harvest Mouse and California Clapper Rail Recovery Plan* (USFWS 1984) lists five principal reasons for the decline of the salt marsh harvest mouse: habitat loss, fragmentation of the remaining marshes, widespread loss of the high marsh zone as a result of backfilling, land subsidence, and vegetational change. It furthermore points out that small marshes, separated by open land or dikes, have very low immigration, and that very few areas are likely to be recolonized.

Survey History

Dr. Padgett-Flohr, a 10(a)(1)(A) salt marsh harvest mouse-permitted mammologist (Permit No. TE006112-6) conducted a habitat assessment for salt marsh harvest mouse at the Gateway Station West project site (previously known as Parcel 1 of Parcel Map 9837) per the requirements of the Dumbarton TOD EIR MMRP. Dr. Padgett-Flohr conducted a site visit and habitat assessment on March 17, 2014, and an additional site visit was conducted on July 10, 2014. The entire project site was surveyed on foot and assessed for potential suitability for salt marsh harvest mouse. In addition, Dr. Padgett-Flohr conducted live trapping for small mammals at the project site as part of a research project investigating the potential use of disturbed habitats by salt marsh harvest mouse. A total of 443 trap nights for small mammals was conducted at 36 randomly selected sample sites located throughout the project site. The trapping was conducted on five nights beginning September 8, 2014 and ending September 12, 2014. The

SMHM habitat assessment and results of the small mammal live-trapping study are included as Appendices C and F.

Dr. Padgett-Flohr conducted a site visit and habitat assessment on March 30, 2015 of the Hickory Street ROW, 'A' Avenue, and culvert replacement site. The habitat assessment is included as Appendix G.

Habitat Suitability

Habitat Assessment

The CNDDDB documents two occurrences of SMHM within 1 mile of the project area. One occurrence was documented in 2001 located 0.41 mile from the project area at the San Francisco National Wildlife Refuge (NWR) at Dumbarton Point south of Highway 84 and one occurrence was documented in 1989 located 0.56 mile from the project area on the Mayhews Landing site located east of Jarvis Road and Thornton Avenue. Seventeen additional occurrences are reported from 1984 and 1991 ranging from 1.17 to 4.85 miles from the project area.

The project site, Hickory Street ROW and 'A' Avenue were determined to not provide suitable habitat for SMHM because they are not subject to tidal influence, and are characterized by a predominance of upland, non-native grasses with a small amount of pickleweed that is short in stature. The sparse, scattered, remnant stands of pickleweed in these areas are too small and fragmented to provide the habitat and food resources that SMHM would need to colonize the site. The SMHM uses pickleweed not only for cover, but as a primary food source as well. In addition, SMHM occurs infrequently in areas with reduced salinity, such as these areas. The culvert replacement site is also unsuitable because the small amount of pickleweed is intermixed with and dominated by non-native grasses that does not constitute suitable habitat for the species. Dr. Padgett-Flohr's Habitat Assessment determined that the project site and off-site improvement areas do not contain suitable habitat to support SMHM (California Environmental Services 2014a and 2014c; Appendix C and Appendix G). Although the Enterprise Drive ROW was not included in the SMHM habitat assessment, it is also unsuitable habitat for SMHM because it lacks tidal influence and dense patches of pickleweed similar to the adjacent Hickory Street ROW and "A" Avenue.

Dr. Padgett-Flohr further concluded that the project area is isolated from areas of high-quality SMHM habitat from which the species could disperse if on-site habitat quality were to improve. The Plummer Creek Wetland Mitigation Bank to the south of the site is thought to contain habitat suitable to support the SMHM, but that species has never been observed there. While the CNDDDB reports SMHM occurring 0.41 mile west of the project site (CDFW 2014a), the poor quality of the habitat on the project site, combined with the many barriers presented by roads, fencing, above-ground water lines, salt evaporation ponds, and the superior quality of the habitat present in the NWR lands make it extremely unlikely that SMHM would disperse on to the project site (California Environmental Services 2014a; Appendix C).

In addition to her site assessment, Dr. Padgett-Flohr conducted small mammal live-trapping studies on the project site as part of a research project investigating the potential use of disturbed

habitats by SMHM. No SMHM was found on the project site during the comprehensive live-trapping study.

SMHM Research Study

Numerous scientific studies have concluded that the optimal SMHM macrohabitat is one predominated by pickleweed (Fisler 1965, Shellhammer et al. 1982, Bias 1994); especially when thick stands are heterogeneously mixed with other marsh species (e.g., alkali heath [*Frankenia grandifolia*]; Shellhammer et al. 1988). However, previous research has been restricted primarily to pickleweed-predominated habitats and pickleweed patches within entire marshes. Although many researchers have suggested that upland habitat is an important refuge for SMHM during high tide (Rice 1974, Zetterquist 1977, Bias 1994), few studies have examined the use of upland habitat by SMHM. Further, upland habitat that has been anthropogenically altered has been largely unexamined because of investigator bias in which researchers employ a non-random study design and choose study sites based on perceived optimal or marginal conditions or other criteria (Zetterquist 1977, Bias 1994, Geissel et al. 1988).

Dr. Padgett-Flohr has trapped salt marsh harvest mouse extensively in the nearby San Francisco Bay Don Edwards National Wildlife Refuge (NWR) and is very familiar its distribution and abundance throughout and around the NWR. She is currently conducting a research study by live trapping SMHM and applying statistically valid methods that focus on anthropogenically altered uplands to determine whether SMHM utilizes that disturbed habitat. Since much of the upland habitat around the southern San Francisco Bay has been highly altered by grazing, farming, and industrial uses, it is important to examine the potential of such altered habitat to support SMHM. The study sites include: Gateway Station West in Newark, CA, the Tesoro Refinery in Martinez, CA, the Shortcut Pipeline Project Site, Martinez, CA, the Grizzly Bay Mitigation Preserve, Fairfield, Suisun Bay, CA, the Richmond Gun Club, Richmond, CA and Moffett Field, Mountain View, CA (California Environmental Services 2014b).

The live trapping at the project site began on September 8, 2014 and concluded September 12, 2014. The study was comprised of 36 random sample sites. A numbered grid with 100 roughly equal-sized blocks was overlaid on an aerial map and the 36 sample locations were randomly chosen using a random number generator. The GPS coordinates were determined for each of the 36 sample sites and a Trimble™ sub-meter accuracy, GPS unit was used to locate the sample locations in the field (California Environmental Services 2014c).

At each randomly selected trap site, three Sherman live-traps were placed and completely covered with vegetation for insulation to reduce nocturnal heat loss and dew condensation. Traps were baited with a mixture of walnut meats and birdseed and provided with cotton nesting material. Traps were checked each morning within an hour of sunrise, closed during the day and then re-opened each evening within an hour of sunset. All small mammals captured were identified, sexed and released. All data and trap locations were recorded on data sheets (California Environmental Services 2014c).

No SMHM was found on the project site in a total of 443 trap nights in September of 2014. A total of only six house mice (*Mus musculus*) were captured at four locations along the western boundary of the site. No other species was captured (California Environmental Services 2014c).

Although salt marsh harvest mouse is known to use upland habitat contiguous with native salt marsh habitat, it is apparent that the species does not occur on the project site nor does the site provide any of the primary constituent elements necessary to support SMHM. The SMHM requires thick, dense stands of perennial pickleweed intermixed with other halophytic plants that are mid-range in salinity level. The Gateway Station West site does not have those primary constituent elements because it has been diked, highly disturbed and altered by industrial uses for the past 70 years (California Environmental Services 2014a; Appendix C).

The absence of tidal influence has created habitat that alternates between hypersaline to upland. Much of the site is vegetated by abundant, widespread upland and non-native plants. The sparse pickleweed that is present is very saline as evidenced by its short stature. Salt marsh harvest mouse is absent from sites that are hypersaline or have no salinity because of the lack of tidal influence (Padgett-Flohr and Isakson 2003). The project site has both characteristics and is isolated from areas of high-quality salt marsh habitat by significant barriers (e.g., roads and large, continuous pipes that transport salt solutions around the site). It is therefore not surprising that salt marsh harvest mouse is not present on the study site (California Environmental Services 2014a and c; Appendices C, F).

The project site is depauperate in small mammal species, as the only species captured was the non-native, house mouse. There was no sign (i.e., small mammal trails, runways or burrows) of species that typically inhabit upland habitats in the area including meadow vole (*Microtus californicus*) and western harvest mouse (*Reithrodontomys megalotis*). Despite sampling throughout the project site, only 6, non-native house mice were only captured at its western periphery indicating that the site provides only marginal habitat for a small mammals typical of disturbed habitat (California Environmental Services 2014a and c; Appendices C, F).

Potential Project Impacts

Dr. Padgett-Flohr determined that the site does not contain suitable habitat to support SMHM and that none would be affected by its development (California Environmental Services 2014a). That conclusion was bolstered by an additional pedestrian survey of the site by Dr. Padgett-Flohr on July 10, 2014 that also concluded that no suitable habitat was present on the site. Since a qualified, CDFW and USFWS permitted salt marsh harvest mouse biologist rendered a conclusion that no impact to the salt marsh harvest mouse would occur from development of the project site, the standards of care dictated by CEQA have be met and no further action is warranted, and no compensatory mitigation is required. In addition, a research study that live-trapped the entire Gateway Station West site found no SMHM in a total of 443 trap nights in September of 2014 (California Environmental Services 2014c).

The adjacent property to the east (Torian) is currently under construction. That site has been cleared, graded and a mouse-proof fence has been installed to prevent SMHM from entering the work area. Since the subject property does not contain suitable habitat to support SMHM

(California Environmental Services 2014a), no SMHM was found in 443 trap nights in September of 2014 and exclusionary fencing has been placed around the adjacent property, as a reasonable and prudent voluntary protective measure to avoid potentially affecting SMHM prior to any development activity, the owner installed mouse-proof fence along its southern and western borders on September 15, 2014 so that SMHM cannot enter and be harmed on a site that is zoned for development.

The exclusion fence is located along the southern and western property borders that are also separated from any potential habitat by roads and above-ground pipelines in active use by adjacent solar salt harvesting. The fence is a durable species barrier designed to exclude sensitive species from a site where they could be harmed. The fence is the same design and construction as that approved by the USFWS for the adjacent Torian property and was installed by the same contractor. The woven geotextile fence is backed by steel mesh for added strength and wind resistance. The fence is backed by steel mesh for added strength and wind resistance. A 14-inch metal climbing barrier is buried 5 inches below grade. The fence extends 3 feet above the ground and is supported by 5-foot wood stakes every 6 feet with 4 screws per stake and every other stake is cross-braced. The fence is tethered by a 0.25-inch yellow poly rope and zip-ties to provide additional support.

The exclusionary fencing is a voluntary, precautionary, pre-construction measure to prevent access to the project site by SMHM. It was installed outside of bird nesting season and under the direct supervision of biologists whom ensured that installation work did not affect any waters of the U.S. or state or harm any sensitive plant or animal species (see Appendix M). The property owner has committed to verify the integrity of the exclusion fence and repair it as needed on a monthly basis.

Although no suitable habitat to support SMHM occurs in the off-site improvement areas, the Plummer Creek Wetland Mitigation Bank adjacent to the culvert replacement site is thought to contain habitat suitable to support the SMHM, but that species has never been observed there. As a result, construction activities in the culvert replacement site would not be expected to impact SMHM in the culvert replacement site or adjacent areas. However, to avoid potentially affecting SMHM, the applicant proposes to voluntarily implement protective measures during construction.

5.3.4 Migratory Birds and Birds of Prey

Eucalyptus trees, barn owl boxes, and utility line towers on the project site and adjacent areas provide potential nesting habitat for various raptors that are protected by the California Fish and Game Code. Red-tailed hawks and barn owls have been observed foraging over the project site during biological surveys. If construction of the proposed project commences during the nesting period for red-tailed hawks, or other raptors, construction activities and construction-related disturbance (e.g., noise, vibration, increased human activity) could adversely affect these species if they were to nest in the study area or in suitable habitat adjacent to the study area. Black phoebes were observed in the study area. Black phoebes, swallows, or other passerines protected under the MBTA nesting in the box culverts or shrubs, or in vegetation along the ditches in the

study area or immediate vicinity could be adversely affected by the construction-related activity through nest disturbance, nest abandonment, or direct injury or death.

Various species of migratory waterfowl use wetlands on the project site, adjacent Plummer Creek Wetland Mitigation Bank, and solar salt basins during the winter. As previously described for other protected bird species, construction of the proposed project would increase the number of people in close vicinity to potentially suitable nesting and foraging habitat for migratory birds and birds of prey. Associated potential impacts would include harassment from increased noise and activity in the vicinity of potentially suitable habitat, degradation of habitat from litter and light spillover from the nearby development, and the potential for increased predation as a result of increased domestic and feral cats and dogs, and other predatory pets associated with development.

The open space area will be set aside in perpetuity and managed under a management plan which will include elements to manage litter accumulation, limit access and land uses, and monitor habitat quality. Installation of the proposed fencing along the southern and western boundaries of the development footprint will restrict direct access from the development to the open space area and off site areas. The 6-foot-high woven wire fence proposed to be installed between the project site and the solar salt basins west of the project site will create a barrier between the development and potential nesting and foraging habitat for migratory birds at the solar salt basins. The keeping of outside feline pets or feral cat stations will be prohibited, thereby reducing the potential for cats to prey on or harass migratory birds in suitable habitat in the open space or near the project site. Lighting will be designed consistent with Policy LU-6.6 of the City General Plan Land Use Element, and the Site and Architecture Design Guidelines contained in the Specific Plan which require that the lighting be designed to reduce glare and over-lighting impacts. As a result, potential indirect impacts to migratory birds and birds of prey associated with light and glare would be reduced.

6.0 RECOMMENDED AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

6.1 PROTECTED TREES

Mitigation Measure 4.3-8 from the Dumbarton TOD Specific Plan EIR shall be implemented prior to site disturbance for removal of any trees in the project site or off-site improvement areas that are protected by City Ordinance:

MM 4.3-8: A tree permit shall be obtained from the City prior to the removal of any tree protected by City ordinance on the project site or off-site improvement areas. To offset impacts resulting from the removal of protected trees, replacement trees shall be planted in designated open space areas on the project site. Tree replacement shall be at a 1:1 ratio (that is, for each tree removed, one tree shall be planted as a replacement). Replacement trees shall be native California species that are native to the Newark area.

A Tree Management Plan shall be prepared for the proposed project if tree removal occurs. Preparation of this plan and subsequent planting and monitoring shall be a condition of project approval and shall be tied to a security bond or cash deposit posted by the developer with the City to pay for any remedial work that might need to occur, if the prior effort fails.

All planted trees shall be provided with a buried irrigation system that shall be maintained over a minimum three-year establishment period. The irrigation system shall be placed on automatic electric or battery operated timers so that trees are automatically watered during the dry months of the establishment period. At the end of the 3-year establishment period, the irrigation system could be removed, if necessary. The planted trees' health shall be monitored annually for 5 years by a qualified biologist or arborist. Annual monitoring reports shall be submitted to the City.

At the end of a five-year monitoring period, at least 80 percent of planted trees shall be in good health. If the numbers of planted trees falls below an 80 percent survival rate, additional trees shall be planted to bring the total number of planted trees up to 100 percent of the original number of trees planted. Irrigation and follow-up monitoring shall be established over an additional three year period after any replanting occurs. Any replanting and follow-up monitoring shall be reported in annual reports prepared for the City, Community Development Department. A performance bond, letter of credit, or other financial instrument shall be established to pay for any remedial work that might need to occur, if the prior effort fails.

6.2 SENSITIVE HABITATS OR SPECIAL-STATUS NATURAL COMMUNITIES

6.2.1 Waters of the U.S./State

Section 4.3 of the Dumbarton TOD Specific Plan EIR identified Mitigation Measure 4.3-6 to address identified potentially significant impacts to waters of the U.S./State within the Specific Plan area in the form of conducting a project-specific wetland delineation, obtaining the appropriate permits and providing appropriate compensatory mitigation (as appropriate). Delineations of waters of the U.S./State have been prepared and submitted to USACE for approval consistent with Mitigation Measure 4.3-6. The project specific mitigation is presented below to meet the requirements of Mitigation Measure 4.3-6 regarding obtaining the appropriate permits and providing appropriate mitigation for impacts to waters of the U.S./State on the project site or off-site improvement areas.

- A verification of/concurrence with the 2015 wetland delineation must be obtained from the USACE prior to approval of the proposed project by the City.
- Authorization from the Corps and the RWQCB (for example, an Individual Permit and a 401 Water Quality Certification) shall be obtained as necessary/required by these agencies prior to filling any waters of the U.S./State on the project site or off-site improvement areas.

- Impacts shall also be minimized by the use of Best Management Practices (BMPs) to protect preserved waters of the U.S./State and to ensure that water quality standards are not compromised in preserved wetlands and other waters within the watershed. These practices can include installing orange construction fencing buffers, straw wattles to keep fill from entering preserved/avoided wetlands and other waters, and other protective measures. During project construction, a biological monitor shall be on site to monitor the integrity of any preserved wetlands and other waters during mass grading or filling of the project site or off-site improvement areas.
- For those wetland areas that are not avoided by project construction, compensatory mitigation shall be provided. As approved by the USACE, the project applicant may purchase mitigation credits from an approved mitigation bank or an approved in-lieu fee mitigation entity at a minimum 1:1 ratio.
- As an alternative to the purchase of credits in a mitigation bank, wetlands may be created on site and, if so, shall have an equal or higher functional value than those wetlands affected by the project (known as in-kind replacement). If wetlands cannot be created in-kind and on site, other alternatives shall include off-site and/or out-of-kind mitigation. In any case, mitigation requirements for wetland areas that are not avoided shall be that all impacted wetlands are replaced at a minimum 1:1 ratio (for each square foot of impact, one square foot of wetland would be restored/created) or at a ratio determined by the USACE at the time permits are issued. Mitigation requirements will be based upon the existing conditions of the wetlands impacted. Where practicable, wetland plant/animal populations shall be relocated prior to disturbance from the impacted wetlands to any re-created wetlands. Topsoils shall also be removed from impacted wetlands if practicable, and placed into any re-created wetlands. These topsoils would contain a seed bank of the impacted plant species which would germinate with fall/winter hydration of the re-created wetlands.
- If wetlands are restored/created, adequate compensation shall include creating wetlands at a suitable location that meet the following performance standards:
 - The wetlands shall remain inundated or saturated for sufficient duration to support a predominance of hydrophytic vegetation.
 - The wetlands shall exhibit plant species richness comparable to affected wetlands.
 - The wetlands shall replace the lost wetlands at a minimum ratio of one acre created for each acre, or fraction thereof, permanently impacted.
 - The developer shall provide for the protection of the mitigation areas in perpetuity either through a permanent protection device such as a restrictive covenant or conservation easement.
 - The developer shall establish a five-year program to monitor the progress of any restored or created wetland mitigation, other than Mitigation Bank Credits, toward these standards. At the end of each monitoring year, an annual report shall be submitted to the City, the RWQCB, and the USACE. This report shall document the hydrological and vegetative condition of the mitigation wetlands, and shall recommend remedial measures as necessary to correct deficiencies.

- The USACE and other regulatory agencies generally require that wetlands not impacted by the proposed project and any new wetlands created to mitigate project impacts be set aside in perpetuity, either through deed restrictions or conservation easements. See the avoidance and minimization measure regarding the open space area (Section 6.4).

6.2.2 Habitats Regulated by CDFW

The following project-specific mitigation measure is developed to address activities that substantially divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream.

- A Streambed Alteration Agreement shall be obtained for impacts to habitats regulated by CDFW pursuant to Section 1600 *et seq.* of the California Fish and Game Code. Measures required by the Streambed Alteration Agreement shall be implemented as a condition of project approval and prior to ground disturbance affecting the drainage ditches and associated vegetation regulated by CDFW. A “no net loss” of bed, banks, and channels of the regulated waterways permanently lost as a result of the project shall be achieved with this mitigation measure.

6.3 SPECIAL-STATUS SPECIES

6.3.1 Special-Status Plant Species

Section 4.3 of the Dumbarton TOD Specific Plan EIR identified Mitigation Measure (MM) 4.3-5 to address potentially significant impacts to special-status plant species within the Specific Plan area in the form of special-status plant surveys and the development of suitable mitigation measures if special-status plants are present. Special-status plant surveys have been conducted consistent with MM 4.3-5 for the project-site and off-site improvement areas. A special-status plant survey report that includes the methods used, survey participants, and findings of the special-status plant surveys conducted on the project site has been submitted to the City demonstrating absence of special-status plants on the project site (Appendix E). Project specific mitigation is presented below to meet the requirements of MM 4.3-5 and address potential impacts related to special-status plants on the project site or off-site improvement areas.

- The results of rare plant surveys are typically considered valid for two blooming seasons after the surveys are conducted. If development of the site commences by summer of 2017, no further mitigation measures are required for special-status plant species. If development of the site does not commence by the end of summer 2017, rare plant surveys should be re-conducted to verify presence/absence of special-status plant species.
- If special-status plants are found in the project site and/or off-site improvement areas, project development plans shall consider avoidance to the extent practicable. If avoidance is not practicable while otherwise obtaining the project’s objectives, then other suitable measures and mitigation shall be implemented as detailed below. A mitigation compliance report shall be submitted to the City planning staff or staff biologist at least

30 days prior to ground disturbance. The compliance report shall detail the avoidance and other mitigation measures that have been implemented by the project. The City may approve grading/site disturbance in a quicker timeframe than 30 days if compliance with the mitigation measures can be verified by the City sooner than 30 days.

- The following measures shall be implemented if special-status plants are found in the project area during subsequent survey(s) prior to site disturbance:
 - Initially the feasibility of avoidance shall be evaluated as noted above.
 - If avoidance is not feasible, a mitigation plan shall be developed in consultation with CDFW personnel if it is a state listed (i.e., protected pursuant to the CESA) or a CNPS List 1B or List 2 plant. If the plant is state listed, an incidental take permit (i.e., a 2081 Agreement) shall be acquired for the project from CDFW prior to any grading within the project area. A copy of the permit shall be provided to the appropriate department within the City prior to any grading within the project area. Any conditions for the project established by CDFW in the 2081 Agreement shall become conditions of the project also enforceable by the City.
 - If the plant is federally listed (i.e., protected pursuant to FESA), the project sponsor shall formally notify the USFWS within five days of the finding and this agency's permitting instructions shall be incorporated into the project conditions of approval. As required in-practice by the USFWS, an "incidental take" permit may be necessary from the USFWS for any proposed impacts on any federally listed plants found within the project site. A copy of this permit or a letter from the USFWS that otherwise states this agency is satisfied with the avoidance and/or mitigation measures shall also be provided to the appropriate department at the City prior to the time the project site can be graded.
 - If a plant is found on the project site that is a CNPS List 1B or 2 species, and the species is not otherwise protected pursuant to state or federal regulations, prior to construction within the project area, CDFW shall be notified. A qualified botanist shall collect the seeds, propagules, and top soils, or other part of the plant that would ensure successful replanting of the population elsewhere. The seeds, propagules, or other plantable portion of all plants shall be collected at the appropriate time of the year. Half of the seeds and top soils collected shall be appropriately stored in long-term storage at a botanic garden or museum (for example, Rancho Santa Ana Botanic Garden). The other half of the seeds, propagules, or other plantable portion of all plants shall be planted at the appropriate time of year (late-fall months) in an area of the project site or off-site, protected property that will not be impacted by the project (if the project has a designated off-site mitigation site for impacts on other special-status species, the plants can be seeded on the mitigation site). This area shall be fenced with permanent fencing (for example, chain link fencing) to ensure protection of the species. The applicant shall hire a qualified biologist to conduct annual monitoring surveys of the transplanted plant population for a five-year period and

shall prepare annual monitoring reports reporting the success or failure of the transplanting effort. These reports shall be submitted to the City and appropriate resource agency (CDFW and/or USFWS) no later than December 1st of each monitoring year.

- If the seeding/transplanting effort fails, the stored seeds and top soils can be taken out of long-term storage and sown in another location (either on site or off site) deemed suitable by CDFW. This seeding effort shall then be monitored for an additional three-year period to ensure survivorship of the new population. Annual monitoring reports shall be submitted to the City for the three-year period.
- A CNDDDB form shall be filled out and submitted to CDFW for any special-status plant species identified within the project site. Any mitigation plan developed in consultation with CDFW shall be implemented prior to the initiation of grading or issuance of a development permit.
- In lieu of the above-prescribed mitigation, as allowed in writing by the City (for CEQA protected species only) and/or CDFW (for CEQA and/or state listed species), mitigation requirements may be satisfied via the purchase of qualified mitigation credits or the preservation of off-site habitat. If the species in question is federally listed, then USFWS would also have to agree in writing, typically through issuance of a Biological Opinion, that the purchase of qualified mitigation credits or the preservation of off-site habitat would constitute satisfactory mitigation.

6.3.2 Special-Status Wildlife

Burrowing Owl (*Athene cunicularia*)

Section 4.3 of the Dumbarton TOD Specific Plan EIR identified MM 4.3-3 to identify potentially significant impacts to burrowing owls within the Specific Plan area. The mitigation measure is relevant to the proposed project; however, the measure is based on the 1995 CDFG burrowing owl guidelines which have been supplanted by the Staff Report on Burrowing Owl Mitigation (CDFW 2012). Protocol breeding season presence/absence surveys required by MM 4.3-3 have been conducted according the current guidelines prepared by CDFW in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). Because the only evidence of burrowing owl on the project site and off-site improvement areas was signs of potential past use by a solitary winter migrant, no compensatory mitigation is triggered; however, additional pre-construction surveys are warranted. If burrowing owl pair(s) or resident burrowing owl is observed during any of the pre-construction surveys, avoidance and compensatory mitigation would be required, as described below. The project specific mitigation presented below reflects revisions to MM 4.3-3 for consistency with the 2012 CDFW guidelines for preconstruction surveys and to address potential impacts to burrowing owls in the project site.

- Pre-construction surveys for western burrowing owl shall be conducted in accordance with the CDFW 2012 protocol by a qualified biologist prior to ground disturbance

(including grading, clearing and grubbing, brush removal, or any other ground disturbance) as described below to ensure there are no impacts on burrowing owls as a result of the proposed project.

- The initial survey shall be conducted in the 30-day period prior to ground disturbance associated with the project, but no less than 14 days prior to the initiation of ground disturbance. Western burrowing owl surveys shall be conducted from two hours before sunset to one hour after, or one hour before to two hours after sunrise. All burrowing owl sightings, occupied burrows, and burrows with owl sign (e.g., pellets, excrement, and molt feathers) shall be counted and mapped. Surveys shall be conducted by walking all suitable habitat on the entire project area and (where possible) in areas within 150 meters (approximately 500 feet) of the project impact zone. The 150-meter buffer zone is surveyed to identify burrows and owls outside of the project area which may be impacted by factors such as noise and vibration (heavy equipment) during project construction. Pedestrian survey transects shall be systematically spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines shall be no more than 20 meters (approximately 100 feet) and shall be reduced to account for differences in terrain, vegetation density, and ground surface visibility. If no suitable burrowing owl habitat is present, no additional surveys will be required. If suitable burrows are determined to be present on the site, a qualified biologist will visit the site an additional three times to investigate whether owls are present where they could be affected by the proposed activities. The final survey shall be conducted within the 24-hour period prior to the initiation of construction.
- If burrowing owl is present during the non-breeding season (generally September 1 through January 31), a buffer of 50 meters (approximately 160 feet) shall be maintained around the occupied burrow(s), if practicable. If maintaining such a buffer is not feasible, then the buffer must be great enough to avoid injury or mortality of individual owls or the owls shall be passively relocated in coordination with CDFW. If burrowing owl is detected on the site during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 250-foot buffer shall be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance in the project area. This 250-foot buffer could be decreased to 160 feet once it is determined by a qualified burrowing owl biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified burrowing owl biologist.
- If burrowing owl is found on the project site, a qualified biologist shall delineate the extent of burrowing owl habitat on the site and a Mitigation Plan shall be prepared in consultation with CDFW for review and approval by the City. The Mitigation Plan shall identify the mitigation site and any activities proposed to enhance the site, including the construction of artificial burrows and maintenance of California ground squirrel populations on the mitigation site. In addition, for each pair of burrowing owls found in the construction area, two artificial nesting burrows shall be created at the mitigation site. The Plan shall also include a description of monitoring and management methods

proposed at the mitigation site. Monitoring and management of any lands identified for mitigation purposes shall be the responsibility of the applicant for at least five years. An annual report shall be prepared for submittal to CDFW and the City by December 31 of each monitoring year. Contingency measures for any anticipated problems shall be identified in the plan. Compensatory mitigation shall consist of providing six and a half acres of replacement habitat which shall be protected in perpetuity per pair of burrowing owls, or unpaired resident bird. Such a set-aside would offset permanent impacts on burrowing owl habitat. The protected lands shall be adjacent to occupied burrowing owl habitat if possible, and at a location selected in consultation with CDFW. Land identified to offset impacts on burrowing owls shall be protected in perpetuity by a suitable property instrument (e.g., a conservation easement or fee title acquisition).

Northern Harrier (*Circus cyaneus*) and Other Nesting Raptors

Section 4.3 of the Dumbarton TOD Specific Plan EIR identified MM 4.3-2 to identify potentially significant impacts to nesting raptors within the Specific Plan area. The mitigation measure is relevant to the proposed project. The project specific avoidance and minimization measures below are a revision of MM 4.3-2 to include detailed survey requirements based on the species with the potential to be present. The following avoidance and minimization measures shall be implemented prior to site disturbance to avoid impacts to nesting northern harriers and other raptors on the project area or immediately adjacent properties as required by MM 4.3-2 from the Specific Plan EIR.

- In order to avoid impacts to northern harrier or other nesting raptors, a nesting survey shall be conducted within the project site prior to commencing with earth-moving or construction work if this work would occur during the raptor nesting season (between February 1 and August 31).
- The raptor nesting survey shall include examination of all trees on or within 300 feet of the entire project site, not just trees slated for removal, since ground vibrations and noise from earth-moving equipment can disturb nesting birds and potentially result in nest abandonment. Areas within 300 feet of the project site shall be surveyed on foot if accessible or from within the project site or publicly accessible areas by scanning the surrounding land with the aid of binoculars. Since northern harriers are ground nesting raptors, the nesting surveys will include systematic walking transects of accessible, suitable nesting habitat within 300 feet of the project site.
- If nesting raptors are identified during the surveys, CDFW shall be notified to determine the appropriate , orange construction fence shall be installed to establish a 300-foot radius around the nest unless a qualified biologist determines that a lesser distance will adequately protect the nest (refer to discussion below for more detail). If the tree or nest is located off the project site, then the buffer shall be demarcated per the above where the buffer intersects the project site.
- The size of the non-disturbance buffer may be altered if a qualified raptor biologist conducts behavioral observations and determines the nesting raptors are well acclimated

to disturbance. If this occurs, the raptor biologist shall prescribe a modified buffer that allows sufficient room to prevent undue disturbance/harassment to nesting raptors. If the buffer is reduced, the qualified raptor biologist shall remain on site to monitor the raptors' behavior during heavy construction in order to ensure that the reduced buffer does not result in take of eggs or nestlings.

- No construction or earth-moving activity shall occur within the established buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 31. This date may be earlier or later, and shall be determined by a qualified raptor biologist. If a qualified biologist is not hired to monitor the nesting raptors then the full 300-foot buffer(s) shall be maintained in place from February 1 through the month of August. The buffer may be removed and work may proceed as otherwise planned within the buffer on September 1.

Saltmarsh Common Yellowthroat (*Geothlypis trichas sinuosa*) and Other Nesting Passerines and Migratory Birds

Section 4.3 of the Dumbarton TOD Specific Plan EIR identified MM 4.3-4 to identify potentially significant impacts to nesting passerines within the Specific Plan area. The mitigation measure is relevant to the proposed project. The project specific avoidance and minimization measures below are a revision of MM 4.3-4 to include detailed survey requirements based on the species with the potential to be present. The following avoidance and minimization measures shall be implemented prior to site disturbance to avoid impacts to saltmarsh common yellowthroat and other nesting passerines and migratory birds utilizing the project area or immediately adjacent properties, as required by MM 4.3-4 from the Specific Plan EIR.

- To avoid impacts on nesting passerines and other migratory birds, a nesting survey shall be conducted in the project site and areas within 100 feet of the site prior to commencing initial earth-moving (including site remediation activities) or construction work if this work would occur during the passerine nesting season (between March 1 and September 1). Areas within 100 feet of the project site shall be surveyed on foot if accessible or from within the project site or publicly accessible areas by scanning the surrounding land with the aid of binoculars.
- The nesting surveys shall be completed approximately 15 days prior to commencing work. If special-status birds are identified nesting on or near the project site, a 100-foot radius around all identified active nests shall be demarcated with orange construction fencing to establish a non-disturbance buffer. If an active nest is found off site, the intersecting portion of the buffer that is on site shall be fenced. No construction or earth-moving activity shall occur within this 100-foot staked buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones.
- If common (that is, not special-status) birds, for example, red-winged blackbird, are identified nesting on or adjacent to the project site, a non-disturbance buffer of 75 feet

shall be established or as otherwise prescribed by a qualified biologist. The buffer shall be demarcated with orange construction fencing. Disturbance around an active nest shall be postponed until it is determined by the qualified biologist that the young have fledged and have attained sufficient flight skills to leave the area.

- Typically, most birds in the region of the project site are expected to complete nesting by August 1. However, in the region many species can complete nesting by the end of June or in early to mid-July. Regardless, nesting buffers shall be maintained until August 1 unless a qualified biologist determines that the young have fledged and are independent of their nests at an earlier date. If buffers are removed prior to August 1, the biologist conducting the nesting surveys shall prepare a report that provides details about the nesting outcome and the removal of buffers. This report shall be submitted to the City project planner and CDFW prior to the time that buffers are removed if the date is before August 1.
- Existing vegetation along the tops of the banks of the north/south drainage ditch through the open space area that provides potential nesting habitat for saltmarsh common yellowthroat and other nesting passerines, as determined by a qualified biologist, shall be protected from removal during site remediation activities.

Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*)

Mitigation Measure 4.3-1 of the Dumbarton TOD Specific Plan EIR requires that a CDFW and USFWS permitted federal and state permitted salt marsh harvest mouse biologist conduct a habitat assessment to determine whether suitable habitat is present for salt marsh harvest mouse. If the conclusion is rendered by the CDFW and USFWS-qualified biologist that no impacts to the salt marsh harvest mouse would occur, the standards of care dictated by CEQA will be met and no further action shall be warranted. Dr. Padgett-Flohr determined that the site does not contain suitable habitat to support SMHM and that none would be affected by its development (California Environmental Services 2014a). That conclusion was bolstered by an additional pedestrian survey of the site by Dr. Padgett-Flohr on July 10, 2014 that also concluded that no suitable habitat was present on the site. Based on these findings by a qualified, CDFW and USFWS permitted salt marsh harvest biologist, the standards of care dictated by CEQA have been met and no further action is warranted, and no compensatory mitigation is required.

However, to bolster this finding, the applicant proposes to voluntarily implement protective measures for salt marsh harvest mouse during culvert replacement activities in the culvert replacement site. The project specific mitigation is presented below based on the requirements of Mitigation Measure 4.3-1.

- A qualified biologist (biological monitor) shall be on site in the culvert replacement site during preconstruction and culvert replacement activities.
- Vegetation required to be removed in the culvert replacement site shall be removed by hand, and the area to be cleared would be minimized to the extent possible. Removed vegetation shall be stockpiled in areas away from the work activities.

- Mouse-proof fencing shall be installed prior to culvert replacing activities, and maintained for the duration of construction. Prior to installing the salt marsh harvest mouse fence, all vegetation must be cleared from alongside the fence line route. The fencing shall be installed around the work area to prevent mice from entering the work area. The fencing shall be climb-proof (for example, smooth plastic, not silt fencing), and installed in such a manner that the salt marsh harvest mouse cannot dig under the fence. The salt marsh harvest mouse is known to be an agile climber, but rarely digs extensively; regardless, fencing materials must account for both behaviors.

The salt marsh harvest mouse fence shall be constructed using eight-millimeter plastic sheeting that is sandwiched between wooden stakes and buried in a minimum six-inch deep trench. The stakes shall screw together, firmly sandwiching the plastic in place. It is mandatory to sandwich the plastic between stakes if the fence is to last through even moderate winds. The finished installed fence shall be three feet above the ground. The plastic sheeting shall be smooth and non-climbable, and shall be buried and stapled to the ground at three-inch intervals to prevent rodents from digging under the fence. If construction activities occur for longer than three months from when the fence was installed, the fencing shall be replaced after three months. The integrity of the salt marsh harvest mouse fencing shall be inspected on a weekly basis by the biological monitor.

6.4 OPEN SPACE

The proposed project includes the establishment of conservation open space on the project site. Mitigation Measure 4.3-6 of the Dumbarton TOD Specific Plan EIR includes measures specific to establishing a preserve associated with avoided wetlands. The project specific mitigation is presented below to meet the requirements of Mitigation Measure 4.3-6, while addressing potential indirect impacts to sensitive wildlife species with the potential to use the open space area following construction of the development.

- The open space area shall be set aside in perpetuity, either through deed restrictions or conservation easements. Because the open space area contains waters under jurisdiction of the USACE and RWQCB, and potentially suitable habitat for species regulated by and CDFW, the plan shall be developed in coordination with these agencies. If a perpetual deed restriction is used to preserve the open space the land owner and any assignees/transferees of the title of the property shall assume liability for the perpetual management of the preserved lands. The deed restriction shall provide the allowed and prohibited uses of the preserved site, and these uses shall be approved by the agencies. If a conservation easement is established, a non-wasting management endowment (non-wasting infers that principal may not be used to pay for management actions, only interest on the principal sum may be used) shall be established in concert with the grantee of the conservation easement and shall be large enough to pay for necessary management actions. In lieu of a management endowment, other financial assurances may be provided that otherwise are found acceptable by the USACE. An example of an alternative funding source would be via a Geologic Hazards Assessment District (GHAD). Home Owners' Associations and Landscape Lighting Districts are not suitable funding entities as funds collected via these entities can be distributed City wide at the

discretion of the City. In contrast, GHADs must be used within the taxing district where the funds are acquired.

- At least 60 days prior to commencement of ground disturbing activities (including site remediation activities), the applicant shall submit to CDFW, RWQCB, USACE for review and approval a management plan for the open space preserve area. The management plan will address the following issues:
 - Funding: The applicant shall provide to the agencies documentation that funds for monitoring and perpetual maintenance of the open space area is available through one of the previously described mechanisms.
 - Maintenance and Repair: The applicant shall provide for routine maintenance such as debris removal and inspection and repair of fences and access entries. The frequency of the maintenance activities shall be developed in coordination with the agencies.
 - No Vehicles: Except as needed for maintenance and repair, and access of existing easements on the property, or as necessary in emergency situations, non-motorized and motorized vehicles shall be prohibited from the open space area.
 - Inspection and Monitoring: The applicant shall establish a five –year program to monitor the progress of the wetland mitigation toward these standards. At the end of each monitoring year, an annual report shall be submitted to the City, the RWQCB, USACE, and CDFW. This report shall document the hydrological and vegetative condition of the wetlands, and shall recommend remedial measures as necessary to correct deficiencies.
 - Restricted Activities: The applicant shall identify activities prohibited from taking place in the open space area. These include, but are not limited to: (1) alteration of existing topography or other alteration or uses for any purpose; (2) placement of any new structures in the open space area; (3) dumping and/or burning of rubbish, garbage, or other waste or fill materials; (4) construction and/or placement of new infrastructure, other than those already identified in the project design, including new roads or trails, and storm water systems or utilities (outside of the existing easements); (5) use of pesticides or herbicides unless otherwise approved by the agencies.
- To minimize the potential for predation and harassment of wildlife using the open space area, solar salt basins, and Plummer Creek Wetland Mitigation Bank from cats associated with the Gateway Station West development, the keeping of outside feline pets or feral cat stations shall be prohibited. Enforcement of the restriction shall be reflected in the Covenants, Conditions & Restrictions of the neighborhood. All occupants of the project site and potential occupants shall be notified of this restriction.

7.0 ACKNOWLEDGEMENTS

The following people contributed to the preparation of this report:

Dave Claycomb^{3,5} M.S., Natural Resources Management, Humboldt State University, 1983
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⁵Contributing Author; ⁶Technical Editor

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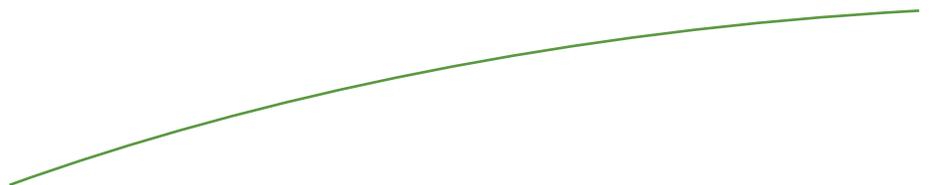
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Appendix A

CERTIFIED ARBORIST TREE INVENTORY,
GATEWAY STATION PROJECT,
CITY OF NEWARK, CALIFORNIA



HELIX Environmental Planning, Inc.
11 Natoma Street
Suite 155
Folsom, CA 95630
916.365.8700 tel
www.helixepi.com



July 30, 2015

Mr. Glenn Brown
VP Entitlements, Integral Communities
Dumbarton Area 2, LLC
500 La Gonda Way, Suite 202
Danville, CA 94526

**RE: Certified Arborist Tree Inventory
Gateway Station West Project, City of Newark, California**

On behalf of Dumbarton Area 2, LLC, HELIX Environmental Planning, Inc (HELIX) conducted an inventory of trees protected under Chapter 18.16 of the City of Newark Municipal Code, entitled *Preservation of Trees of Private Property*, for the Gateway Station West Project. This technical memorandum documents the results of the tree inventory.

The City of Newark Municipal Code states: No person shall cut down, destroy, remove or move any tree, which shall include any live woody plant having one or more well defined perennial stems with a trunk diameter of six inches or greater measured at four feet above ground level, growing within the city limits on any parcels of land except developed residential parcels of land ten thousand square feet or less in area, unless a permit to do so has been obtained from the public works director (Ordinance 63 § 2 (part), 1979). The purpose of the tree inventory was to document existing trees in the project area in support of an application for tree removal from the City of Newark Public Works, if such a permit is necessary.

PROJECT LOCATION AND DESCRIPTION

The 54.53-acre Gateway Station project site is located in southwestern Alameda County within the City of Newark, California. Enterprise Drive (formerly Wells Avenue) terminates at the northeast corner of the project site, and the project site is bounded by Hickory Street to the east and several salt production basins associated with the solar salt production process west of the site. Off-site improvements may also take place within the following locations: (1) an approximately 1.6- acre area of the 80-foot- wide Hickory Street ROW east of the project site and just off the southwestern northeastern corner of the site; (2) an approximately 2-acre area of the proposed 90-foot wide Enterprise Drive ROW extending between Hickory and Willow streets; (3) an approximately 0.6-acre area of the proposed 'A' Avenue corridor

extending approximately 300 feet east of Hickory Street; and (4) an approximately 0.05-acre Culvert Easement area adjacent to the southwestern site corner associated with the proposed replacement of an existing drainage culvert. The project site is generally located in a largely industrial area, with open space and existing and developing residential uses in the vicinity. The surrounding land uses are characterized by existing and former industrial parcels, with nearby business/professional centers and residential lots. **Attachment A** shows the project's location in the region. **Attachment B** shows the project site and off-site improvement areas on an aerial map.

The proposed project includes the development of six villages and one future senior housing lot with approximately 667 single- and multi-family residential units and associated infrastructure (parking areas, parks, trails, storm water facilities, and roadway and utility infrastructure) on approximately 41 acres of the 54.5-acre project site. The remainder of the site (approximately 13.5 acres) is designated as open space and will not be developed. The proposed project design is included as **Attachment C**.

METHODS

An inventory of trees occurring in the project site was conducted on December 11, 2013 by International Society of Arboriculture (ISA) Certified Arborist Stephen Stringer, M.S. (WE-7129A) and Catherine Silvester. Mr. Stringer inventoried the trees occurring in the Hickory Street ROW on October 20, 2014, and the Enterprise Drive ROW on June 21, 2015. All live woody plants in the project and Off-Site Improvement Area meeting the City of Newark's definition of a tree were assessed. The diameter of each tree was measured at approximately 4 feet above ground level using a diameter logger's tape measure. For multi-trunked trees, the diameter of each trunk was measured.

The locations of trees with one or more trunks with a diameter of six inches or greater measured at four feet above ground level were recorded using a Trimble GeoXH global positioning system (GPS). For each tree recorded, the species, trunk diameter(s), height, and vigor were recorded on a data sheet. Each tree was evaluated for vigor and assigned a category ranging from poor (likely to die within 5 years) to fair (dead branches, burns, rots, insects, etc.; but will survive more than 5 years) to excellent. Comments such as number of trunks, irregularities, scars or other growth characteristics or vigor indicators were recorded for each tree.

RESULTS

A total of eight trees meeting the criteria for protection under the City of Newark Municipal Code were identified on the project site and off-site improvement areas. Two non-native silver dollar gum trees (*Eucalyptus polyanthemus*) are located on the project site adjacent to the dog training facility in the southeast corner of the site, and are generally in good condition. One California fan palm (*Washingtonia filifera*) occurs within the Hickory Street ROW, and two California fan palms, two shamel ash trees

Mr. Brown
July 30, 2015

Page 3 of 3

(*Fraxinus uhdei*), and one acacia (*Acacia* sp.) meeting the criteria for protection under the Municipal Code are located in the Enterprise Drive ROW.

A Tree Location Map documenting the location of each tree in the project area is included as **Attachment D** and the Arborist Survey Data Form containing the data associated with each tree inventoried is included as **Attachment E**.

SUMMARY

A total of eight trees meeting the City of Newark's definition were identified in the project area. A permit would likely be required from the City of Newark's public works director prior to removal, destruction, or transplantation of any of these trees. If you have any questions or comments regarding the results of the survey, please do not hesitate to contact me by e-mail at stephens@helixepi.com or by phone at (916) 365-8700 x 102.

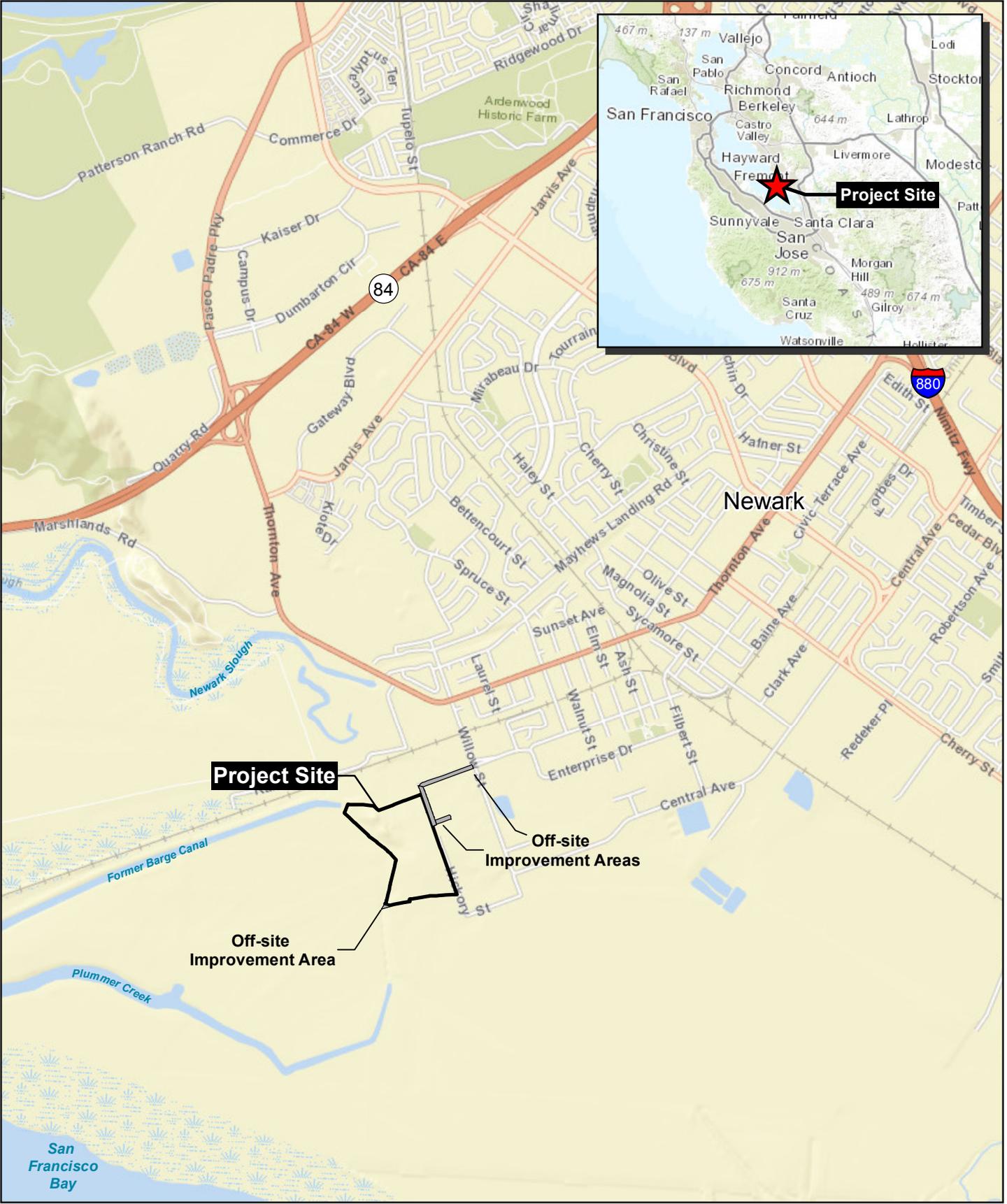
Sincerely,

Stephen Stringer
Senior Biologist, Certified Arborist

Attachments:

- Attachment A. Project Location Map
- Attachment B. Aerial Map
- Attachment C. Project Design
- Attachment D. Arborist Survey Map
- Attachment E. Arborist Survey Data Form

S:\PROJECTS\DATA\ALL\DATA\T-02_GatewayStation\CEQA\GIS\MXD\Biological\Figures June 2015\Figure 1_Regional Location Map_offsite_2015.06.09.mxd DAT 02 06/09/15 - MF

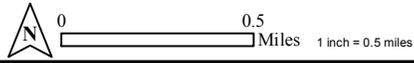


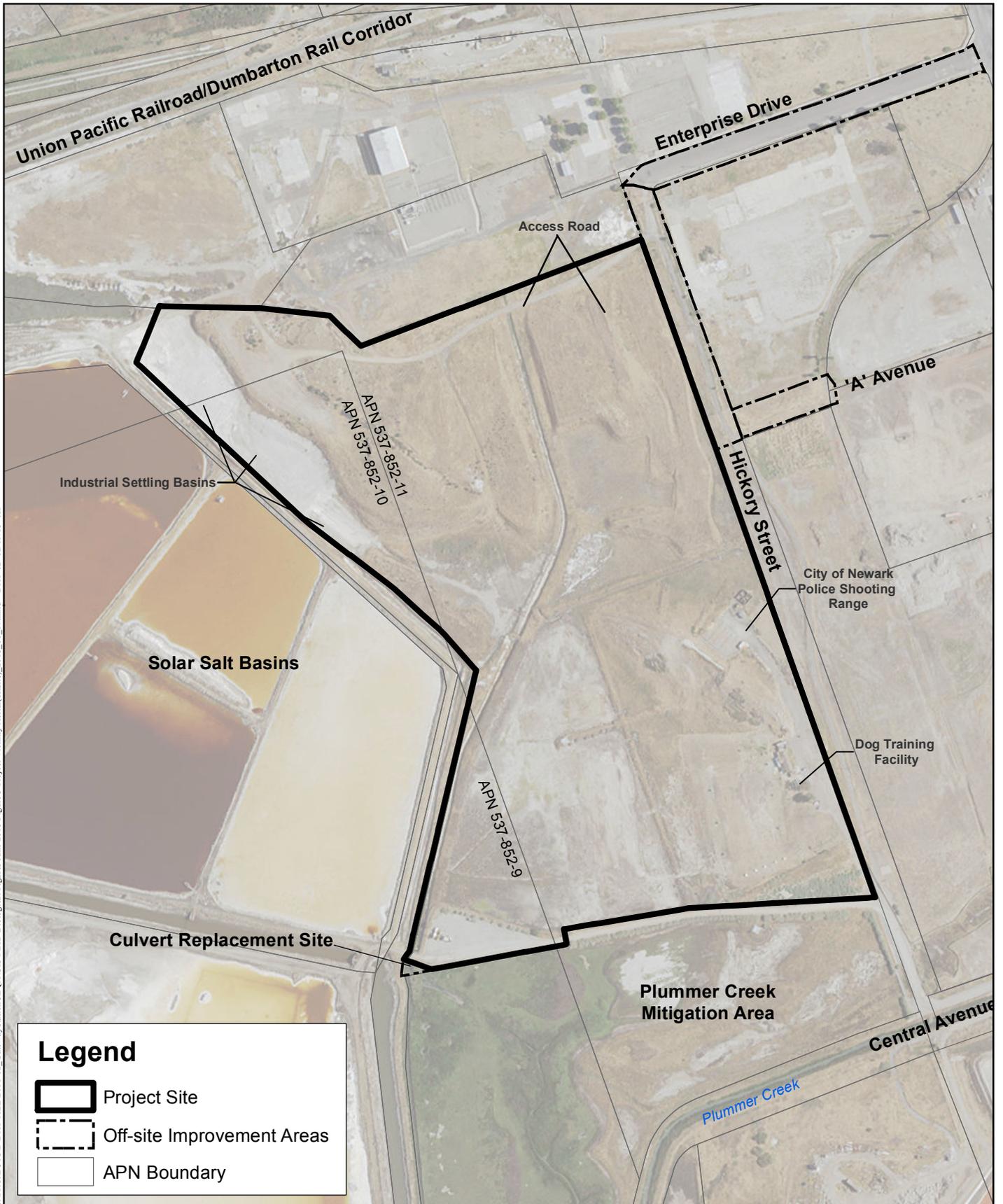
Base Map: USGS, ESRI 2014 Map Date: 06-09-2015

Site and Vicinity Map

GATEWAY STATION WEST

Attachment A





S:\PROJECTS\DAT-ALL\DA T-02_GatewayStation\CEQA GIS\MXD\Biological Figures June 2015\Figure 3 Project Vicinity Aerial(offline)_2015_06_17.mxd DAT-02_02/19/15 -JH

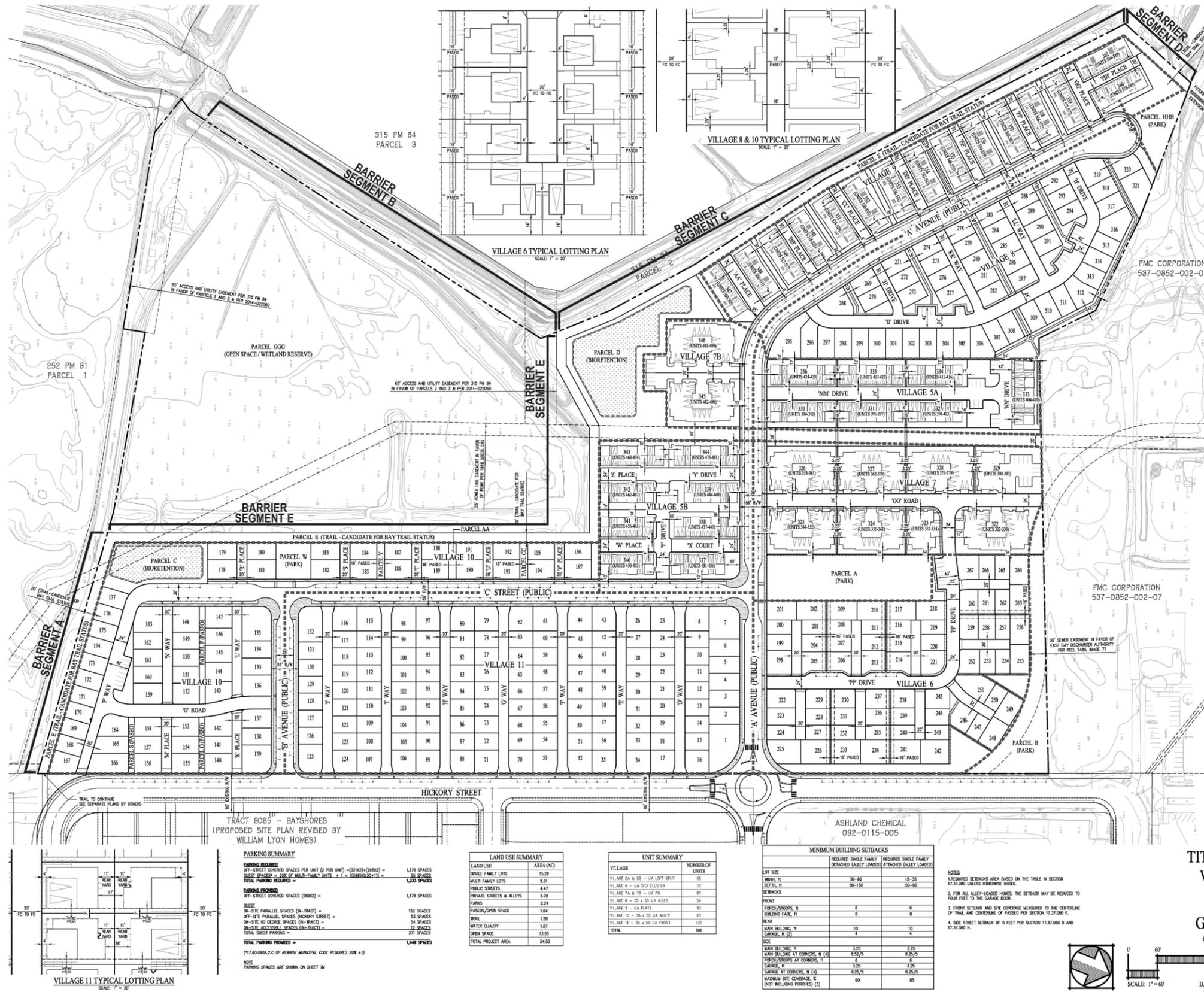
Map Date: 06-17-2015

Aerial Map

GATEWAY STATION WEST

Attachment B

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GENERAL NOTES:

- OWNER/DEVELOPER:** DUMBARTON AREA 2, LLC
500 LA GONDA WAY, SUITE 102
DANVILLE, CA 94526
CONTACT: GLENN BROWN
(925) 362-3749
- ENGINEER:** CARLSON, BARBEE & GIBSON, INC.
2633 CAMINO RAMON, SUITE 350
SAN RAMON, CA 94583
CONTACT: GREG MILLER
(925) 866-0322
- SOILS ENGINEER:** BERLOGAR, STEVENS & ASSOCIATES
5587 SUNOL BOULEVARD
PLEASANTON, CA 94566
CONTACT: FRANK BERLOGAR
(925) 484-0220
(925) 846-9645 (FAX)
- EXISTING USE:** LIGHT INDUSTRIAL
- SUBDIVISION AREA:** 54.53±
DEVELOPABLE AREA: 41.0±
- NUMBER OF UNITS:** 589 UNITS
- THIS PROPERTY LIES IN THE JURISDICTION OF:**
 - FIRE PROTECTION:** CITY OF NEWARK FIRE PROTECTION DISTRICT
 - DOMESTIC WATER:** ALAMEDA COUNTY COUNTY WATER DISTRICT
 - SANITARY SEWER:** UNION SANITARY DISTRICT
 - STORM DRAIN WITHIN STREETS, LANES & PASEOS:** CITY OF NEWARK (SDE)
 - STORM DRAIN WITHIN PRIVATE YARDS:** PRIVATELY MAINTAINED BY HOMEOWNERS (PSDE)
 - GAS & ELECTRIC SERVICE:** PACIFIC GAS & ELECTRIC
 - TELEPHONE SERVICE:** AT&T
- ROADWAYS AND PARCELS:** UNLESS OTHERWISE NOTED (I.E. PUBLIC) ALL ROADWAYS AND PARCELS ARE TO BE MAINTAINED BY THE HOA ESTABLISHED WITH THE PROJECT. PUBLIC ACCESS EASEMENTS WILL BE DEDICATED OVER PARCEL E FOR PUBLIC USE.
- PROPOSED LAND USE SUMMARY:** SEE TABLE (THIS SHEET)
- ASSESSORS PARCEL NUMBERS:** 537-0852-009
537-0852-010
537-0852-011
- BENCHMARK:** CITY OF NEWARK OFFICIAL BENCHMARK NO. 62, ALSO BEING AN ALAMEDA COUNTY BENCHMARK, THE TOP OF CURB AT STORM WATER INLET AT THE NORTH-EAST CORNER OF THORNTON AVENUE AT WILLOW STREET, ELEVATION TAKEN AS 11.39 (NAVD 88) (8.661 NAVD 29 PER CITY OF NEWARK RECORDS).
- TOPOGRAPHY:** PREPARED BY HJM GEOSPATIAL, INC. DATED MAY 2005
- FLOOD ZONE:** ZONED X AND AE
FLOOD INSURANCE RATE MAP (FIRM)
COMMUNITY PANEL NUMBER: 060009 0443 G
- THIS PROJECT MAY BE BUILT IN PHASES AND MULTIPLE FINAL MAPS MAY BE FILED. A PHASING PLAN WILL BE PROVIDED TO THE CITY OF NEWARK PRIOR TO FINAL MAP APPROVAL.**
- LOTS 1 - 321 WILL BE RESIDENTIAL LOTS
LOTS 322 - 361 (UNITS 322-589) WILL BE CONDOMINIUM UNITS.**
- LOT DIMENSIONS AND AREAS ARE APPROXIMATE AND ARE ROUNDED TO THE NEAREST WHOLE NUMBER. EXACT DIMENSIONS AND AREAS WILL BE PROVIDED ON THE FINAL MAP**
- ALL BUILDINGS SHALL BE EQUIPPED WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 15.09.020.G OF THE NEWARK MUNICIPAL CODE.**
- GRADING SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL DESIGN.**
- ALL UTILITIES SHOWN ARE TO BE USED AS A GUIDE AND MAY CHANGE DURING FINAL DESIGN.**

**TITLE SHEET AND SITE PLAN
VESTING TENTATIVE MAP
TRACT 8099
GATEWAY STATION WEST**

CITY OF NEWARK ALAMEDA COUNTY CALIFORNIA

PARKING SUMMARY

PARKING REQUIRED:
OFF-STREET COVERED SPACES PER UNIT (2 PER UNIT) = (521X)(2) = 1,042 SPACES
GUEST SPACES = ONE (2) MULTIFAMILY UNITS = 2 SPACES
TOTAL PARKING REQUIRED = 1,044 SPACES

PARKING PROVIDED:
OFF-STREET COVERED SPACES (DRIVE) = 1,178 SPACES
GUEST SPACES = ONE (2) MULTIFAMILY UNITS = 2 SPACES
ON-SITE PARALLEL SPACES (IN-TRACT) = 153 SPACES
OFF-SITE PARALLEL SPACES (HICKORY STREET) = 53 SPACES
ON-SITE ACCESSIBLE SPACES (IN-TRACT) = 13 SPACES
TOTAL GUEST PARKING = 273 SPACES
TOTAL PARKING PROVIDED = 1,448 SPACES

(174.80) AREA 2.C OF NEWARK MUNICIPAL CODE REQUIRES 20% (+)

NOTE: PARKING SPACES ARE SHOWN ON SHEET IV

LAND USE SUMMARY

LAND USE	AREA (AC)
SINGLE FAMILY LOTS	15.29
MULTI-FAMILY LOTS	8.31
PUBLIC STREETS	4.47
PRIVATE STREETS & ALLEYS	3.38
PARKS	2.24
PASEOS/OPEN SPACE	1.64
TRAIL	1.58
WATER QUALITY	1.87
OPEN SPACE	13.53
TOTAL PROJECT AREA	54.53

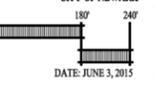
UNIT SUMMARY

VILLAGE	NUMBER OF UNITS
VILLAGE 6 - 25' X 50' UA FRONT	98
VILLAGE 7A & 7B - UA FRONT	72
VILLAGE 8 - 25' X 50' UA ALLEY	80
VILLAGE 9 - UA FRONTS	54
VILLAGE 10 - 30' X 50' UA ALLEY	90
VILLAGE 11 - 35' X 50' UA FRONT	132
TOTAL	686

MINIMUM BUILDING SETBACKS

LOT SIZE	REQUIRED SINGLE FAMILY DETACHED (ALLEY LOADED)	REQUIRED SINGLE FAMILY ATTACHED (ALLEY LOADED)
LOT WIDTH, FT	30-60	15-30
DEPTH, FT	30-100	30-90
SETBACKS		
FRONT		
PORCH/STOOPS, FT	6	6
BUILDING FACE, FT	6	6
REAR		
MAIN BUILDING, FT	10	10
GARAGE, FT (3)	4	4
SIDE		
MAIN BUILDING, FT	3.25	3.25
MAIN BUILDING AT CORNERS, FT (3)	8.25/5	8.25/5
PORCH/STOOPS AT CORNERS, FT	3.25	3.25
GARAGE, FT	8.25/5	8.25/5
GARAGE AT CORNERS, FT (4)	8.25/5	8.25/5
MAXIMUM SITE COVERAGE, % (NOT INCLUDING PORCHES) (5)	60	85

- NOTES:**
- REQUIRED SETBACKS AREA BASED ON THE TABLE IN SECTION 17.37.060 UNLESS OTHERWISE NOTED.
 - FOR ALL ALLEY-LOADED HOMES, THE SETBACK MAY BE REDUCED TO FOUR FEET TO THE GARAGE DOOR.
 - FRONT SETBACK AND SITE COVERAGE MEASURED TO THE CENTERLINE OF TRAIL AND CENTERLINE OF PASEOS PER SECTION 17.37.060 F.
 - SIDE STREET SETBACK OF 5 FEET FOR SECTION 17.37.060 D AND 17.37.060 F.



DATE: JUNE 3, 2015

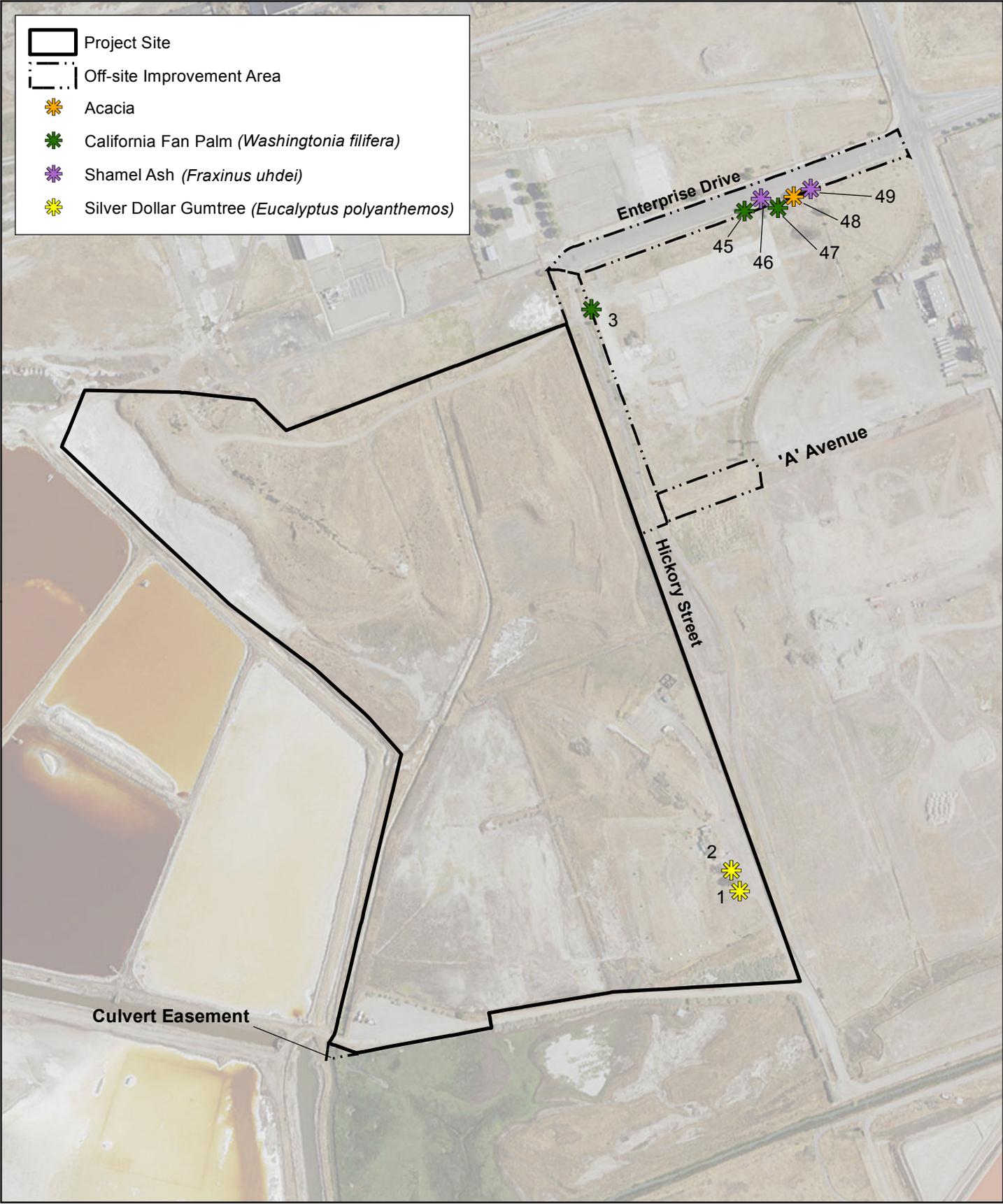


Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS - SURVEYORS - PLANNERS
2633 CAMINO RAMON, SUITE 350
SAN RAMON, CALIFORNIA 94583
(925) 866-0322
www.cbgi.com

TM-1
OF 8 SHEETS

Source: Carlson, Barbee & Gibson, Inc. 2015

S:\PROJECTS\ID\DAT-ALL\DAT-01_CargillGIS\MXD\Arborist survey\Gateway Station_Arborist Survey_Attachment C_150624 - Copy.mxd



Base Map: ESRI (2014) Map Date: 06-24-2015

Tree Location Map

Project Name: Gateway Station Project Project Number: DAT-01Arborist Name: Stephen StringerDate: 12-11-2013; 10-20-2014; 6-21-2015Page: 1

Vigor categories: Excellent (E); Good (G); Fair-Good (F-G): Fair (F; dead branches, burns, rot, insects, etc.; but will survive more than 5 years): Fair-Poor (F-P): Poor (P; likely to die within 5 years)

Tag #	Species	Diameter* (inches)	Height** (feet)	Dripline** (feet)	Vigor	Comments
1	<i>Eucalyptus polyanthemos</i>	19	45	14	G	Surveyed 12-11-2013: single trunk, not tagged
2	<i>E. polyanthemos</i>	19	45	18	G	Surveyed 12-11-2013: single trunk, not tagged
3	<i>Washingtonia filifera</i>	12	25	5	F	Surveyed 10-20-2014: single trunk, not tagged
45	<i>W. filifera</i>	24	20	5	F	Surveyed 6-21-2015; single trunk, tagged
46	<i>Fraxinus uhdei</i>	10	22	12	F	Surveyed 6-21-2015; tree trimmed for power lines, some dead branches, single trunk, tagged
47	<i>W. filifera</i>	19	30	10	G	Surveyed 6-21-2015; single trunk, tagged
48	<i>Acacia sp.</i>	15	25	12	F-G	Surveyed 6-21-2015; some lower branches removed, one main branch is broken, single trunk, tagged
49	<i>F. uhdei</i>	6	9	8	P	Surveyed 6-21-2015; half of the tree branches are dead, single trunk, tagged

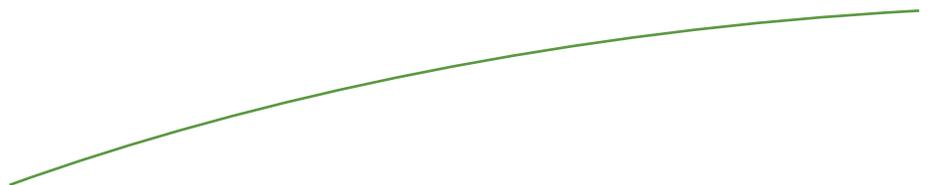
*cumulative trunk diameter measured at four feet above ground level

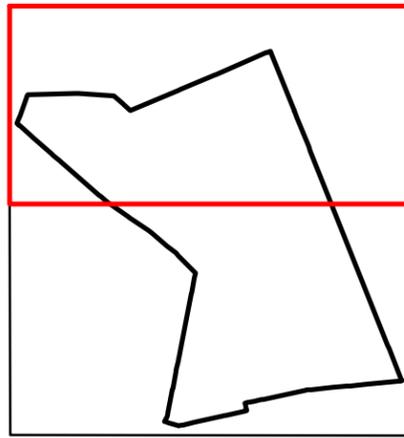
**visually estimated



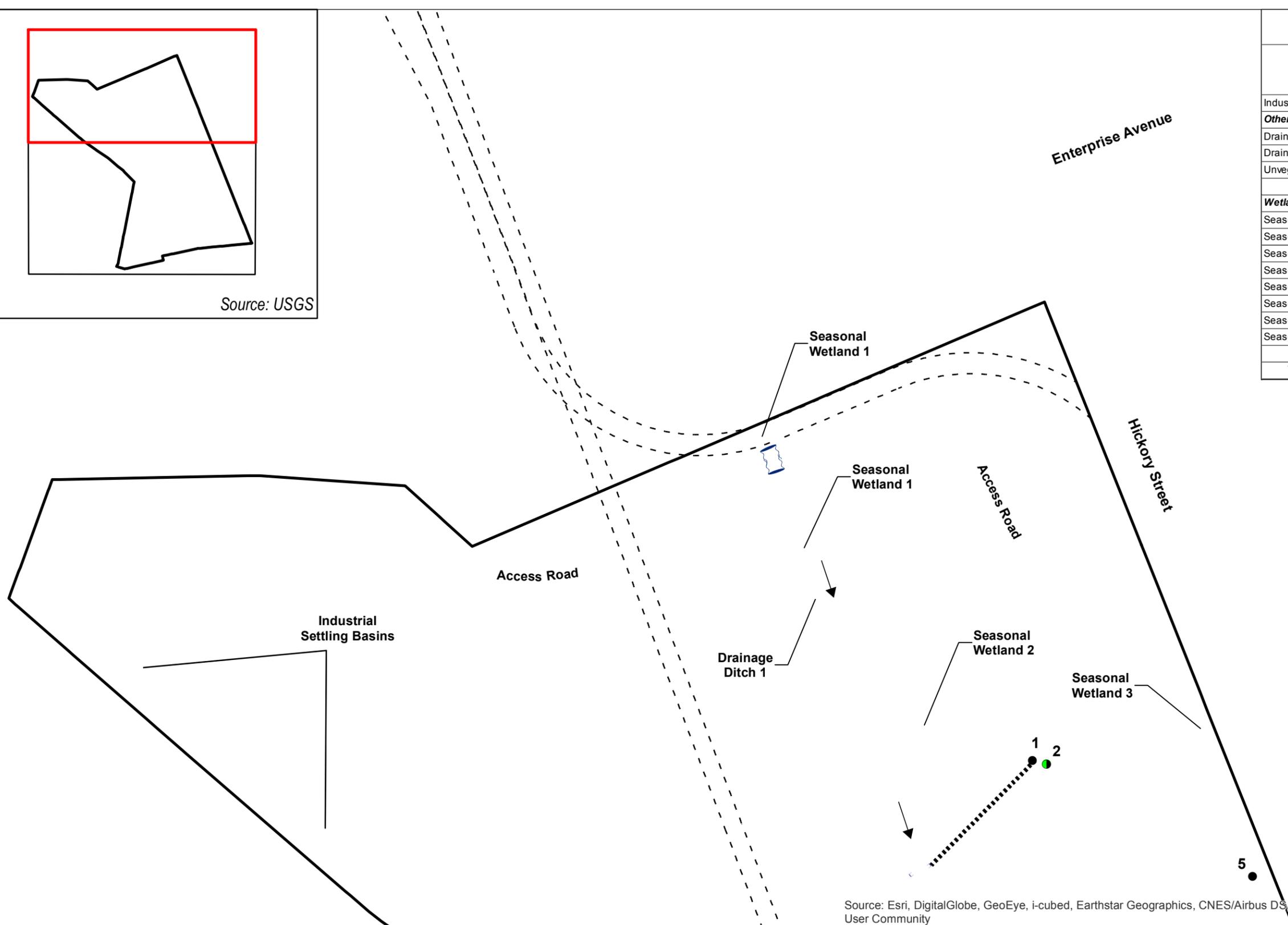
Appendix B

DELINEATION OF POTENTIAL
JURISDICTIONAL WATERS OF THE UNITED
STATES, PARCEL 1 OF PARCEL MAP 9837,
CITY OF NEWARK, CALIFORNIA





Source: USGS



Acreages of Potential Jurisdictional Waters of the U.S. in the Study Area				
Feature	Length (Feet)	Average Width (Feet)	Area	
			acres	square feet
Industrial Settling Basins	--	--	0.17	7,519
Other Waters of the U.S.				
Drainage Ditch 1	2,009	8.07	0.37	16,208
Drainage Ditch 2	700	5.23	0.08	3,663
Unvegetated Pondered Depression	--	--	0.39	16,931
<i>Subtotal Other waters of the U.S.</i>			0.84	36,802
Wetlands				
Seasonal Wetland 1	--	--	0.41	17,954
Seasonal Wetland 2	--	--	1.09	47,566
Seasonal Wetland 3	--	--	0.38	16,630
Seasonal Wetland 4	--	--	0.93	40,485
Seasonal Wetland 5	--	--	0.38	16,467
Seasonal Wetland 6	--	--	0.27	11,839
Seasonal Wetland 7	--	--	10.76	468,800
Seasonal Wetland 8	--	--	0.01	290
<i>Subtotal Wetlands</i>			14.23	620,031
Total Acreage of Potential Waters of the U.S. in the Project Site			15.25	664,352

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



USACE REGULATORY FILE #:
VERIFIED BY: TBD
DATE OF VERIFICATION: TBD

REVISIONS

DATE	DESCRIPTION	BY
1/28/14	First Submittal	S. Neudecker
05/29/15	Revised Submittal	S. Neudecker

DRAWN BY: M. Fremont, D.Caziarc
DELINEATORS: S. Stringer, C. Silvester
DATE OF FIELDWORK: August 6 and 13, 2013
DATE OF AERIAL PHOTOGRAPH: October 26, 2010 (Esri)



NOTES: The boundaries and jurisdictional status of all waters shown on this map are preliminary and subject to verification by the U.S. Army Corps of Engineers

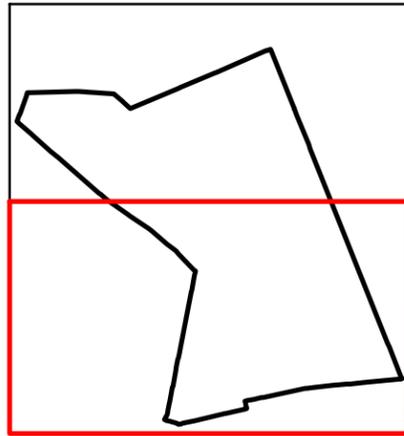
- Study Area (54.53 acres)
- Wetland data point
- Upland data point
- Culvert
- Excavated swale
- Utility and Maintenance Easements
- Seasonal Wetland
- Drainage Ditch
- Unvegetated Pondered Depression
- Industrial Settling Basins
- Direction of flow

JURISDICTIONAL DELINEATION

Parcel 1 of Parcel Map 9837

City of Newark, California

June 1, 2015



Source: USGS

Settling Basin

Seasonal Wetland 4

Unvegetated Pondered Depression

Seasonal Wetland 1

Drainage Ditch 1

Sheet Pile Barrier

Seasonal Wetland 5

Drainage Ditch 2

Seasonal Wetland 7

Seasonal Wetland 6

Seasonal Wetland 8

Hickory Street

Acreages of Potential Jurisdictional Waters of the U.S. in the Study Area

Feature	Length (Feet)	Average Width (Feet)	Area	
			acres	square feet
Industrial Settling Basins	--	--	0.17	7,519
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Drainage Ditch 1	2,009	8.07	0.37	16,208
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Seasonal Wetland 7	--	--	10.76	468,800
Seasonal Wetland 8	--	--	0.01	290
Subtotal Wetlands			14.23	620,031
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Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the-GIS User Community

HELIX
Environmental Planning

USACE REGULATORY FILE #:
VERIFIED BY: TBD
DATE OF VERIFICATION: TBD

REVISIONS

DATE	DESCRIPTION	BY
1/28/14	First Submittal	S. Neudecker
05/29/15	Revised Submittal	S. Neudecker

DRAWN BY: M. Fremont, D.Caziarc
DELINEATORS: S. Stringer, C. Silvester
DATE OF FIELDWORK: August 6 and 13, 2013
DATE OF AERIAL PHOTOGRAPH: October 26, 2010 (Esri)



NOTES: The boundaries and jurisdictional status of all waters shown on this map are preliminary and subject to verification by the U.S. Army Corps of Engineers

- Study Area (54.53 acres)
- Wetland data point
- Upland data point
- Culvert
- Excavated swale
- Utility and Maintenance Easements
- Seasonal Wetland
- Drainage Ditch
- Unvegetated Pondered Depression
- Industrial Settling Basins
- Direction of flow

JURISDICTIONAL DELINEATION

Parcel 1 of Parcel Map 9837

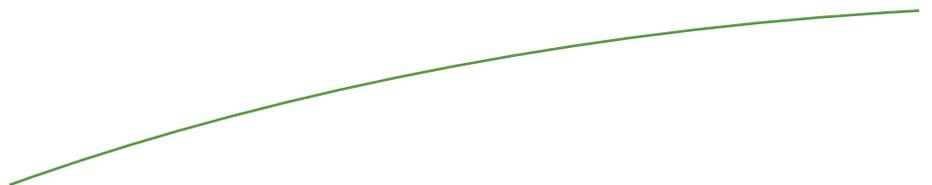
City of Newark, California

June 1, 2015



Appendix C

PARCEL 1 OF PARCEL MAP 9837, NEWARK,
CALIFORNIA: HABITAT ASSESSMENT FOR
SALT MARSH HARVEST MOUSE





April 1, 2014

Dr. Stephen Neudecker
313 Glenn Creek Drive, Suite 100
Bonita, CA 91902-4279

**SUBJECT: Parcel 1 of Parcel Map 9837, Newark, California:
Habitat Assessment for Salt Marsh Harvest Mouse**

Dear Dr. Neudecker,

Per your request, Dr. Gretchen Padgett-Flohr, a 10(a)(1)(A) Salt Marsh Harvest Mouse-permitted mammalogist (PRT # TE006112-6) conducted a habitat assessment for Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*) on Monday, March 17, 2014, at the property known as Parcel 1 of Parcel Map 9837 (Property) located in Alameda County, California. This report summarizes the results of the habitat assessment for the Property.

PROPERTY DESCRIPTION

Parcel 1 consists of approximately 55-acres, located west of Hickory Street in Newark (**Figure 1**), California, and is characterized by rolling topography with an average elevation of approximately 8 to 10 feet or more above sea level (amsl). The Property is adjacent to Plummer Creek and the Wildlands' Plummer Creek Mitigation Bank, but is no longer subject to tidal influence. Parcel 1 is located in the southeastern portion of the San Francisco Bay in the City of Newark, California and is within the Dumbarton Transit Oriented Development Specific Plan Area, which is comprised of former industrial parcels planned for future transit-oriented development. The Property is bounded to the north by a former industrial facility owned and operated by FMC Corporation, to the east by former industrial parcels now vacant, to the south by the Wildlands' Plummer Creek Mitigation Bank, and to the west by active salt production basins used in the solar salt production process. The Don Edwards National Wildlife Refuge is located to the west and north of the salt ponds that are immediately west of the Property (**Figure 1**). The San Francisco Bay is approximately 1.9 miles west of the site.

Terrain on the Property is characterized by a series of natural hills, soil stockpiles - placed in upland areas, and constructed basins. The surface elevations range from approximately 8 to 10 feet amsl, and the Property also contains a bedrock outcrop approximately 26 feet amsl, and stockpile storage areas that reach 30 to 35 feet amsl. A bedrock outcrop is located in the southeastern portion of the site, and is comprised of serpentine which contains chrysotile, a form of naturally occurring asbestos.

Historically, a portion of the Property was farmed and other areas have had industrial and commercial uses for years (RBF Consulting 2010). Those activities have included the construction and operation of industrial settling basins associated with the manufacture of magnesia-containing products, excavation of ditches, removal of rock, and the placement of material stockpiles in upland areas. Access roads circumnavigate the Property, and large areas are used for equipment parking and/or staging. Construction equipment and materials are present in the northern portion. The settling basins in the northwestern portion of the Property were constructed primarily in uplands as part of the industrial processes that settle out salts from processing water from the former FMC facility. Two constructed ditches are present: Drainage Ditch 1 runs generally north/south through the Property, and Drainage Ditch 2 runs east/west and connects to the north/south ditch. Utility and maintenance easements transect the Property.

Before World War II, a recreational pistol range was present in the southeastern portion of the Property and following World War II, from 1969 to 1995, the Newark Sportsmen's Club operated a skeet shooting range. The Property has also been subject to several clean up actions completed under State supervision. In 2001, the Property owner entered into a voluntary cleanup agreement with the Regional Water Quality Control Board (RWQCB) and several inches of topsoil containing lead and asphaltic skeet targets containing polycyclic aromatic hydrocarbons were excavated and disposed of offsite. The areas were left to recover naturally and RWQCB certified case closure in 2004. As a result of past and the present uses, the Property is a known brownfield site that is constrained by environmental contamination.

The City of Newark has leased an area in the southeastern portion of the Property for use as a police pistol range since 1975, but use of lead shot was discontinued approximately six to eight years ago. The City of Newark Police Department is using the Property for a pistol range and as a dog-training facility, which are the only active, current uses of the Property. Shotgun shells and skeet fragments were observed in the southern portion of the Property during wetland delineation fieldwork on August 6 and 13, 2013. Structures associated with the dog-training facility are present in the southeast portion of the Property as well as parking areas, pet relief areas, and mowed/maintained training areas. Dog-training activities were observed during the site visits.

SPECIES OF INTEREST

Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*)

Salt Marsh Harvest Mouse (SMHM) is a federal- and state-listed endangered species endemic to the salt and brackish marshes of the San Francisco Bay and the Napa, Petaluma, San Pablo, and Suisun Bay salt marshes. Current literature suggests that SMHM evolved in the San Francisco Bay Area from parental stock of harvest mice approximately 25,000 years ago (Nelson *et al.* 1984).



Figure 1: Parcel 1 Vicinity Map

Harvest mice (*Reithrodontomys* spp.) in general, are small, delicate mice with nearly nude tails



and the genus is easily identified by the distinctive pronounced groove on the upper incisors (Jameson and Peters 1986), which other small rodent genera [e.g. house mouse (*Mus musculus*)] do not exhibit. SMHM measure approximately 118 to 175 mm in total (adult) length and display a venter that varies from white to red throughout the range of the species (Fisler 1965). The average lifespan in the wild is approximately one year, although SMHM have been known to live for up to three years under laboratory conditions (Fisler 1965).

The listing of *Reithrodontomys raviventris* includes two subspecies: *Reithrodontomys raviventris raviventris* (the southern subspecies) and *Reithrodontomys raviventris halicoetes* (the northern subspecies). *R. r. halicoetes* is found in Marin County, and throughout the Petaluma, Napa and Suisun Bay marshes. The North Bay marshes inhabited by this subspecies experience a higher variation in salinity levels, but have a lower average salinity than that found in the South San Francisco Bay. The North Bay has experienced an increase in salinity with a corresponding increase in halophytic vegetation [e.g. pickleweed (*Salicornia* [= *Sarcocornia*] *virginica*)] over the last 150 years, due to diking and filling of the marshes and reduced river flows into the Delta from upstream dams and water diversions of the San Joaquin and Sacramento Rivers.

Evolving under slightly different environmental conditions than its southern counterpart, *R. r. halicoetes* exhibits slightly different characteristics and is genetically distinct from the disjunct southern subspecies (Fisler 1965). Two important behavioral and physiological differences between the two subspecies are that *R. r. halicoetes* has the ability to drink seawater, but does not have the ability to become torpid. In addition to these behavioral and physiological differences, *R. r. halicoetes* does not have the red belly that gave the southern subspecies its name. The northern subspecies generally has a white-gray/white venter, with some clinal variation and is therefore much more challenging to differentiate from the sympatric western harvest mouse (*R. megalotis*). In general, the North Bay subspecies has a tail-to-body ratio that is greater than 100 percent, although there is a certain amount of variation in this particular trait. The Collinsville population of SMHM is the most extreme case, exhibiting a tail-to-body ratio in the 115 to 130 percent range in one study conducted in the area (G. Padgett-Flohr, unpub. data).

In contrast, the South Bay, where the southern subspecies (*R. r. raviventris*) is found, has little variation in salinity, but the average salinity level is much higher than that in the North Bay. *R. r. raviventris* does not drink sea water, but it does possess the ability to enter a state of torpor (Fisler 1965). The southern subspecies was named for its distinctive red belly, although this characteristic can show variation and is consistent only in the Alviso area of the southernmost part of the Bay. Tail-to-body ratios of the southern subspecies tend to fall under 100 percent, although this measurement can have large variation and is not considered to be a diagnostic characteristic.

Past studies have shown that optimal habitat for *R. raviventris* is a thick cover of pickleweed complexly interwoven with other halophytic plants such as fat hen (*Atriplex patula*), and alkali heath (*Frankenia grandifolia*) (Shellhammer *et al.* 1982, Shellhammer 1984, and Johnson *et al.* 1984). In diked marshes particularly, SMHM are highly dependent on plant cover. In addition to vegetation density, the salinity level in pickleweed is also an important component of the microhabitat and mid-range levels of salinity in pickleweed has been shown to be correlated with the presence of SMHM in diked marshes (Padgett-Flohr and Isakson 2003). SMHM were found to be absent from sites with low salinities, and infrequent in areas where pickleweed was high in salinity (Padgett-Flohr and Isakson 2003). Pickleweed height was formerly considered to be a key habitat requirement of SMHM; however, during her study conducted at New Chicago Marsh in 1996, Dr. Padgett-Flohr tested this variable using a random sampling scheme and found that this correlation was not supported (Padgett-Flohr SJSU Senior Thesis 1996). There was no significant association between SMHM and pickleweed height. Geissel *et al.* (1988) found that the height of a pickleweed plant is inversely correlated to the salinity level within the plant, meaning that the more saline the plant the shorter the plant. As Padgett-Flohr and Isakson demonstrated (2003), SMHM presence is statistically correlated with pickleweed containing a mid-range level of salinity (500-699 mmol/kg Cl⁻). Mid-range levels of salinity can typically only be achieved by regular tidal influence. Diked marshes lacking tidal influence become either freshwater or hypersaline (Zedler and Adam 2002; Gedan *et al.* 2009) and do not provide the salinity levels that SMHM need or can tolerate.

SMHM therefore, require habitat that is dominated by dense, contiguous stands of halophytic vegetation that retains a mid-range level of salinity. Recurrent, but shallow flooding by saline water is likely needed to maintain habitat conditions that favor SMHM (Padgett-Flohr and Isakson 2003; USFWS 2013).

METHODS

Background and Research

The California Natural Diversity Database (CNDDDB) was queried to identify all documented occurrences of SMHM within 5 miles of the Property over the last 30 years.

Field Visit

Dr. Padgett-Flohr conducted a site visit and habitat assessment of the Property on March 17, 2014. The entire site was surveyed on foot and assessed for potential suitability for SMHM.

RESULTS

Background and Research

The CNDDDB documents two occurrences of SMHM within 1 mile of the Property. One occurrence was documented in 2001 located 0.41 mile from the Property at the San Francisco

National Wildlife Refuge (NWR) at Dumbarton Point south of Highway 84 and one occurrence was documented in 1989 located 0.56 mile from the Property on the Mayhews Landing site located east of Jarvis Road and Thornton Avenue. Seventeen additional occurrences are reported from 1984 and 1991 ranging from 1.17 to 4.85 miles from the Property as shown in **Figure 2**.

Field Visit

The Property is a highly altered area that is not tidally influenced, and consists predominantly of diked, upland habitat largely dominated by non-native grasses and scattered annual pickleweed (*S. europaea*), reflecting its past historical anthropogenic disturbances. Small, remnant, sparse patches of perennial pickleweed and alkali heath are present scattered within the invasive upland vegetation as shown in Attachment A: Photograph 1. The densest stands of pickleweed are present within the drainage ditches representing narrow bands of pickleweed along either side of each channel as shown in Attachment A: Photograph 2. Where present, pickleweed is sparse and short.

DISCUSSION

The Property does not contain suitable habitat to support SMHM. The site is not subject to tidal influence and has a predominance of upland, non-native grasses with a small amount of pickleweed that is short in stature. The sparse, scattered remnant stands of pickleweed are too small, and fragmented to provide the habitat and food resource that SMHM would need to colonize the Property. SMHM use pickleweed not only for cover, but as their primary food source as well. In addition, SMHM occur infrequently in areas with reduced salinity. Dense contiguous stands of pickleweed are not present on the Property, salinity is reduced as a result of the absence of tidal exchange; thus, SMHM would not be expected to occur on the Property nor would it not be expected to support SMHM in its current condition.

The Property is isolated from areas of high-quality SMHM habitat from which the species could disperse if habitat quality were to increase. CNDDDB reports SMHM occurring 0.41 mile west of the Property; however, the poor quality of the habitat on the Property, combined with the barriers presented by roads, fencing, and associated vegetation, and the superior quality of the habitat present on NWR lands make it extremely unlikely that SMHM would disperse on to the Property.

In conclusion, it is my professional opinion that Parcel 1 of Parcel Map 9837 does not contain habitat suitable to support SMHM.



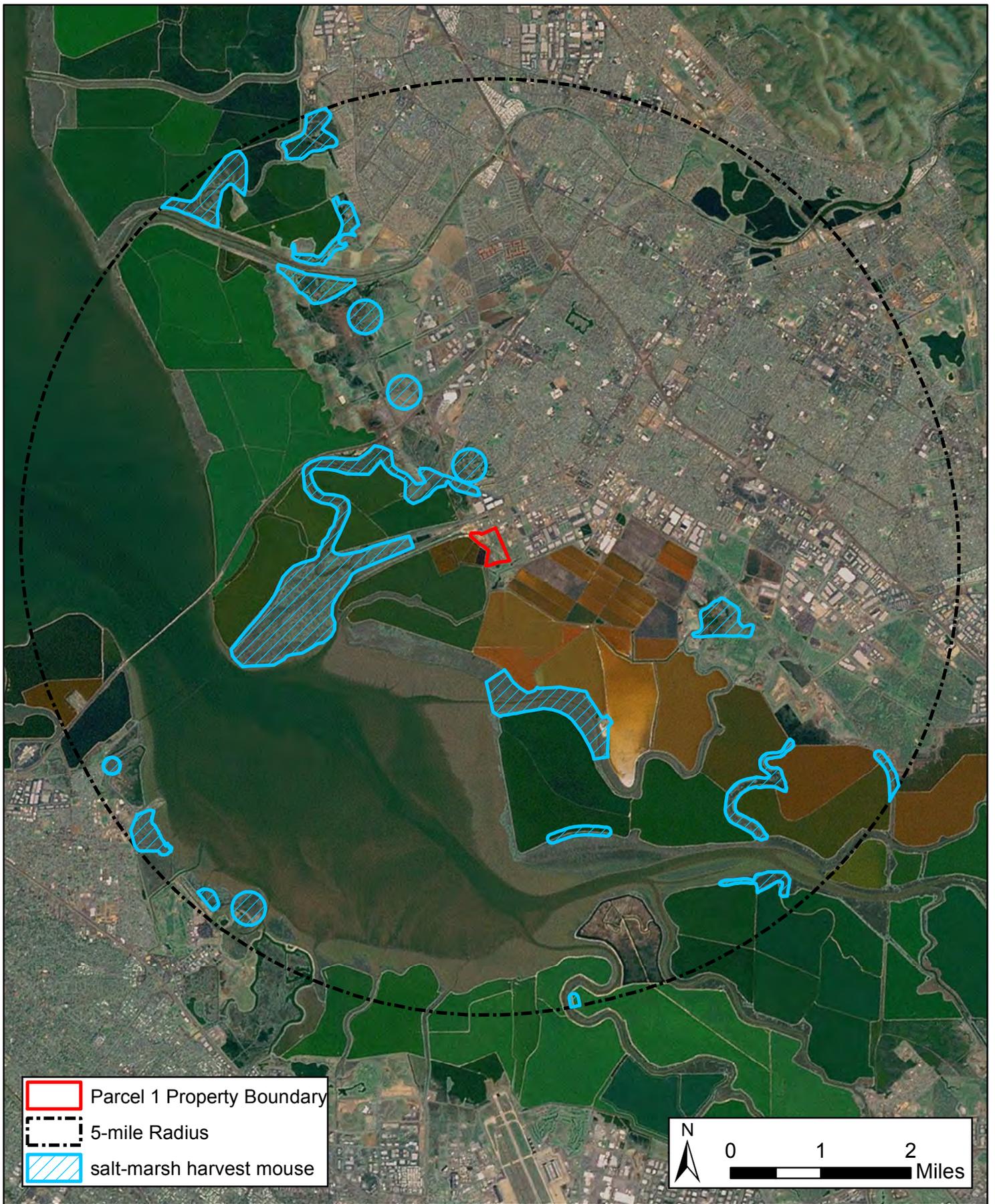


Figure 2: CNDDDB Documented Occurrences of Salt Marsh Harvest Mouse Within 5-miles of Parcel 1 Property

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Attachment A: Representative Photographs

Photographs



Photograph 1:
Scattered,
fragmented
stands of
remnant
pickleweed.

March 17, 2014



Photograph 2:
Drainage
Channel on the
Property, best
pickleweed
present on the
Property, but still
inadequate
habitat for salt
marsh harvest
mouse.

March 17, 2014



Photograph 3:
Non-native annual grassland forms the majority of vegetation present on the Property.

March 17, 2014



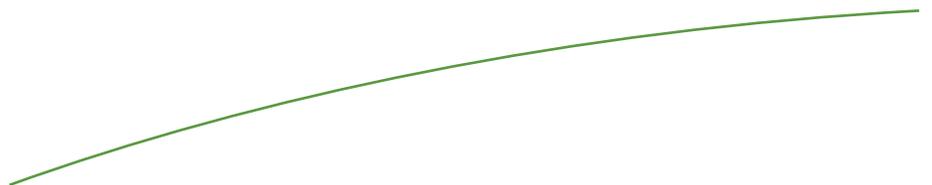
Photograph 4:
Large, expansive barren ground present in western portion of the Property and non-native annual grassland form barriers to potential movement of small mammals.

March 17, 2014



Appendix D

BURROWING OWL SURVEY REPORT,
PARCEL 1 OF PARCEL MAP 9837,
CITY OF NEWARK, CALIFORNIA



HELIX Environmental Planning, Inc.
11 Natoma Street
Suite 155
Folsom, CA 95630
916.365.8700 tel
www.helixepi.com



July 2, 2014

Mr. Glenn Brown
VP Entitlements, Integral Communities
Dumbarton Area 2, LLC
500 La Gonda Way, Suite 202
Danville, CA 94526

RE: Burrowing Owl Survey Report Parcel 1 of Parcel Map 9837, City of Newark, California

On behalf of Dumbarton Area 2, LLC, HELIX Environmental Planning, Inc. (HELIX) conducted breeding season surveys for burrowing owl (*Athene cunicularia*) on the 54.53-acre Parcel 1 of Parcel Map 9837 property (Property) in the City of Newark, Alameda County, California. The surveys were conducted according to the guidelines prepared by the California Department of Fish and Wildlife (CDFW) in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). We understand that Dumbarton Area 2, LLC, may develop the site with transit-oriented mixed-uses, including residential and retail/commercial uses.

INTRODUCTION

The Property is within the Dumbarton Transit Oriented Development (TOD) Specific Plan area. A Final Environmental Impact Report (EIR; State Clearinghouse No. 2010042012) has been prepared and certified, and the Specific Plan has been adopted. For most parcels within the Specific Plan area (including Parcel 1 of Parcel Map 9837), the evaluation conducted for the EIR was programmatic. As detailed in the certified EIR, project-specific studies and documents consistent with the requirements of the California Environmental Quality Act (CEQA) are required for the Property prior to site development, including focused burrowing owl surveys. This report describes the methods used to conduct the burrowing owl surveys and summarizes the findings.

PROJECT LOCATION AND EXISTING CONDITIONS

The 54.53-acre Property is located in southwestern Alameda County within the City of Newark, California. Enterprise Drive (formerly Wells Avenue) terminates at the northeast corner of the study area, and the site is bounded by Hickory Street to the east and several saline basins associated with the solar salt production process west of the site. Figure 1 is a location map. Representative photographs of the Property are included as Attachment A.

The Property is within the Dumbarton TOD Specific Plan Area, which is comprised of former industrial parcels planned for future transit-oriented, mixed-use development. The Property is bounded to the north by a former industrial facility owned and operated by FMC Corporation, to the east by vacant and disturbed industrial parcels, to the south by the Wildlands' Plummer Creek Mitigation Bank, and to the west by active salt basins. The San Francisco Bay is approximately 1.9 miles west of the Property. Figure 2 is an aerial map of the Property and immediate vicinity.

Terrain on the Property is characterized by a series of natural hills; soil stockpile storage areas placed in upland areas; and constructed industrial basins. The surface elevations on the Property range from about 8 to 10 feet above mean sea level (amsl), with the exception of a rock outcrop that extends to approximately 26 feet amsl, and stockpile storage areas that reach 30 to 35 feet amsl. The rock outcrop is located in the southeastern portion of the site, and is comprised of serpentine bedrock that contains chrysotile, a form of naturally occurring asbestos.

The Property has been used in the past for industrial activities including the manufacture and storage of industrial (including toxic) chemicals, recreational uses, and police training. Those activities have resulted in the construction and operation of settling basins associated with the manufacture of magnesia, bromine, and gypsum products, excavation of ditches, removal of rock, and the placement of stockpile materials in upland areas. Access roads circumnavigate the site, and large areas are used for equipment parking/staging. Construction equipment and materials are present in the northern portion of the Property. The industrial settling basins in the northwest portion of the Property were constructed in uplands as part of the processes of the former FMC industrial facility of separating salts from process water (WRA 2013). Two constructed ditches are present in the Property; one of the ditches runs generally north/south through the site and the other runs east/west and connects to the north/south ditch.

Before World War II, a recreational pistol range was present in the southeastern portion of the Property. The Newark Sportsmen's Club operated a skeet shooting range there from 1969 to 1995. The City of Newark has leased an area in the southeastern portion of the Property for use as a police pistol range since 1975, but use of lead shot was discontinued approximately 6 to 8 years ago. The City of Newark Police Department is currently using the property for a pistol range and dog training facility. Some rifle and shotgun shells and skeet fragments were observed in the southern portion of the Property during fieldwork conducted by HELIX personnel on August 6 and 13, 2013. Structures associated with the dog training facility are located in the southeast portion of the Property as well as parking areas, and mowed/maintained training areas. Dog training activities were observed during the site visits.

The Property has also been subject to several clean up and remediation actions that have been completed under state supervision. In 2001, the owner entered into a voluntary cleanup agreement with the Regional Water Quality Control Board (RWQCB) and several inches of topsoil containing lead and polycyclic aromatic hydrocarbons (PAHs) were excavated and disposed of off site. The areas were left to recover naturally and the RWQCB certified case closure in 2004.

METHODS

Breeding season burrowing owl surveys were conducted according to the guidelines prepared by CDFW in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). The Property was surveyed four times during the burrowing owl breeding season by HELIX Senior Biologist Stephen Stringer. Mr. Stringer is familiar with burrowing owl and its local ecology and has participated in and independently conducted dozens of habitat assessments and presence/absence surveys for burrowing owl since 2003.

During each survey, the entire Property was surveyed with pedestrian transects spaced approximately 15 to 20 meters apart with stops every 100 meters or less to scan the surrounding area for burrowing owl presence with binoculars. All observed mammal burrows were searched for sign of recent use by burrowing owls such as excrement, feathers, and owl pellets. The dates and timing of the burrowing owl surveys are presented in Table 1 below.

Crepuscular surveys were timed to allow for a high detection probability and complete examination of the site. The dawn surveys commenced after morning civil twilight to allow ambient temperatures to increase to a level most suitable for burrowing owl detection and extended beyond 10 a.m. because of the amount of time required to comprehensively examine all of the mammal burrows on the site. During the first two morning surveys, a comprehensive survey of all of the mammal burrows on the site was conducted to search for owl sign around the openings of all burrows. The two subsequent dusk surveys then focused on searching the Property for the presence of burrowing owl. The evening surveys were conducted roughly between two hours before sunset until evening civil twilight.

Table 1 SURVEY DATES AND TIMING (all surveys conducted in 2014)				
SURVEY DATE	START TIME/ END TIME	START/ END TEMP (°F)	WIND SPEED DURING SURVEY (mph)	WEATHER DURING SURVEY
March 27	8:00 a.m./ 11:30 a.m.	51/56*	2.5-6	Partially overcast; cloud cover ranged from 50-60%
April 30	7:45 a.m./ 11:30 a.m.	71/73	0-1	Clear, calm, and sunny
May 29	6:30 p.m./ 8:30 p.m.	70/68	4-6	Partially overcast; cloud cover approximately 30%
June 20	6:30 p.m./ 8:30 p.m.	80/75	2-3	Mostly sunny; cloud cover approximately 25%

*Although the protocol calls for conducting the survey during warmer temperatures, based on the forecast it didn't seem like the project site would experience 70+ degree temps during the appropriate survey times prior to April 15th.

RESULTS

No burrowing owl or active burrow was observed on the Property during any of the survey events. However, the Property contains numerous ground squirrel (*Otospermophilus beecheyi*) burrows that could potentially be used by burrowing owl for roosting or nesting. In addition, during the burrowing owl survey on March 27, a mammal burrow was observed in the southern portion of the Property (see Figure 2) that had evidence of past use by burrowing owl, as evidenced by the presence of excrement and pellets. Based on the pellets and excrement, it appeared to have been used by a solitary burrowing owl for a relatively short period of time. The presence of spider webs across the entrance to the burrow and absence of recent signs of occupation indicated that the burrow was unoccupied at the time of the survey. During each consecutive burrowing owl survey, as well as during additional site visits by Mr. Stringer to conduct rare plant surveys on April 2 and attend an on-site interagency meeting on June 4, Mr. Stringer visited the burrow; there was no sign of further use by burrowing owl (fresh excrement, feathers, or pellets). The fact that no burrowing owl or sign of further use was observed at the burrow or elsewhere on the property during any subsequent surveys indicates that the burrow was briefly used by a solitary winter migrant in the past.

Possible burrowing owl predators observed in the project site and immediate vicinity included red-tailed hawk (*Buteo jamaicensis*) and barn owl (*Tyto alba*). No signs of burrowing owl predation were observed on the Property.

SUMMARY/CONCLUSION

This burrowing owl survey report fulfills the requirements of the Dumbarton Transit Oriented Development (TOD) Specific Plan EIR, specifically Mitigation Monitoring and Reporting Program (MMRP) Measure 4.3-3 (Western Burrowing Owls). Protocol surveys were conducted by a qualified biologist in accordance with CDFW's Burrowing Owl Staff Report (CDFG 2012). No burrowing owl or active burrow was observed on the Property, although one mammal burrow on the Property exhibited signs of past use by burrowing owl. The MMRP prescribes compensatory mitigation if a pair(s) of burrowing or unpaired resident burrowing owl is identified on the Property. Because the only evidence of burrowing owl on the Property was signs of potential past use by a solitary winter migrant, the MMRP requirement for compensatory mitigation would not be triggered by development on the Property.

Because a mammal burrow on the Property exhibited signs of past use by burrowing owl and the Property contains numerous suitable burrows, additional pre-construction surveys are warranted if ground disturbance/grading does not commence by July 20, 2014 (30 days from the last survey date) in order to prevent any potential impacts to burrowing owl as a result of site development.

If ground disturbance/grading commences after July 20, 2014 but prior to September 20, 2014, two surveys should be conducted in the 30 day period prior to any ground disturbance activities. If ground disturbance/grading does not commence by September 20, 2014, additional pre-construction burrowing owl and burrow surveys should be conducted 90 and 30 days in advance of project site disturbance (two surveys should be conducted 90 days before any ground disturbance and two surveys should be conducted in the 30 day period prior to any ground disturbance). If no burrowing owl pair(s) or resident burrowing owl is observed during any of the pre-construction surveys, no further protection or compensatory measures for burrowing owl would be required. If a burrowing owl pair(s) or resident burrowing owl is observed during pre-construction surveys, mitigation would be required as stated in the MMRP consisting of avoidance of burrows during the nesting season and compensatory mitigation for loss of habitat.

Feel free to contact me by phone at (916) 365-8712 or by email at StephenS@helixepi.com if you have any questions.

Sincerely,



Stephen Stringer
Senior Biologist

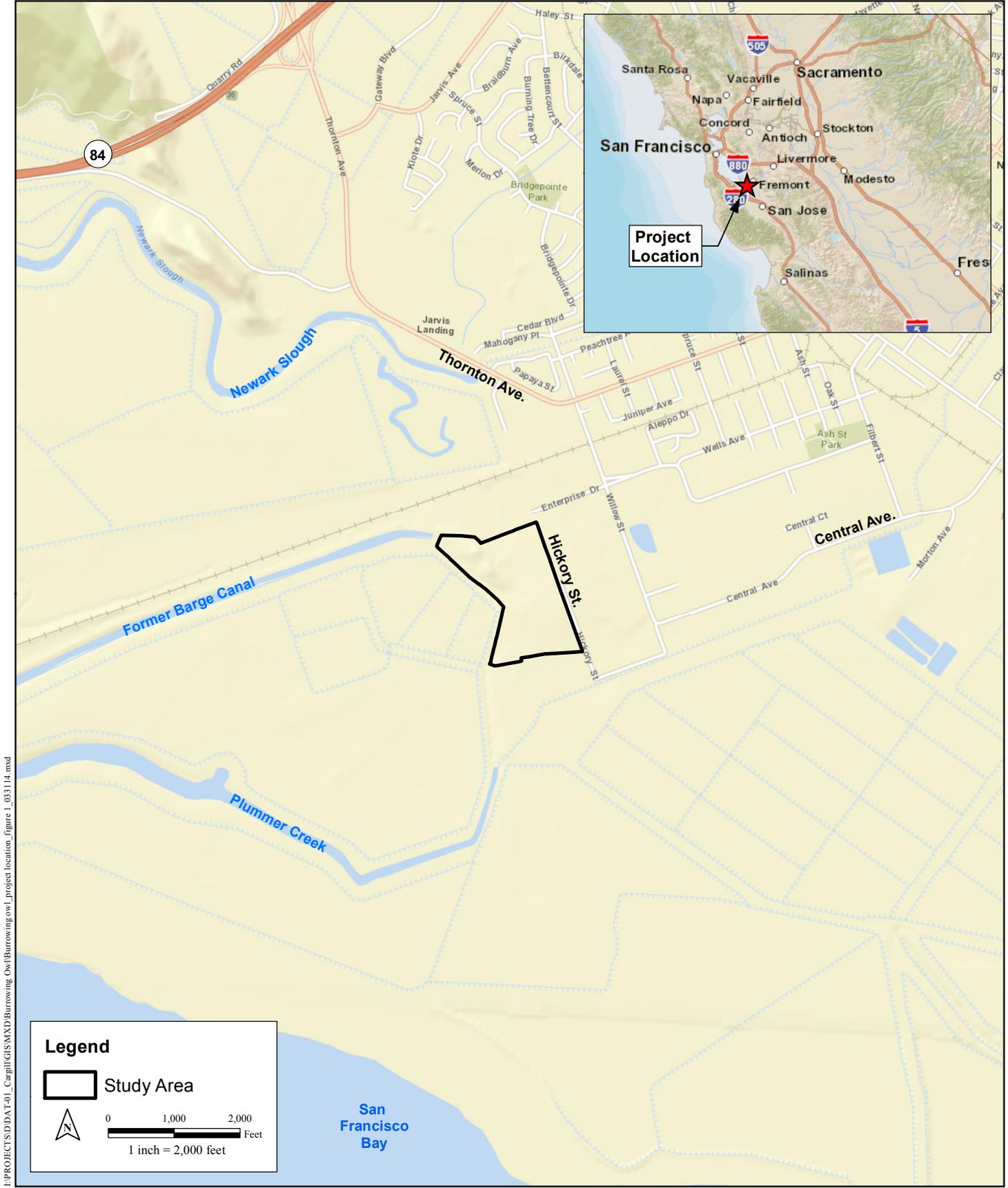
Enclosures:

Figure 1 Project Location Map
Figure 2 Aerial Map
Attachment A Site Photographs

REFERENCES

California Department of Fish and Wildlife (CDFW). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency Department of Fish and Game. March 2012.

WRA, Inc. 2013. History of Settling Basins at Hill Parcel. Memorandum dated August 20, 2013.

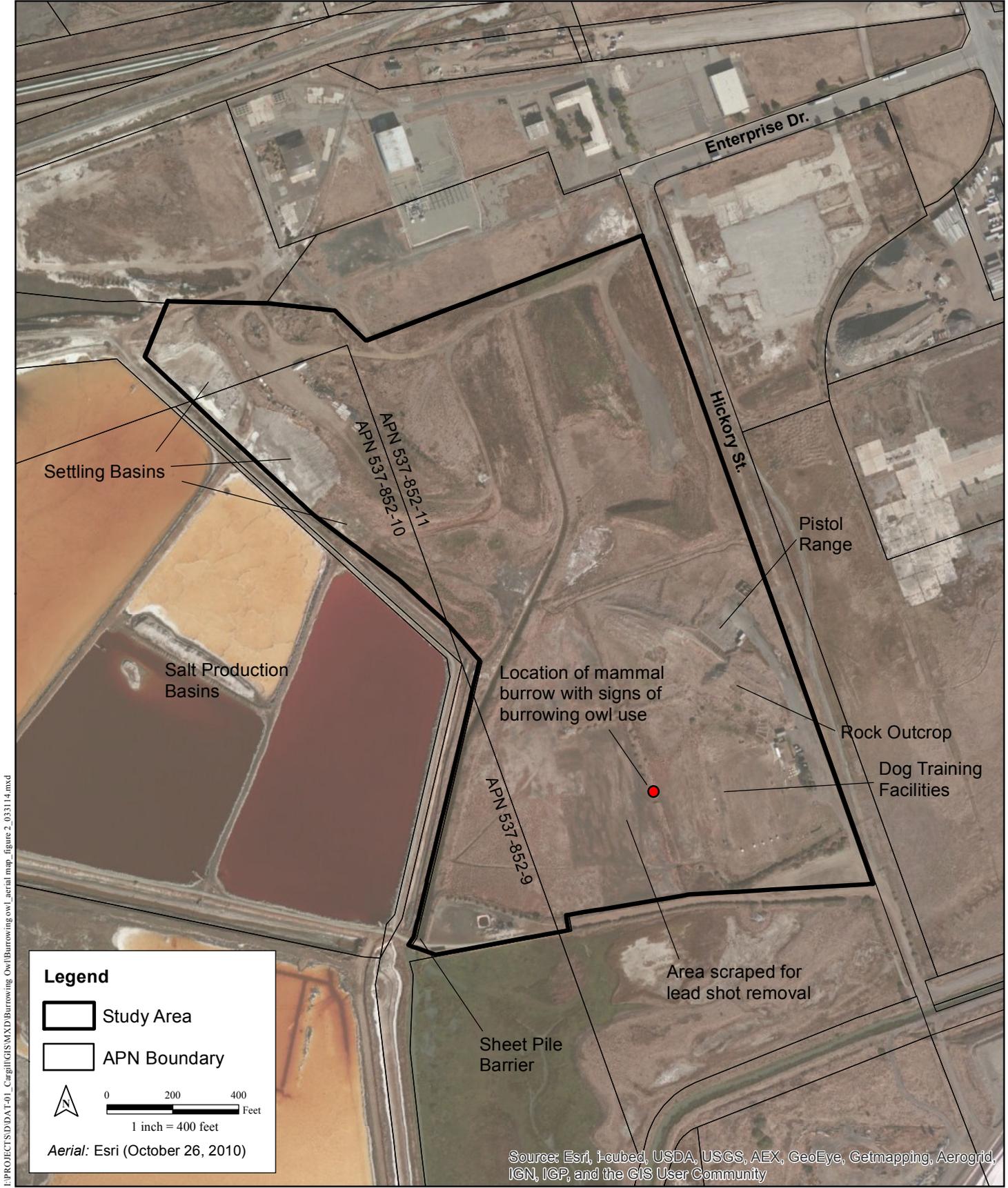


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Location in Region and Vicinity Map

PARCEL 1 OF PARCEL MAP 9837
BURROWING OWL SURVEY REPORT

Figure 1



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Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Aerial Map

PARCEL 1 OF PARCEL MAP 9837
BURROWING OWL SURVEY REPORT

Figure 2



Photo 1. View of a former ground squirrel burrow with signs of burrowing owl use (whitewash and pellets). Spider webs inside the opening to the burrow indicate that it had not been used recently. Photo date: 03/27/2014



Photo 2. View of representative ground squirrel burrow with no signs of burrowing owl use. Photo date: 03/27/2014



Photo 3. View of the former ground squirrel burrow with signs of burrowing owl use. No evidence of recent burrowing owl use. Photo date: 4/2/2014

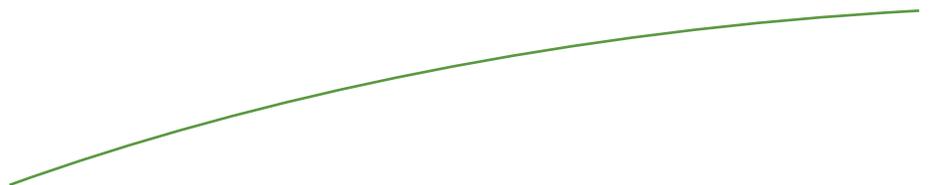


Photo 4. View of the former ground squirrel burrow with signs of burrowing owl use. No evidence of recent burrowing owl use. Photo date: 4/2/2014



Appendix E

RARE PLANT SURVEY LETTER REPORT,
PARCEL 1 OF PARCEL MAP 9837,
CITY OF NEWARK, CALIFORNIA



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Folsom, CA 95630
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October 9, 2014

Mr. Glenn Brown
VP Entitlements, Integral Communities
Dumbarton Area 2, LLC
500 La Gonda Way, Suite 202
Danville, CA 94526

Subject: Rare Plant Survey Letter Report Parcel 1 of Parcel Map 9837, City of Newark, California

On behalf of Dumbarton Area 2, LLC, HELIX Environmental Planning, Inc. (HELIX) has conducted focused surveys for rare plants on the 54.53-acre property known as Parcel 1 of Parcel Map 9837 (Property) in the City of Newark, California.

The Property is within the Dumbarton Transit Oriented Development (TOD) Specific Plan area. A Final Environmental Impact Report (EIR; State Clearinghouse No. 2010042012) has been prepared and certified, and the Specific Plan has been adopted. For most parcels within the Specific Plan area (including Parcel 1 of Parcel Map 9837), the evaluation conducted for the EIR was programmatic. As detailed in the certified EIR, project-specific studies and documents consistent with the requirements of the California Environmental Quality Act (CEQA), including focused rare plant surveys, are required for the Property prior to any site development. We understand that Dumbarton Area 2, LLC, intends to develop the Property with transit-oriented mixed-uses, including residential and retail/commercial uses.

This letter report documents the methods and results of the rare plant surveys conducted by HELIX in compliance with the Dumbarton TOD Specific Plan EIR. The surveys were conducted in compliance with the *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2000), and California Native Plant Society's (CNPSs) botanical survey guidelines (CNPS 2001).

PROPERTY LOCATION AND EXISTING CONDITIONS

Property Location

The 54.53-acre Property is located in southwestern Alameda County within the City of Newark, California. Enterprise Drive (formerly Wells Avenue) terminates at the northeast corner of the Property, and the site is bounded by Hickory Street to the east and several saline basins associated with the solar salt production process west of the site. Figure 1 is a project location map. Representative photographs of the Property are included as Attachment A.

As mentioned above, the Property is within the Dumbarton TOD Specific Plan Area, which is comprised of former industrial parcels planned for future transit-oriented, mixed-use development. The Property is bounded to the north by a former industrial facility owned and operated by FMC Corporation, to the east by vacant industrial parcels, to the south by the Wildlands' Plummer Creek Mitigation Bank, and to the west by active salt basins. The San Francisco Bay is approximately 1.9 miles west of the Property. Figure 2 is an aerial map of the Property and immediate vicinity.

Existing Conditions

Terrain on the Property is characterized by a series of natural hills, soil stockpile storage areas placed in upland areas, and man-made basins. The surface elevations on the Property range from about 8 to 10 feet above mean sea level (amsl), with the exception of a rock outcrop that extends to approximately 26 feet amsl, and stockpile storage areas that reach 30 to 35 feet amsl. The rock outcrop is located in the southeastern portion of the site, and is comprised of serpentinite bedrock that contains chrysotile, a form of naturally occurring asbestos.

The Property has been used in the past for industrial activities, recreational uses, and police training. Those activities have resulted in the construction and operation of settling basins associated with the manufacture of magnesia containing products, excavation of ditches, removal of rock, and the placement of stockpile materials in upland areas. Access roads circumnavigate the site, and large areas are used for equipment parking/staging. Construction equipment and materials are present in the northern portion of the Property. The settling basins in the northwest portion of the Property were constructed in uplands as part of the processes of the former FMC industrial facility of separating the minerals and salts from process water (WRA 2013). Two constructed ditches are present in the Property; one of the ditches runs generally north/south through the site and the other runs east/west and connects to the north/south ditch.

Before World War II, a recreational pistol range was present in the southeastern portion of the Property and then the Newark Sportsmen's Club operated a skeet shooting range there from 1969 to 1995. The City of Newark has leased an area in the southeastern portion of the Property for use as a police pistol range since 1975, but use of lead shot was discontinued approximately 6 to 8 years ago. The City of Newark Police Department is currently using the property for a pistol range and dog training facility. Rifle and shotgun shells and skeet fragments were observed in the southern portion of the Property during fieldwork conducted by HELIX personnel on August

6 and 13, 2013. Structures associated with the dog training facility are located in the southeast portion of the Property as well as parking areas, and mowed/maintained training areas. Dog training activities were observed during the site visits.

The Property has been subject to several clean-up actions that have been completed under State supervision. In 2001, the owner entered into a voluntary cleanup agreement with the Regional Water Quality Control Board (RWQCB) and several inches of topsoil containing lead and polycyclic aromatic hydrocarbons (PAHs) were excavated from the vicinity of the pistol range and dog training facility and disposed of offsite. The areas were left to recover naturally and the RWQCB certified case closure in 2004. As a result of past and present uses, the Property is a known brownfield site that is constrained by environmental contamination.

Vegetation Communities/Habitat Types

Vegetation communities/habitat types on the Property include non-native grassland (26.79 acres), ruderal/disturbed (6.89 acres), developed (1.80 acres), coyote brush scrub (1.08 acres), serpentinite rock outcrop (0.26 acre), seasonal wetland (13.82 acres), drainage ditch (0.46 acre), unvegetated ponded depression (0.39 acre), and settling basins (3.04 acres). Attachment C is a list of plant species observed in the Property. Figure 3 is a habitat map of the Property.

Upland Habitats

Non-native Grassland

A total of 26.79 acres of non-native grassland occurs throughout the Property and is the predominant habitat type. The non-native grassland present on the Property is characterized by non-native grasses such as wild oats (*Avena fatua*), Bermuda grass (*Cynodon dactylon*), and Italian rye grass (*Festuca perennis*). Forbs such as stinkwort (*Dittrichia graveolens*), milk thistle (*Silybum marianum*), and five-horned smotherweed (*Bassia hyssopifolia*) are common throughout the grassland, and shrubs such as alkali heath (*Frankenia salina*) and big salt bush (*Atriplex lentiformis* spp. *lentiformis*) occur sparsely. This habitat occurs primarily within areas that have been previously disturbed for industrial operations, such as stockpiles and non-depressional areas with soil previously removed or treated for clean-up operations.

Ruderal/Disturbed

A total of 6.99 acres of ruderal/disturbed habitat occurs along access roads and areas cleared for equipment and materials storage. These areas are largely devoid of vegetation, but may contain non-native plant species that commonly occur in poor soils and disturbed habitats, including species such as wild oats, Bermuda grass, bristly ox tongue (*Helminthotheca echioides*), and five-horned smotherweed.

Developed

Developed portions of the site (1.8 acres) include active and abandoned structures and facilities (e.g. the pistol range and dog training area). These areas are largely barren of vegetation or contain vegetation that is maintained by pruning, mowing, or grading.

Coyote Brush Scrub

A total of 1.08 acres of coyote brush scrub habitat occurs primarily along a relatively undisturbed ridgeline in the northwestern portion of the Property. Coyote brush (*Baccharis pilularis*) is the predominant shrub canopy (approximately 15 percent or greater cover) over a grassy understory. Similar to those described above in the non-native grassland habitat, the grassy understory contains primarily non-native grass and forb species typical of disturbed sites.

Serpentinite Rock Outcrop

As described earlier, a 0.26-acre rock outcrop is located in the southeastern portion of the site, and reaches approximately 26 feet amsl. That outcrop is comprised of serpentine bedrock that contains chrysotile, a form of naturally occurring asbestos. Vegetation on the rock outcrop consists primarily of non-native grass and forb species similar to those described above in the non-native grassland habitat.

Aquatic Habitats

Seasonal Wetlands

Eight alkaline seasonal wetlands (13.82 acres) occur within the Property and are adjacent to drainage ditches or ponded features on or off site. Seasonal wetlands that retain water for a longer duration are vegetated with species such as Pacific swampfire, opposite leaf Russian thistle, and red saltwort (*Salicornia rubra*). Seasonal wetlands that are inundated less frequently or are characterized primarily by saturation are vegetated with species such as Italian rye grass (*Festuca perennis*), seaside barley (*Hordeum marianum*), coastal salt grass (*Distichilis spicata*), and alkali sea-heath.

Drainage Ditches

Two constructed drainage ditches (0.46 acre) occur within the Property: one runs north/south through the site, and the other runs east/west, bisecting the Property. Both drainage ditches are man-made, and collect surface runoff from the site. The north/south drainage ditch flows southward until it reaches a sheet pile barrier at the southern end of the Property that prevents water from draining off-site. Since runoff collected in the ditch cannot leave the site, water collected either evaporates, infiltrates, or is pumped by the property owner to wherever it's needed in the adjacent salt production facilities.

The segment of the north/south drainage ditch on the Property was mostly dry at the time of the site visits, although some standing water was present near the southern end of the ditch. Throughout the Property, the bottom of the ditch is devoid of vegetation. The banks of the ditch are vegetated with Pacific swampfire (*Sarcocornia pacifica*) and opposite leaf Russian thistle (*Salsola soda*). The east/west ditch was dry during the site visits, and the ditch bottom and banks are vegetated with red saltwort (*Salicornia rubra*) and opposite leaf Russian thistle.

Unvegetated Poned Depression

The unvegetated ponded depression on the Property is located in a topographic depression surrounded by seasonal wetland. The unvegetated ponded depression is differentiated from the seasonal wetland because it is devoid of vegetation.

Settling Basins

The 3.04 acres of settling basins are located in the northwest corner of the Property. They contain gypsum and other salts and are subject to ongoing maintenance activities. As a result, these features are largely devoid of vegetation and have low biological habitat value.

STUDY METHODS

Current lists of special-status plant species known to occur or having the potential to occur in the “Newark, California” U.S. Geological Survey 7.5 minute topographic quadrangle were obtained from the CNPS, the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Wildlife (CDFW); these lists are included as Attachment B. Botanical surveys were then conducted to determine presence/absence of the regionally occurring special-status plant species on the Property. Botanical surveys were conducted by HELIX Senior Scientist Stephen Stringer, M.S. on April 30, July 18, August 8, and September 11, 2014. The surveys were conducted by walking north/south transects across the Property at approximately 50 foot intervals, adjusted to account for vegetation height/density, in order to obtain 100 percent visual coverage of the site. When wetland areas were encountered, they were searched intensively for potential special-status plants. An inventory of plant species observed was conducted during each site visit. All plant species encountered during the surveys were identified to the taxonomic level necessary to determine whether or not they were special-status species. A list of plant species observed is included as Attachment C. Common and scientific names are from the Jepson Manual, second edition (Baldwin et al. 2012).. Prior to the botanical survey on July 18, 2014, Mr. Stringer visited a reference population of Hoover’s button-celery (*Eryngium aristulatum* var. *hooveri*) that he discovered in the project vicinity in 2011 to determine if the species was identifiable at the time of the surveys. The population of Hoover’s button celery was no longer flowering but was present and identifiable.

RESULTS

The following nine special-status plant species were identified as having the potential to occur in the “Newark, California” USGS quadrangle (Attachment B): Contra Costa goldfields (*Lasthenia conjugens*), alkali milk-vetch (*Astragalus tener* var. *tener*), San Joaquin spearscale (*Atriplex joaquinana*), Congdon’s tarplant (*Centromadia parryi* ssp. *congdonii*), Hoover’s button-celery (*Eryngium aristulatum* var. *hooveri*), hairless popcornflower (*Plagiobothrys glaber*), chaparral ragwort (*Senecio aphanactis*), slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina*), and saline clover (*Trifolium hydrophilum*).

There is no suitable habitat on the Property for hairless popcornflower, chaparral ragwort, and slender-leaved pondweed and there is no known occurrence of these species on the Property or in the immediate vicinity. Therefore, these three plant species are not discussed further in this letter report. Low to moderate quality habitat is present in the non-native grassland, seasonal wetlands, and/or ruderal/disturbed habitats on the Property for the other six regionally-occurring special-status plant species; these species are discussed below.

Alkali milk-vetch (*Astragalus tener* var. *tener*)

Federal Status – None
State Status – None
Other – CNPS List 1B.2

Alkali milk-vetch is an annual herb that occurs in alkaline habitats of playas, valley and foothill grasslands (adobe clay soils), and vernal pools at elevations that range from 3 to 197 feet amsl. The known range of this species includes Alameda, Contra Costa, Merced, Monterey, Napa, San Benito, Santa Clara, San Francisco, San Joaquin, Solano, Sonoma, Stanislaus, and Yolo counties. This species blooms from March through June (CNPS 2014).

The seasonal wetlands on the Property provide marginally suitable soil and hydrologic conditions for this species. However, there is no reported occurrence of this species in the California Natural Diversity Database (CNDDDB) in or adjacent to the Property. The CNDDDB contains only one reported occurrence of this species on the Newark quad from an 1895 collection, which described it as “possibly extirpated.” The reported location is a non-specific polygon described as “Newark.” There is no other record of this species on the Newark quad, and the Property and surrounding areas have been previously developed and disturbed. Due to the existing level of disturbance and lack of suitable natural habitat such as playas, grasslands, and vernal pools, the Property provides only marginally suitable habitat for this species. In addition, this species was not observed during focused botanical surveys conducted on April 30, 2014 during the blooming season (March to June). Therefore, this species is presumed absent from the Property.

San Joaquin Spearscale (*Atriplex joaquinana*)

Federal Status – None
State Status – None
Other – CNPS List 1B.2

San Joaquin spearscale is an annual herb that occurs on alkaline soils within chenopod scrub, meadows and seeps, playas, and valley and foothill grassland at elevations from 3 to 2,740 feet amsl. The known range of this species includes Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Santa Clara, and San Joaquin counties. This species blooms from April through October (CNPS 2014).

The non-native grassland and seasonal wetlands on the Property provide marginally suitable soil and hydrologic conditions for this species. However, there is no reported occurrence of this species in the CNDDDB in or adjacent to the Property. The CNDDDB contains only one reported occurrence on the Newark quad from a 1927 collection, and is described as “presumed extant.” The location of the reported occurrence is described in the CNDDDB as “unknown and mapped as a best guess in the vicinity of Newark.” There is no other known occurrence of this species on the Newark quad, and the Property and surrounding areas have been previously developed and disturbed. As a result of the existing level of disturbance and lack of suitable natural habitat such as chenopod scrub, meadows and seeps, playas, and grasslands, the Property provides only marginally suitable habitat for this species. In addition, this species was not observed during focused botanical surveys conducted on April 30, July 18, August 8, and September 11, 2014 during the blooming season (April to October). Therefore, this species is presumed absent from the Property.

Congdon’s Tarplant (*Centromadia parryi* spp. *congdonii*)

Federal Status – None
State Status – None
Other – CNPS List 1B.1

Congdon’s tarplant is an annual herb that occurs in alkaline soils of valley and foothill grassland at elevations that range from 0 to 755 feet amsl. The known range of this species includes Alameda, Contra Costa, Monterey, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, and Solano counties. This species blooms from May through November (CNPS 2014).

Some marginal habitat for this species occurs within the non-native grassland and ruderal/disturbed habitats on the property. A population of this species was documented in 2003 at a site located approximately 0.2 mile northeast of the study area (CNDDDB 2014). The associated habitat was ruderal/grassland featuring prickly ox tongue, wild oats, Italian rye grass, and Bermuda grass. However, this species was not observed during focused botanical surveys conducted on April 30, July 18, August 8, and September 11, 2014 during the blooming season (May to November). Therefore, this species is presumed absent from the Property.

Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*)

Federal Status – None
State Status – None
Other – CNPS List 1B.1

Hoover's button-celery is an annual or perennial herb that occurs in vernal pools ranging from 9 to 148 feet amsl. The known range of this species includes Alameda, San Benito, Santa Clara, San Diego, and San Luis Obispo counties. This species blooms from July to August (CNPS 2014).

The seasonal wetlands on the Property provide marginally suitable soil and hydrologic conditions for this species. The CNDDDB contains one reported occurrence of this species on the Newark quad from a 2011 and 2013 observance approximately 0.25 mile northeast of the Property where this species was observed by Mr. Stringer in shallow seasonal wetlands. However, this species was not observed during focused botanical surveys conducted on July 18 or August 8, 2014 during the blooming season (July to August). Therefore, this species is presumed absent from the Property.

Contra Costa goldfields (*Lasthenia conjugens*)

Federal Status – None
State Status – None
Other – CNPS List 1B.1

Contra Costa goldfields is an annual herb that occurs in mesic habitats of cismontane woodland, alkaline playas, valley and foothill grassland, and vernal pools that range from 0 to 1,542 feet amsl. The known range of this species includes Alameda, Contra Costa, Mendocino, Monterey, Marin, Napa, Santa Barbara, Santa Clara, Solano, and Sonoma counties. This species blooms from March through June (CNPS 2014).

The non-native grassland and seasonal wetlands on the Property provide marginally suitable soil and hydrologic conditions for this species. The CNDDDB contains only one reported occurrence of this species on the Newark quad from an 1895 collection, and is described as "extirpated." The reported occurrence is a non-specific polygon that overlaps the Property with the location of the reported occurrence listed as "Newark." The exact location where this plant was identified is unknown. No additional known records of this species occur on the Newark quad, and the Property and surrounding areas have been previously developed and disturbed. As a result of its disturbed condition and the absence of suitable natural habitat such as playas, native grasslands, and vernal pools, the Property provides only marginally suitable habitat for this species. In addition, this species was not observed during focused botanical surveys conducted on April 30, 2014 during the blooming season (March to June). Therefore, this species is presumed absent from the Property.

Saline Clover (*Trifolium hydrophilum*)

Federal Status – None
State Status – None
Other – CNPS List 1B.2

Saline clover is an annual herb that occurs in marshes and swamps, mesic, alkaline sites within valley and foothill grassland, and vernal pools at an elevation of 0 to 985 feet amsl. The known range of this species includes Alameda, Contra Costa, Mendocino, Monterey, Marin, Napa, Santa Barbara, Santa Clara, Solano, and Sonoma counties. This species blooms from April through June (CNPS 2014).

The non-native grassland and seasonal wetlands on the Property provide marginally suitable soil and hydrologic conditions for this species. There is no reported occurrence in the CNDDDB of this species on the Property; however, the CNDDDB contains a reported occurrence of this species approximately 0.2 mile northeast of the study area from a 2004 collection, which is described as “presumed extant.” However, the CNDDDB indicates that the exact location where this plant was observed is unknown and the mapping is approximate. No additional known records of this species occur on the Newark quad, and the Property and surrounding areas have been previously developed and disturbed. Due to the existing level of disturbance and lack of suitable natural habitat such as marshes and swamps, grasslands, and vernal pools, the Property provides only marginally suitable habitat for this species. In addition, this species was not observed during focused botanical surveys conducted on April 30, 2014 during the blooming season (April to June). Therefore, this species is presumed absent from the Property.

CONCLUSION

No special-status plant species were observed in the property known as Parcel 1 of Parcel Map 9837 during focused surveys conducted during the blooming season of the target species. In addition, the site only provides marginal habitat for special-status plants because of the existing level of disturbance and lack of suitable natural habitats. Therefore, special-status plant species are currently presumed absent from the site. The results of rare plant surveys are typically considered valid for two blooming seasons after the surveys are conducted. If development of the site does not commence prior to spring of 2017, rare plant surveys should be re-conducted to verify presence/absence of special-status plant species.

Feel free to contact me with any questions by phone at 916-365-8712 or by email at StephenS@helixepi.com.

Sincerely,



Stephen Stringer
Senior Scientist

Enclosures:

Figure 1 Project Location Map

Figure 2 Aerial Map

Figure 3 Habitat Map

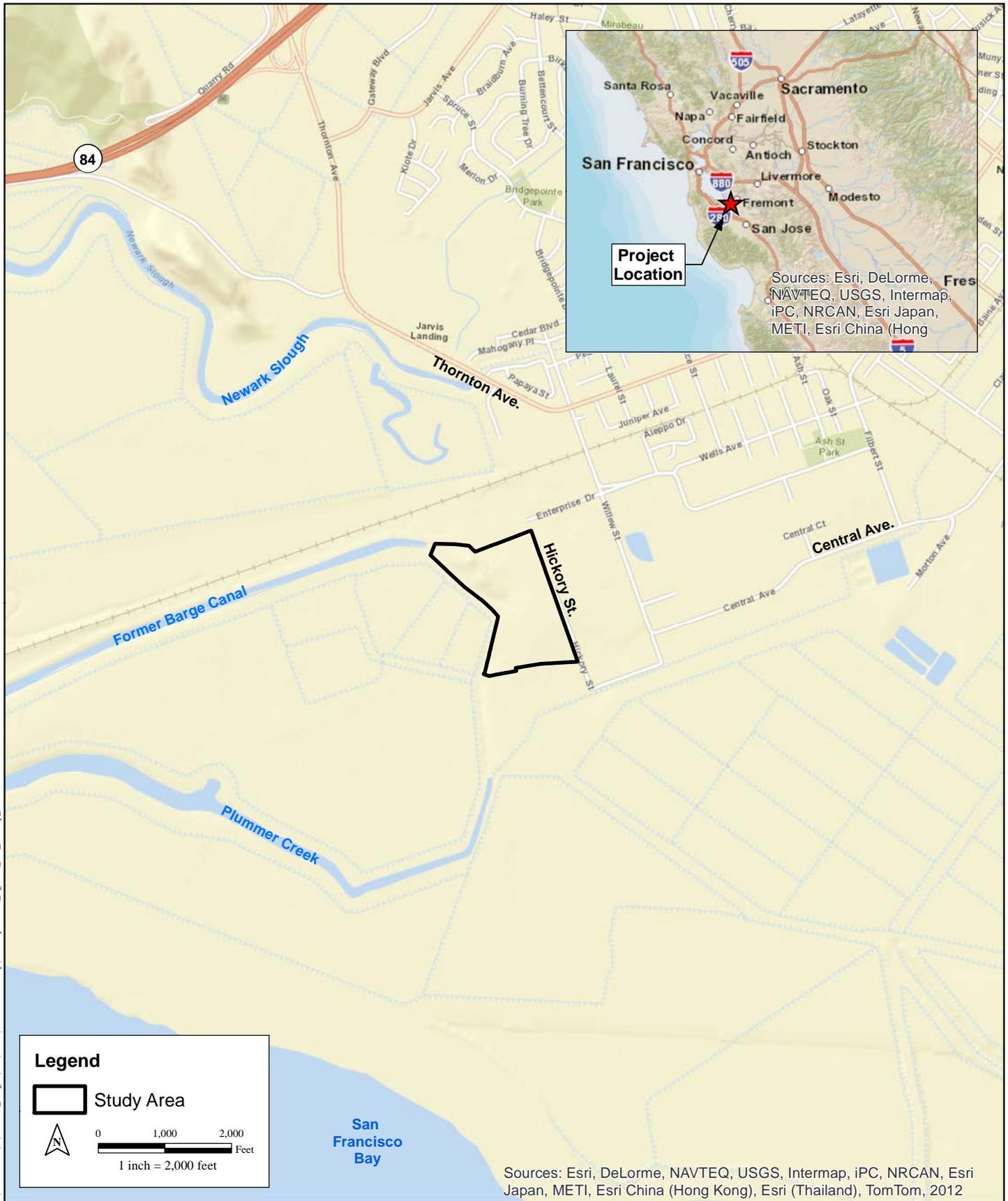
Attachment A Site Photographs

Attachment B USFWS, CNPS, and CNDDDB Lists of Regionally-Occurring Special-Status
Species

Attachment C Plant Species Observed

REFERENCES

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.). 2012. The Jepson manual: higher plants of California. Second edition. University of California Press, Berkeley, CA. 1,566 pp.
- California Department of Fish and Game. 2000. Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities. State of California, California Natural Resources Agency.
- California Native Plant Society (CNPS). 2014. Inventory of Rare and Endangered Plants (online edition, v7-12apr 4-11-12). Newark Quad. California Native Plant Society. Sacramento, CA. Accessed online February 2014.
2013. Inventory of Rare and Endangered Plants (online edition, v7-12apr 4-11-12). Newark Quad. California Native Plant Society. Sacramento, CA. Accessed online January 7, 2013.
2001. CNPS Botanical Survey Guidelines. Available online http://www.cnps.org/cnps/rareplants/pdf/cnps_survey_guidelines.pdf
- California Department of Fish and Wildlife (CDFW). 2014. Species List for Newark Quad. California Department of Fish and Game, National Diversity Database Biogeographic Data Branch. Sacramento, California. Accessed online January 6, 2013.
- WRA, Inc. 2013. History of Settling Basins at Hill Parcel. Memorandum dated August 20, 2013.



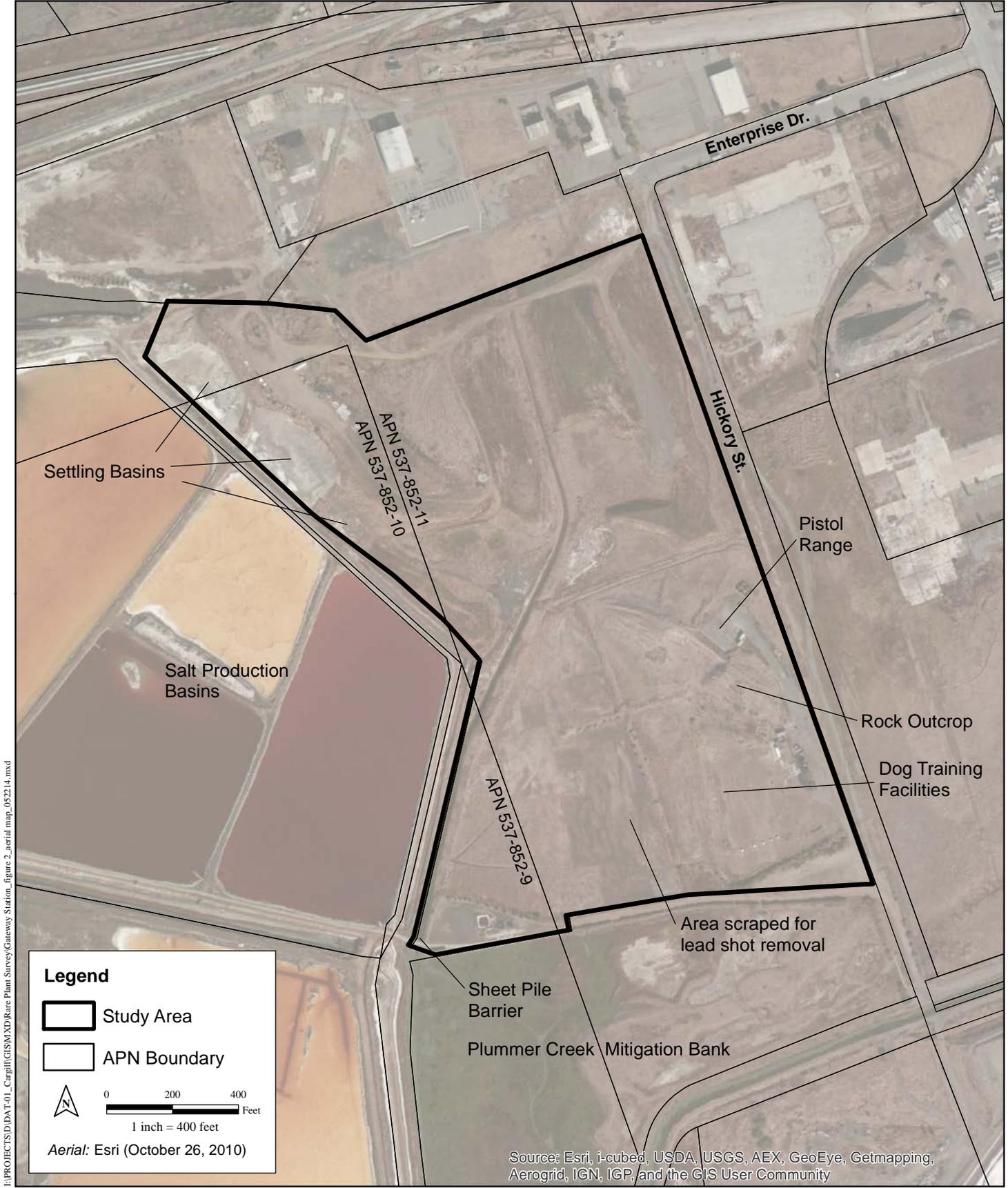
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Map Date: 05/22/14

Project Location Map

GATEWAY STATION
RARE PLANT SURVEY REPORT

Figure 1



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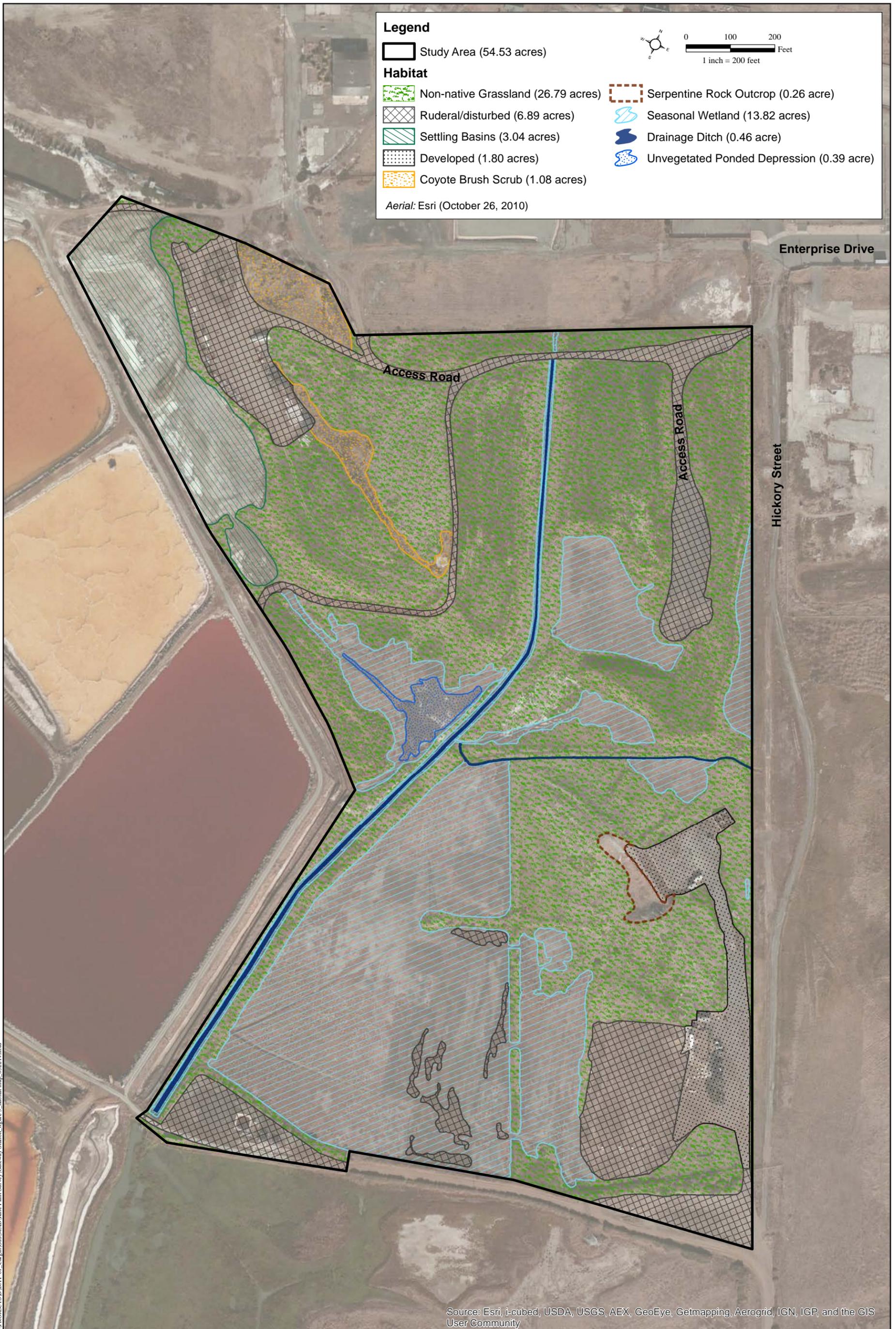
Map Date: 05/22/14

Aerial Map

GATEWAY STATION
RARE PLANT SURVEY REPORT

Figure 2

Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Map Date: 05/22/14

Attachment A
SITE PHOTOGRAPHS



Photo 1. View of the northern portion of the study area facing northwest from the bedrock outcrop located approximately half way between the northern and southern site limits. Photo date: 8/13/2013



Photo 2. View of the center settling basin, facing southeast from the northwestern edge of the basin. Photo date: 8/6/2013

**Attachment A (cont.)
SITE PHOTOGRAPHS**



Photo 3. View of the rock outcrop from near the southwest corner of study area, facing northeast. Photo date: 12/11/2013



Photo 4. View of the pistol range from the top of the rock outcrop, facing east. Photo date: 12/11/2013

**Attachment A (cont.)
SITE PHOTOGRAPHS**



Photo 5. View of the Un-vegetated Pounded Depression, facing north from the southern edge of the depression. Photo date: 8/6/2013



Photo 6. View of the north/south drainage ditch. View facing north from the southern limit of the study area. The sheet pile barrier and standing water are visible. Photo date: 8/6/2013

**Attachment A (cont.)
SITE PHOTOGRAPHS**



Photo 7. View of representative pickleweed seasonal wetland in the study area. View facing east from near the southwest corner of the study area. The bedrock outcrop and dog training facility are visible in the background. Photo date: 8/13/2013



Photo 8. View of a representative area with topsoil removed for lead shot removal. Photo date: 8/13/2013

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 140107015129

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

Branchinecta lynchi
 vernal pool fairy shrimp (T)

Lepidurus packardii
 vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
 green sturgeon (T) (NMFS)

Hypomesus transpacificus
 delta smelt (T)

Oncorhynchus kisutch
 coho salmon - central CA coast (E) (NMFS)

Oncorhynchus mykiss
 Central California Coastal steelhead (T) (NMFS)
 Central Valley steelhead (T) (NMFS)
 Critical habitat, Central California coastal steelhead (X) (NMFS)

Oncorhynchus tshawytscha
 Central Valley spring-run chinook salmon (T) (NMFS)
 winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
 California tiger salamander, central population (T)

Rana draytonii
 California red-legged frog (T)
 Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
 Alameda whipsnake [=striped racer] (T)
 Critical habitat, Alameda whipsnake (X)

Birds

Charadrius alexandrinus nivosus
 western snowy plover (T)

Pelecanus occidentalis californicus
 California brown pelican (E)

Rallus longirostris obsoletus
 California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
 California least tern (E)

Mammals

Reithrodontomys raviventris

salt marsh harvest mouse (E)

Plants

Lasthenia conjugens

Contra Costa goldfields (E)

Quads Containing Listed, Proposed or Candidate Species:

NEWARK (447D)

County Lists

Alameda County

Listed Species

Invertebrates

Branchinecta conservatio

Conservancy fairy shrimp (E)

Branchinecta longiantenna

Critical habitat, longhorn fairy shrimp (X)

longhorn fairy shrimp (E)

Branchinecta lynchi

Critical habitat, vernal pool fairy shrimp (X)

vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

valley elderberry longhorn beetle (T)

Euphydryas editha bayensis

bay checkerspot butterfly (T)

Icaricia icarioides missionensis

mission blue butterfly (E)

Lepidurus packardi

Critical habitat, vernal pool tadpole shrimp (X)

vernal pool tadpole shrimp (E)

Speyeria callippe callippe

callippe silverspot butterfly (E)

Fish

Acipenser medirostris

green sturgeon (T) (NMFS)

Eucyclogobius newberryi

tidewater goby (E)

Hypomesus transpacificus

Critical habitat, delta smelt (X)

delta smelt (T)

Oncorhynchus kisutch

coho salmon - central CA coast (E) (NMFS)

Oncorhynchus mykiss

- Central California Coastal steelhead (T) (NMFS)
- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central California coastal steelhead (X) (NMFS)
- Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha

- Central Valley spring-run chinook salmon (T) (NMFS)
- Critical habitat, winter-run chinook salmon (X) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense

- California tiger salamander, central population (T)
- Critical habitat, CA tiger salamander, central population (X)

Rana draytonii

- California red-legged frog (T)
- Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus

- Alameda whipsnake [=striped racer] (T)
- Critical habitat, Alameda whipsnake (X)

Thamnophis gigas

- giant garter snake (T)

Thamnophis sirtalis tetrataenia

- San Francisco garter snake (E)

Birds

Charadrius alexandrinus nivosus

- western snowy plover (T)

Pelecanus occidentalis californicus

- California brown pelican (E)

Rallus longirostris obsoletus

- California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni

- California least tern (E)

Mammals

Reithrodontomys raviventris

- salt marsh harvest mouse (E)

Vulpes macrotis mutica

- San Joaquin kit fox (E)

Plants

Amsinckia grandiflora

Critical habitat, large-flowered fiddleneck (X)
large-flowered fiddleneck (E)

Arctostaphylos pallida

pallid manzanita (=Alameda or Oakland Hills manzanita) (T)

Chorizanthe robusta var. *robusta*

robust spineflower (E)

Clarkia franciscana

Presidio clarkia (E)

Cordylanthus palmatus

palmate-bracted bird's-beak (E)

Holocarpha macradenia

Critical habitat, Santa Cruz tarplant (X)
Santa Cruz tarplant (T)

Lasthenia conjugens

Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)

Layia carnosa

beach layia (E)

Suaeda californica

California sea blite (E)

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.
During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be April 07, 2014.

California Department of Fish and Game
 Natural Diversity Database
 Gateway Station - Newark Quad Summary Report

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 <i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020			G2G3	S2	SC
2 <i>Antrozous pallidus</i> pallid bat	AMACC10010			G5	S3	SC
3 <i>Astragalus tener var. tener</i> alkali milk-vetch	PDFAB0F8R1			G2T2	S2	1B.2
4 <i>Athene cunicularia</i> burrowing owl	ABNSB10010			G4	S2	SC
5 <i>Atriplex joaquinana</i> San Joaquin spearscale	PDCHE041F3			G2	S2	1B.2
6 <i>Centromadia parryi ssp. congdonii</i> Congdon's tarplant	PDAST4R0P1			G3T2	S2	1B.1
7 <i>Charadrius alexandrinus nivosus</i> western snowy plover	ABNNB03031	Threatened		G3T3	S2	SC
8 <i>Circus cyaneus</i> northern harrier	ABNKC11010			G5	S3	SC
9 <i>Danaus plexippus</i> monarch butterfly	IILEPP2010			G5	S3	
10 <i>Elanus leucurus</i> white-tailed kite	ABNKC06010			G5	S3	
11 <i>Eryngium aristulatum var. hooveri</i> Hoover's button-celery	PDAP10Z043			G5T1	S1	1B.1
12 <i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	ABPBX1201A			G5T2	S2	SC
13 <i>Lasthenia conjugens</i> Contra Costa goldfields	PDAST5L040	Endangered		G1	S1	1B.1
14 <i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041		Threatened	G4T1	S1	
15 <i>Melospiza melodia pusillula</i> Alameda song sparrow	ABPBXA301S			G5T2?	S2?	SC
16 <i>Northern Coastal Salt Marsh</i>	CTT52110CA			G3	S3.2	
17 <i>Oncorhynchus mykiss irideus</i> steelhead - central California coast DPS	AFCHA0209G	Threatened		G5T2Q	S2	
18 <i>Plagiobothrys glaber</i> hairless popcornflower	PDBOR0V0B0			GH	SH	1A
19 <i>Rallus longirostris obsoletus</i> California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	
20 <i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened		G2G3	S2S3	SC
21 <i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	
22 <i>Riparia riparia</i> bank swallow	ABPAU08010		Threatened	G5	S2S3	
23 <i>Senecio aphanactis</i> chaparral ragwort	PDAST8H060			G3?	S2	2B.2
24 <i>Sorex vagrans halicoetes</i> salt-marsh wandering shrew	AMABA01071			G5T1	S1	SC
25 <i>Spirinchus thaleichthys</i> longfin smelt	AFCHB03010		Threatened	G5	S1	SC

California Department of Fish and Game
 Natural Diversity Database
 Gateway Station - Newark Quad Summary Report

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
26 <i>Sternula antillarum browni</i> California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2S3	
27 <i>Stuckenia filiformis ssp. alpina</i> slender-leaved pondweed	PMPOT03091			G5T5	S3	2B.2
28 <i>Trifolium hydrophilum</i> saline clover	PDFAB400R5			G2	S2	1B.2



Inventory of Rare and Endangered Plants - 7th edition interface

v7-13dec 12-18-13

Status: search results for "+Newark (447D) 3712251" - Tue, Jan. 7, 2014, 15:46 ET b

Tip: Words meant to be searched as a unit should be wrapped in quotes, e.g., "coastal dunes".
[\[all tips and help.\]](#)[\[search history\]](#)

Hits 1 to 5 of 5

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
	<input type="checkbox"/>	1	<u>Atriplex joaquinana</u>	San Joaquin spearscale	Chenopodiaceae	List 1B.2
	<input type="checkbox"/>	1	<u>Centromadia parryi ssp. congdonii</u> 	Congdon's tarplant	Asteraceae	List 1B.1
	<input type="checkbox"/>	1	<u>Eryngium aristulatum var. hooveri</u> 	Hoover's button-celery	Apiaceae	List 1B.1
	<input type="checkbox"/>	1	<u>Senecio aphanactis</u> 	chaparral ragwort	Asteraceae	List 2B.2
	<input type="checkbox"/>	1	<u>Trifolium hydrophilum</u>	saline clover	Fabaceae	List 1B.2

No more hits.








Attachment C
PLANT SPECIES OBSERVED

FAMILY	SCIENTIFIC NAME	COMMON NAME
Dicots		
Aizoaceae	<i>Mesembryanthemum nodiflorum</i>	slender leaved ice plant
Apiaceae	<i>Foeniculum vulgare</i>	sweet fennel
Asteraceae	<i>Baccharis pilularis ssp. consanguinea</i>	coyote brush
	<i>Carduus pycnocephalus</i>	Italian thistle
	<i>Centaurea solstitialis</i>	yellow star-thistle
	<i>Centromadia pungens ssp. pungens</i>	common tarweed
	<i>Cotula coronopifolia</i>	brass buttons
	<i>Dittrichia graveolens</i>	stinkwort
	<i>Erigeron canadensis</i>	horseweed
	<i>Helminthotheca echioides</i>	bristly ox-tongue
	<i>Lactuca saligna</i>	willow-leaf lettuce
	<i>Lactuca serriola</i>	prickly lettuce
	<i>Lasthenia californica</i>	California goldfields
	<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed
	<i>Senecio vulgaris</i>	ragweed
	<i>Silybum marianum</i>	milk thistle
	<i>Sonchus oleraceus</i>	common sowthistle
	<i>Taraxacum officinale</i>	dandelion
<i>Tragopogon porrifolius</i>	purple salsify	
Boraginaceae	<i>Heliotropium curassavicum var. oculatum</i>	seaside heliotrope
Brassicaceae	<i>Brassica nigra</i>	black mustard
	<i>Brassica sp.</i>	wild mustard
	<i>Hirschfeldia incana</i>	short-podded mustard
	<i>Raphanus sativus</i>	wild radish
	<i>Sisymbrium officinale</i>	hedge mustard

**Attachment C (cont.)
PLANT SPECIES OBSERVED**

FAMILY	SCIENTIFIC NAME	COMMON NAME
Dicots (cont.)		
Chenopodiaceae	<i>Atriplex lentiformis</i> spp. <i>lentiformis</i>	big salt bush
	<i>Atriplex rosea</i>	tumbling oracle
	<i>Atriplex suberecta</i>	sprawling saltbush
	<i>Bassia hyssopifolia</i>	five-horned smotherweed
	sea beet	<i>Beta vulgaris</i> ssp. <i>maritima</i>
	<i>Chenopodium album</i>	goosefoot
	Annual pickleweed	<i>Salicornia depressa</i>
	<i>Salicornia rubra</i>	red saltwort
	<i>Sarcocornia (Salicornia) pacifica</i>	Pacific swampfire
	<i>Salsola soda</i>	opposite leaf Russian thistle
Convolvulaceae	<i>Convolvulus arvensis</i>	field bindweed
Fabaceae	<i>Acacia cyclops</i>	red-eyed wattle
	<i>Acacia decurrens</i>	green wattle
	<i>Lotus corniculatus</i>	birdsfoot trefoil
	<i>Medicago polymorpha</i>	bur clover
	<i>Trifolium hirtum</i>	rose clover
	<i>Vicia sativa</i>	common vetch
Frankeniaceae	<i>Frankenia salina</i>	alkali sea-heath
Geraniaceae	<i>Geranium dissectum</i>	cut-leaf geranium
Lamiaceae	<i>Marrubium vulgare</i>	horehound
Malvaceae	<i>Malva parviflora</i>	cheeseweed
Myrtaceae	<i>Eucalyptus globulus</i>	blue gum
	<i>Eucalyptus polyanthemos</i>	silver dollar gum
Papaveraceae	<i>Eschscholzia</i> sp. (vegetative)	poppy
Plantaginaceae	<i>Plantago coronopus</i>	cut leaf plantain
Polygonaceae	<i>Polygonum aviculare</i>	common knotweed
	<i>Rumex crispus</i>	curly dock
Rosaceae	<i>Heteromeles arbutifolia</i>	toyon
Solanaceae	<i>Nicotiana glauca</i>	tree tobacco

**Attachment C (cont.)
PLANT SPECIES OBSERVED**

FAMILY	SCIENTIFIC NAME	COMMON NAME
Monocots		
Poaceae	<i>Avena fatua</i>	wild oats
	<i>Bromus catharticus</i>	rescuegrass
	<i>Bromus diandrus</i>	ripgut brome
	<i>Bromus hordeaceus</i>	smooth brome
	<i>Bromus madritensis</i>	foxtail chess
	<i>Cortaderia jubata</i>	pampas grass
	<i>Cynodon dactylon</i>	Bermuda grass
	<i>Distichilis spicata</i>	coastal salt grass
	<i>Festuca perennis</i>	Italian rye grass
	<i>Hordeum marinum ssp. gussoneanum</i>	Mediterranean barley
	<i>Hordeum marianum</i>	seaside barley
	<i>Hordeum sp.</i>	barley
	<i>Leymus triticoides</i>	creeping wildrye
	<i>Polypogon maritimus</i>	maritime rabbit's-foot grass
	<i>Stipa miliacea var. miliacea</i>	smilo grass

*Scientific and common names from Baldwin 2012

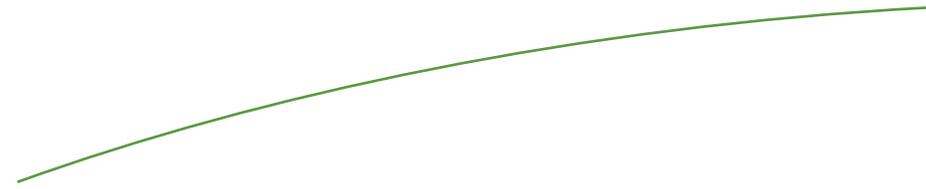
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Appendix F

LETTER FROM DR. GRETCHEN E. PADGETT-FLOHR,
CALIFORNIA ENVIRONMENTAL SERVICES, LLC TO
DR. STEPHEN NEUDECKER, RESOURCE BALANCE,
REGARDING RESEARCH CONDUCTED IN THE PROJECT
SITE INVESTIGATING THE USE OF DISTURBED HABITATS
(SUCH AS THE PROJECT SITE) BY SALT MARSH HARVEST
MOUSE (REITHRODONTOMYS RAVIVENTRIS).

OCTOBER 2014



TO Dr. Steven Neudecker
RESOURCE BALANCE
313 Glen Creek Drive, Suite 100
Bonita, CA 91902-4279

October 3, 2014

Dear Dr. Neudecker,

Thank you very much for facilitating my research investigating the use of disturbed habitats by salt marsh harvest mouse (*Reithrodontomys raviventris*). Providing access to the site in Newark, California was a key piece of the research as this highly disturbed site is located very close to known salt marsh harvest mouse (SMHM) occurrences at the nearby San Francisco Bay Don Edwards National Wildlife Refuge (Don Edwards). Having trapped extensively at Don Edwards, I am very familiar with the distribution and abundance of SMHM at Don Edwards and was most curious to see if those animals would utilize the disturbed uplands that surround the refuge. I am providing you with the methods and results of the research on the site; however, as this is the first of 11 sites, I do not have any statistical analysis as yet to share with you on the overall use of disturbed upland habitat by the species.

STUDY SITE

Site 1 consists of approximately 55-acres, located west of Hickory Street in Newark (Figure 1), California, and is characterized by rolling topography with an average elevation approximately six to 10 feet or more above sea level (amsl). The Property is adjacent to Plummer Creek and the Wildlands Plummer Creek Mitigation Bank, but is no longer subject to tidal influence. Parcel 1 is located in the southeastern area of the San Francisco Bay in the City of Newark, California. It is within the Dumbarton Transit Oriented Development Specific Plan Area, which is comprised of former industrial parcels planned for future transit oriented development. The Property is bounded to the north by a former industrial facility owned and operated by FMC Corporation, to the east by vacant formerly industrial parcels, to the south by the Wildlands' Plummer Creek Mitigation Bank, and to the west by active salt production basins used in the solar salt production process. The Don Edwards National Wildlife Refuge is located to the west and north of the salt ponds that are immediately west of the Property (Figure 1).

Terrain in the area is characterized by a series of natural hills; soil stockpile storage areas placed in upland areas; and man-made basins. The surface elevations range from about 8 to 10 feet amsl, and it contains a bedrock outcrop approximately 26 feet amsl, and stockpile storage areas that reach 30 to 35 feet amsl. Bedrock outcrop is located in the southeastern portion of the site, and is comprised of serpentine bedrock that contains chrysotile, a form of naturally occurring asbestos.

The Property has been used in the past for industrial and recreational activities and a police training ground. Those activities have resulted in the construction and operation of settling basins associated with the manufacture of magnesia-containing products, excavation of ditches, removal of rock, and the placement of stockpile materials in upland areas. Access roads circumnavigate the Property, and large areas are used for equipment parking/staging. Construction equipment and materials are present in the northern portion. The settling basins in the northwestern portion of the Property were constructed primarily in uplands as part of the industrial processes to settle out salts from processing water from the former FMC facility. Before World War II, a recreational pistol range was present in the southeastern portion of the Property and following World War II, from 1969 to 1995, the Newark Sportsmen's Club operated a skeet shooting range. The Property has also been subject to several clean up actions

completed under State supervision. In 2001, the owner entered into a voluntary cleanup agreement with the Regional Water Quality Control Board and several inches of topsoil containing lead and asphaltic skeet targets containing polycyclic aromatic hydrocarbons were excavated and disposed of offsite. The areas were left to recover naturally and the RWQCB certified case closure in 2004.

The City of Newark has leased an area in the southeastern portion of the Property for use as a police pistol range since 1975, but use of lead shot was discontinued approximately 6 to 8 years ago. The City of Newark Police Department is currently using the Property for a pistol range and as a dog-training facility. Rifle shells and skeet fragments were observed in the southern portion of the Property during the wetland delineation fieldwork on August 6 and 13, 2013. Structures associated with the dog-training facility occur in the southeast portion of the Property as well as parking areas, pet relief areas, and mowed/maintained training areas.

METHODS

Small Mammal Live-trapping

Thirty-six sample sites were identified through random selection using Global Positioning System (GPS) Coordinates (Figure 2). A numbered grid with 100 roughly equal-sized blocks was placed over an aerial map of the site and 36 blocks were randomly chosen as sample locations using a random number generator. The active dog training facility located in the southeastern corner of the site was excluded from the random trapping site selection. GPS coordinates were then obtained for each of the 36 randomly chosen blocks. A GPS unit was used to locate the sample locations in the field.

Live-trapping began September 8, 2014 and concluded September 12, 2014. At each randomly-selected trapping location, three Sherman live-traps were placed and completely covered with vegetation for insulation to reduce nocturnal heat loss and dew condensation. Sherman live-traps were baited with a mixture of walnut meats and birdseed and provided with cotton nesting material. Traps were checked each morning within an hour of sunrise, closed during the day and then re-opened each evening within an hour of sunset. All small mammals captured were identified, sexed and released. The physical data and trap locations were recorded on data sheets.

Vegetation Characterization

For the general vegetation characterization, the entire area within which trapping was conducted was surveyed on foot. All habitat types occurring in the survey area were characterized, and data were recorded on physiognomy, dominant and characteristic species, topographic position, slope, aspect, substrate conditions, hydrologic regime, and evident disturbance for each habitat type. Baldwin et al. (2012) was consulted for plant identifications.

To record the vegetation composition at each small mammal sample location, a 1m×1 m quadrat frame made from PVC pipe and gridded with string into 10cm×10 cm squares was used. At each trap site, the quadrat frame was positioned so that the three traps were centered within the frame. All vascular plant species occurring within the quadrat (i.e., all species whose vertical projection, or any portion of whose vertical projection, fell within the quadrat frame) were recorded as well as the estimated percent cover of each species and/or bare ground (including litter) within the quadrat.

RESULTS

Small Mammal Live-trapping

A total of six house mice (*Mus musculus*) were captured in 443 trap nights. Captures occurred at four locations as shown in Table 1 and Figure 2. No other species were captured.

Table 1: Small Mammal Capture Data at Site 1.

Date	Species Captured	Trap #
09-09-2014	<i>Mus musculus</i>	9
09-10-2014	<i>Mus musculus</i>	26
09-10-2014	<i>Mus musculus</i>	18
09-11-2014	<i>Mus musculus</i>	32
09-11-2014	<i>Mus musculus</i>	9
09-12-2014	<i>Mus musculus</i>	32

Vegetation Characterization

The data from the quadrat sampling was recorded in a spreadsheet and archived for future analysis when salt marsh harvest mouse trapping and associated vegetation data collection is performed at additional sites. Three habitat types occur in the trapping areas: ruderal grassland, ruderal grassland – alkaline/saline, and pickleweed flat. The former two habitat types occupy upland (although sometimes low-lying) areas. The pickleweed flat habitat type occupies the lowest-lying areas, which apparently were subject to tidal influence before extensive diking of the area took place.

Ruderal Grassland. (Trap sites 3, 5, 9, 12, 15, 22, 24, 25, 28, 29, 31, 34, 37). This habitat type appears to have been subject to heavy and repeated past disturbance. It is heterogeneous in species composition, but is quite ruderal in character and is largely dominated by weedy non-native grasses and herbs, with some native species. The vegetation is mostly dense, generally with 100 percent cover or nearly so. The native shrub coyote brush (*Baccharis pilularis* ssp. *consanguinea*) is scattered and locally moderately abundant, although absent from some areas. Dominant grasses are predominantly annual and non-native, and include ripgut grass (*Bromus diandrus*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), wild oat (*Avena* sp.), Italian ryegrass (*Festuca perennis*, may be annual, biennial, or perennial), and soft chess (*Bromus hordeaceus*). The moderately large, clumped non-native perennial grass smilo grass (*Stipa miliacea* var. *miliacea*) is sporadic, but locally moderately abundant. Associated herbs, many of which are only sporadically distributed, include willow-leaf lettuce (*Lactuca saligna*), prickly lettuce (*Lactuca serriola*), black mustard (*Brassica nigra*), curly dock (*Rumex crispus*), fennel (*Foeniculum vulgare*), and Italian thistle (*Carduus pycnocephalus*). A large shrub, tentatively identified as big saltbush (*Atriplex lentiformis*), occurs locally, mostly along the bases of elevated berms. Big saltbush is not treated as native to this area by Baldwin et al. (2012); it is native from the Sacramento-San Joaquin delta southward through the inner south Coast Ranges and San Joaquin Valley to southern California, and therefore may be introduced on this site.

Ruderal Grassland – Alkaline/Saline. (Trap sites 7, 8, 13, 16, 20, 23, 30, 32, 33, 36, 38, 39, 40). This habitat type is not sharply distinct from the ruderal grassland habitat type. The two habitat types share many of the same dominant and characteristic species and intergrade extensively on the site. However, this habitat type apparently occupies areas with more alkaline or saline soil than the typical ruderal grassland. It is characterized by the presence of a number of native and non-native species characteristic of alkaline or saline soils. These include the subshrub alkali heath (*Frankenia salina*) and herbaceous species including saltgrass (*Distichlis spicata*), five horn bassia (*Bassia hyssopifolia*), and, more locally, seaside heliotrope (*Heliotropium curassavicum*), sea beet (*Beta vulgaris* ssp. *maritima*), and sprawling saltbush (*Atriplex suberecta*).

Pickleweed Flat. (Trap sites 1, 2, 6, 10, 18, 19, 16, 26, 27, 35). This habitat type occurs in low-lying areas that are mostly level or nearly so. It could be characterized as remnant coastal salt marsh whose

ecological character has been altered by diking. Areas occupied by this habitat type are apparently never inundated at the present time, except perhaps briefly due entirely to precipitation runoff during times of heavy rains. However, it is presumed that these areas were subject to tidal influence prior to extensive diking in the area, and were then more or less typical coastal salt marsh approximately 70 years ago. The pickleweed flat areas are largely dominated by the low shrub pickleweed or Pacific swampfire (*Salicornia pacifica*), with alkali heath a common woody associate. The cover of these woody species is locally as high as 60 or 70 percent, although often less. Herbaceous associates are mostly non-native grasses and herbs, including Mediterranean barley, Italian ryegrass, slender-leaved iceplant (*Mesembryanthemum nodiflorum*). Large areas within this habitat type have little or no woody vegetation and are sparsely vegetated with annual herbs including glasswort or annual pickleweed (*Salicornia depressa*) and slender-leaved iceplant. One localized anomalous area within this habitat type (in the vicinity of trap site 26) has hummocky microtopography and is largely dominated by alkali heath and saltgrass, with pickleweed a less abundant associate.

CONCLUSIONS

Although salt marsh harvest mouse is known to use upland habitat that is contiguous with native salt marsh habitat, it is apparent that the species does not occur on this site nor does this site provide any of the principal constituent components necessary for the species. The species requires thick, dense stands of perennial pickleweed intermixed with other halophytic species that are mid-range in salinity level. Site 1 does not have these habitat components as it has been diked and highly disturbed and altered for the past 70 years.

The lack of tidal influence has created habitat that alternates between hypersaline to upland. Much of the site is vegetated by abundant, widespread upland and ruderal plant species. What little pickleweed is present is very saline as evidenced by the short stature of the plant. Perennial pickleweed is a salt partitioner and as a result, the plants are very short when salinity is high. Salt marsh harvest mouse is absent from sites that are hypersaline or have no salinity due to the lack of tidal influence and accumulation of precipitation (Padgett-Flohr and Isakson 2003). Site 1 has both characteristics and is isolated from areas of high-quality salt marsh habitat by significant barriers (e.g., roads and large, continuous pipes for Cargill salt mining surrounding the site). It is therefore not surprising that salt marsh harvest mouse was not captured during the study.

Site 1 is depauperate in small mammal species, as the only species captured was the non-native, house mouse. There was no sign (i.e., small mammal trails, runways or burrows) of meadow vole (*Microtis californicus*) or western harvest mouse (*R. megalotis*) that typically inhabit upland habitat. In addition, no birds were observed using the vegetation on the site, which was also atypical. Despite sampling throughout Site 1, house mouse was only captured at the western periphery of Site 1 indicating that even that undesirable species has little use for Site 1.

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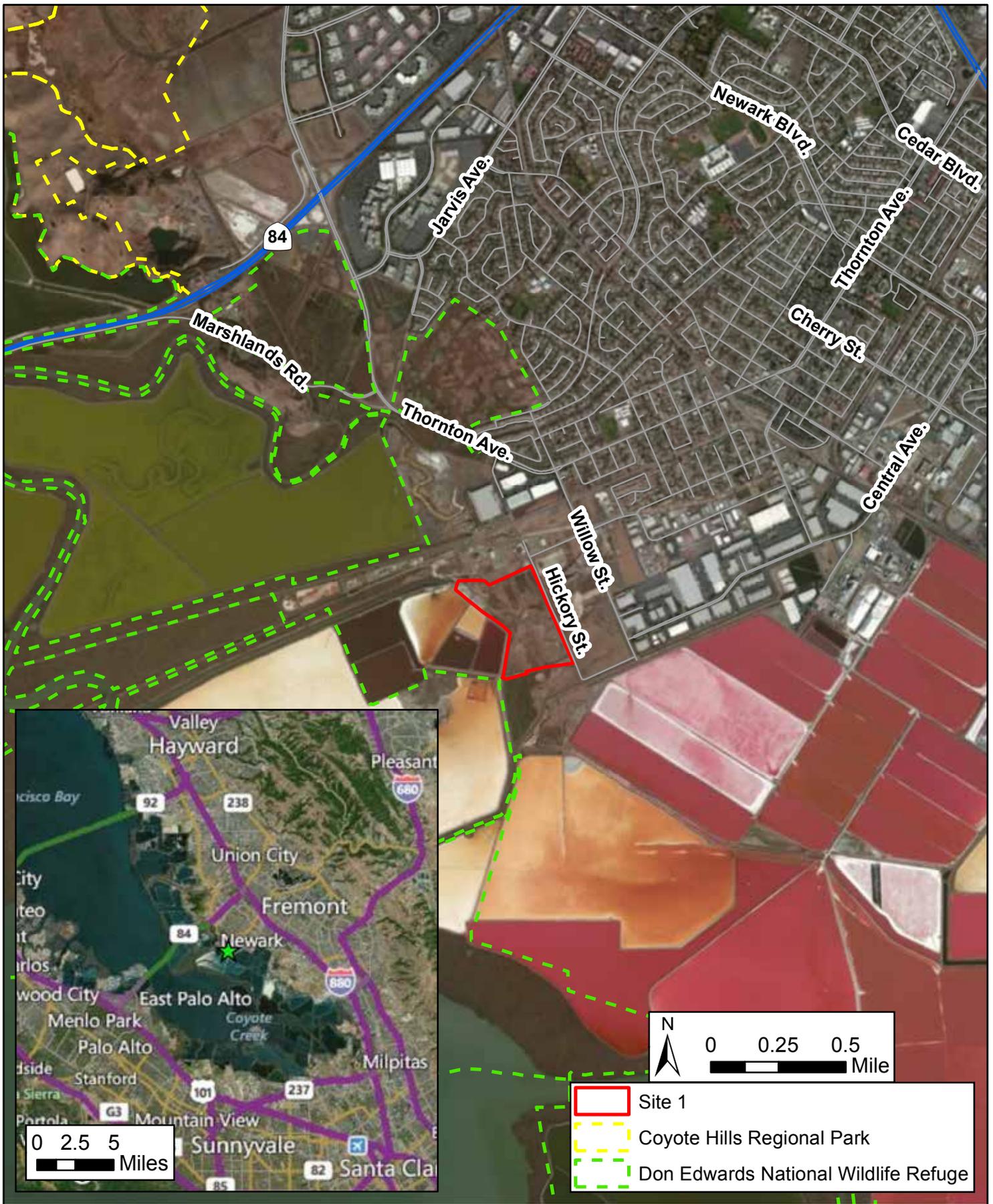
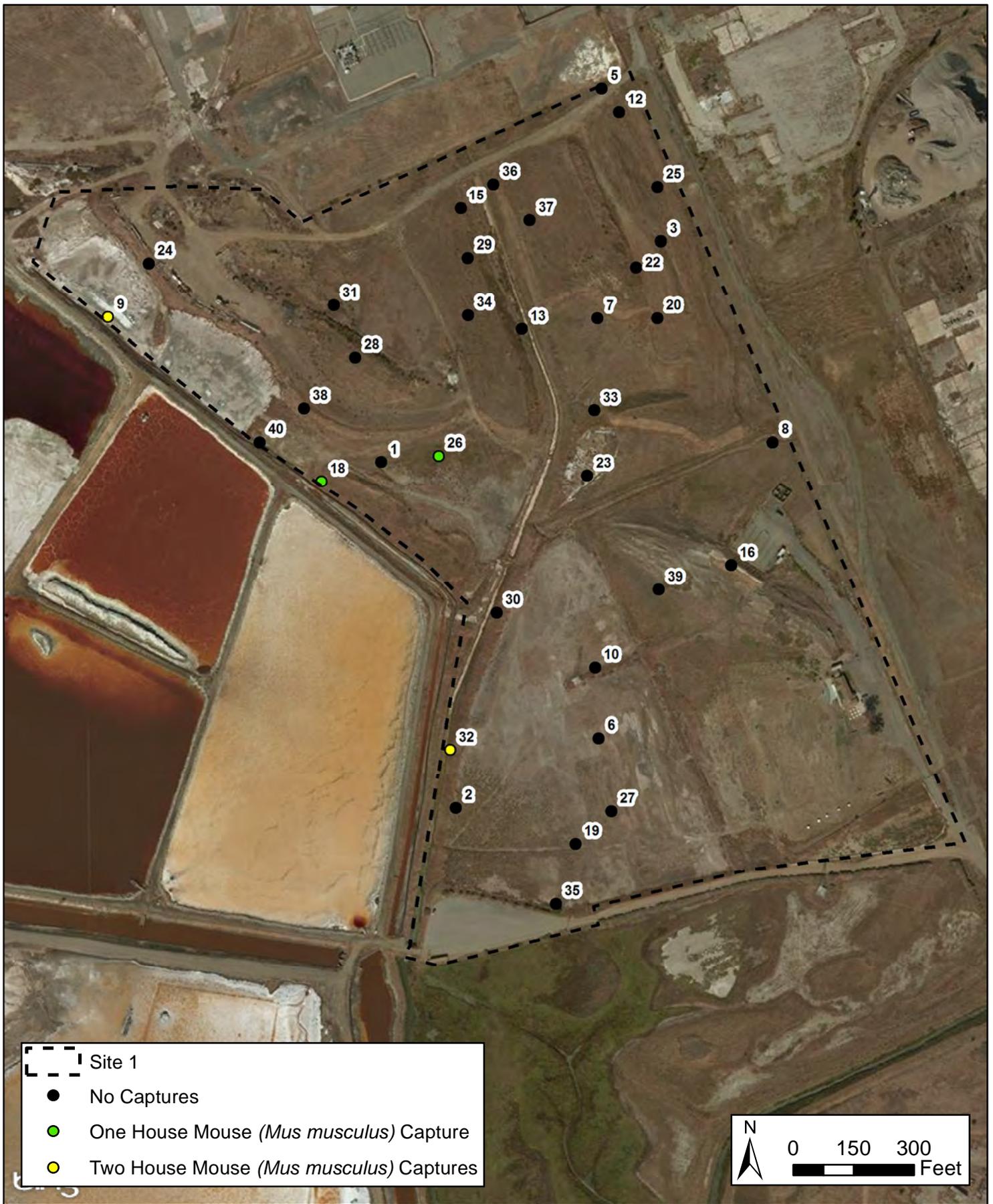


Figure 1: Site 1 Project Location Map
Salt Marsh Harvest
Mouse Research Project



Photographs



Photograph 1:

Northwest corner of Site 1 with Don Edwards Wildlife Refuge in the distance

September 12, 2014



Photograph 2:

Western boundary of Site 1 abutting Cargill Salt Ponds.

September 12, 2014

Photographs Continued



Photograph 3:

Site 6 in sparse perennial pickleweed next to a field of annual pickleweed.

September 12, 2014



Photograph 4:

Trap Site #18 where one house mouse was captured.

September 12, 2014

Photographs Continued



Photograph 5:

House mouse (*Mus musculus*) was the only species captured.

September 12, 2014



Photograph 6:

A total of six house mice (*Mus musculus*) were captured.

September 12, 2014

Photographs Continued



Photograph 7:

Trap Site #26
where one
house mouse
was captured.

September 12,
2014



Photograph 8:

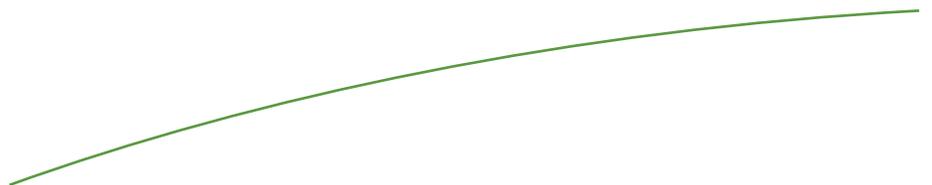
Trap Site #32
where two
house mice
were captured.

September 12,
2014



Appendix G

GATEWAY STATION WEST —
OFF-SITE IMPROVEMENT AREAS,
NEWARK, CALIFORNIA:
HABITAT ASSESSMENT FOR SALT MARSH
HARVEST MOUSE





April 18, 2015

Dr. Stephen Neudecker
313 Glenn Creek Drive, Suite 100
Bonita, CA 91902-4279

**SUBJECT: Gateway Station West - Off-Site Improvement Areas, Newark, California:
Habitat Assessment for Salt Marsh Harvest Mouse**

Dear Dr. Neudecker,

Per your request, Dr. Gretchen Padgett-Flohr, a 10(a)(1)(A) Salt Marsh Harvest Mouse-permitted mammalogist (PRT # TE006112-6) conducted a habitat assessment for Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*) on Monday, March 30, 2015, at the properties collectively identified as the Gateway Station West - Off-site Improvement Areas located at the intersection of Willow Street and Enterprise Drive in the City of Newark, Alameda County, California. This report summarizes the results of the habitat assessment for the Off-Site Improvement Areas.

PROPERTY LOCATION

The Off-site Improvement Areas are located in southwestern Alameda County within the City of Newark, California and adjacent to the Gateway Station West project. The term "Off-site Improvement Areas" collectively refers to three areas which include a 1.60-acre segment of Hickory Street adjacent to the northeast corner of the Gateway Station West project site within the City of Newark Right-of-Way (ROW) (hereafter referred to as "Hickory Street ROW"), a 0.6-acre portion of "Avenue A" that extends from the western boundary of the SHH Property westward to Hickory Street (hereafter referred to as "Avenue A"), and a 0.054-acre culvert easement adjacent to the southwest corner of the Gateway Station West project site (hereafter referred to as "Culvert Easement") (Figure 1).

The Hickory Street ROW is located on Hickory Street adjacent to the northeast corner of the Gateway Station West project site and is bounded to the north by Enterprise Drive (formerly Wells Ave) which terminates at the northern boundary of the Hickory Street ROW. "Avenue A" is located adjacent to the Hickory Street ROW and extends eastward to the SHH Property along the northern boundary of the Torian Property. The Culvert Easement is located in the southwest corner of the Gateway Station West project site below the Cargill access road. The Off-Site Improvement Areas are located in Section 11 of Township 5 South, and Range 2 West of the U.S. Geological Survey's 7.5-minute "Newark, California" quadrangle map. The approximate center of the Off-Site Improvement Areas is at latitude: 37.520571 N, longitude: 122.053409 W, NAD 83.

BACKGROUND

The proposed Gateway Station West project, as well as the infrastructure improvements proposed within the Off-site Improvement Areas, is a component of the Dumbarton Transit - oriented Development Specific Plan and is being evaluated under the Gateway Station West Project Supplemental Environmental Impact Report in compliance with the California Environmental Quality Act.

LOCATION DESCRIPTION

Terrain at the Hickory Street ROW consists primarily of a relatively flat, undeveloped aggregate road. Several vegetated depressions, as well as a drainage ditch, exist on the western side between the undeveloped road and the Gateway Station West project site. The Hickory Street ROW has been used in the past as a road, allowing access to the City of Newark Shooting Range and Police Dog Training Facility. Hickory Street continues southward from the Off-site Improvement Area and terminates at Central Avenue at its furthest western end. "Avenue A" is also relatively flat with some wetland depressions along the southern and eastern boundaries. The surface elevations of the Hickory Street ROW and "Avenue A" range from approximately 5 to 9 feet above mean sea level. The Culvert Easement is comprised primarily of a drainage ditch and seasonal wetland with some disturbed upland areas on berms around the ditch. A wood platform with pumping equipment is located directly above the culvert.

SPECIES OF INTEREST

Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*)

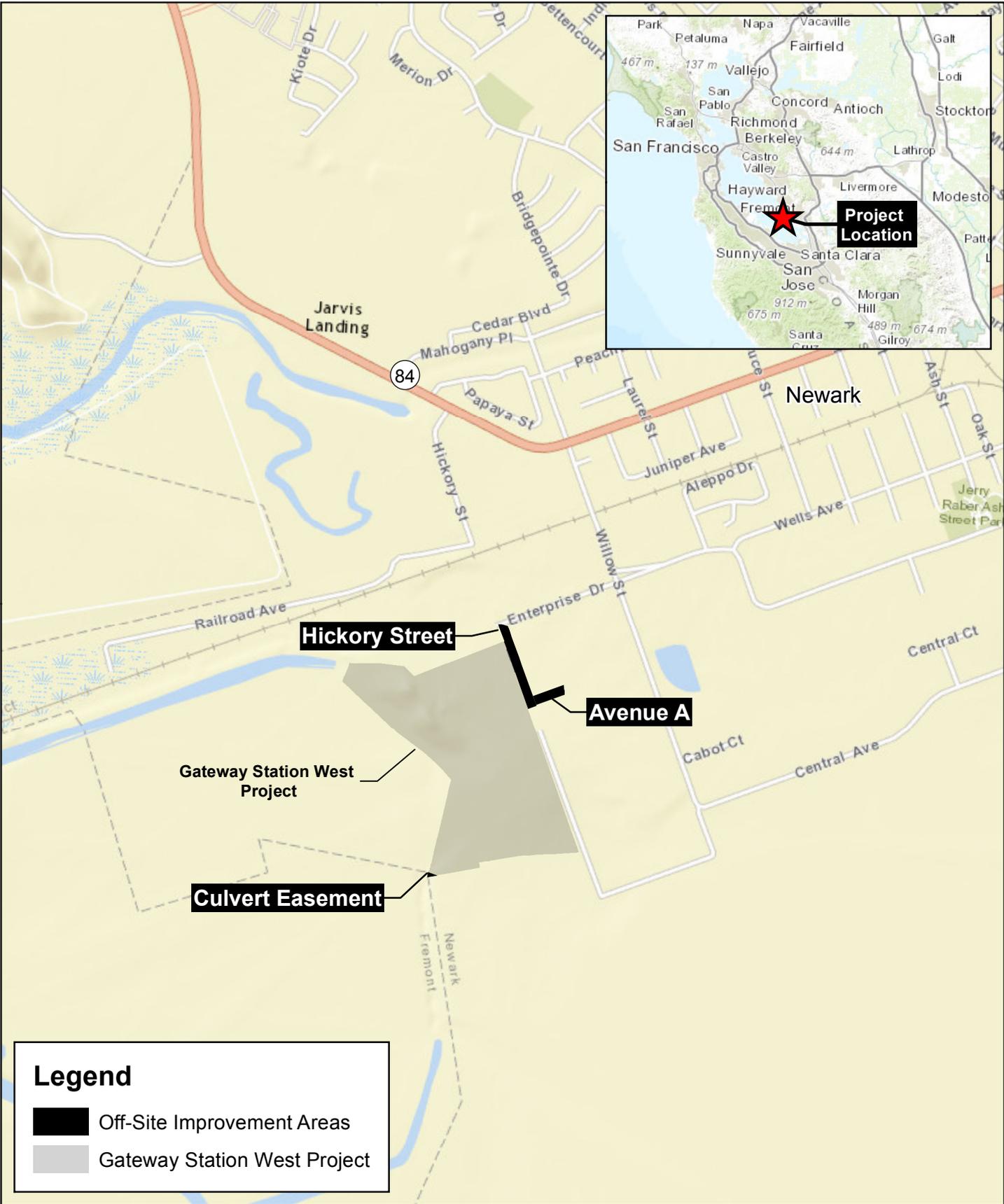
Salt Marsh Harvest Mouse (SMHM) is a federal- and state-listed endangered species endemic to the salt and brackish marshes of the San Francisco Bay and the Napa, Petaluma, San Pablo, and Suisun Bay salt marshes. Current literature suggests that SMHM evolved in the San Francisco Bay Area from parental stock of harvest mice approximately 25,000 years ago (Nelson *et al.* 1984).

Harvest mice (*Reithrodontomys* spp.) in general, are small, delicate mice with nearly nude tails



and the genus is easily identified by the distinctive pronounced groove on the upper incisors (Jameson and Peters 1986), which other small rodent genera [e.g. house mouse (*Mus musculus*)] do not exhibit. SMHM measure approximately 118 to 175 mm in total (adult) length and display a venter that varies from white to red throughout the range of the species (Fisler 1965). The average lifespan in the wild is approximately one year, although SMHM have been known to live for up to three years under laboratory conditions (Fisler 1965).

The listing of *Reithrodontomys raviventris* includes two subspecies: *Reithrodontomys raviventris raviventris* (the southern subspecies) and *Reithrodontomys raviventris halicoetes* (the northern subspecies). *R. r. halicoetes* is found in Marin County, and throughout the Petaluma, Napa and



S:\PROJECTS\DAT-ALL\DAT-01_Cargill\GIS\MXD\Hickory JD\Figure 1_Regional Location Map - ORIGINAL.mxd DAT-02_03/09/15 -JH

Base Map: USGS, ESRI 2014 Map Date: 11-21-2014

Site and Vicinity Map
 GATEWAY STATION WEST
 OFF-SITE IMPROVEMENT AREAS

Figure 1

Suisun Bay marshes. The North Bay marshes inhabited by this subspecies experience a higher variation in salinity levels, but have a lower average salinity than that found in the South San Francisco Bay. The North Bay has experienced an increase in salinity with a corresponding increase in halophytic vegetation [e.g. pickleweed (*Salicornia* [= *Sarcocornia*] *virginica*) over the last 150 years, due to diking and filling of the marshes and reduced river flows into the Delta from upstream dams and water diversions of the San Joaquin and Sacramento Rivers. Evolving under slightly different environmental conditions than its southern counterpart, *R. r. halicoetes* exhibits slightly different characteristics and is genetically distinct from the disjunct southern subspecies (Fisler 1965). Two important behavioral and physiological differences between the two subspecies are that *R. r. halicoetes* has the ability to drink seawater, but does not have the ability to become torpid. In addition to these behavioral and physiological differences, *R. r. halicoetes* does not have the red belly that gave the southern subspecies its name. The northern subspecies generally has a white-gray/white venter, with some clinal variation and is therefore much more challenging to differentiate from the sympatric western harvest mouse (*R. megalotis*). In general, the North Bay subspecies has a tail-to-body ratio that is greater than 100 percent, although there is a certain amount of variation in this particular trait. The Collinsville population of SMHM is the most extreme case, exhibiting a tail-to-body ratio in the 115 to 130 percent range in one study conducted in the area (G. Padgett-Flohr, unpub. data).

In contrast, the South Bay, where the southern subspecies (*R. r. raviventris*) is found, has little variation in salinity, but the average salinity level is much higher than that in the North Bay. *R. r. raviventris* does not drink sea water, but it does possess the ability to enter a state of torpor (Fisler 1965). The southern subspecies was named for its distinctive red belly, although this characteristic can show variation and is consistent only in the Alviso area of the southernmost part of the Bay. Tail-to-body ratios of the southern subspecies tend to fall under 100 percent, although this measurement can have large variation and is not considered to be a diagnostic characteristic.

Past studies have shown that optimal habitat for *R. raviventris* is a thick cover of pickleweed complexly interwoven with other halophytic plants such as fat hen (*Atriplex patula*), and alkali heath (*Frankenia grandifolia*) (Shellhammer *et al.* 1982, Shellhammer 1984, and Johnson *et al.* 1984). In diked marshes particularly, SMHM are highly dependent on plant cover. In addition to vegetation density, the salinity level in pickleweed is also an important component of the microhabitat and mid-range levels of salinity in pickleweed has been shown to be correlated with the presence of SMHM in diked marshes (Padgett-Flohr and Isakson 2003). SMHM were found to be absent from sites with low salinities, and infrequent in areas where pickleweed was high in salinity (Padgett-Flohr and Isakson 2003). Pickleweed height was formerly considered to be a key habitat requirement of SMHM; however, during her study conducted at New Chicago Marsh in 1996, Dr. Padgett-Flohr tested this variable using a random sampling scheme and found that this correlation was not supported (Padgett-Flohr SJSU Senior Thesis 1996). There was no significant association between SMHM and pickleweed height. Geissel *et al.* (1988) found that the height of a pickleweed plant is inversely correlated to the salinity level within the plant, meaning that the more saline the plant the shorter the plant. As Padgett-Flohr and Isakson demonstrated (2003), SMHM presence is statistically correlated with pickleweed containing a mid-range level of salinity (500-699 mmol/kg Cl⁻). Mid-range levels of salinity can

typically only be achieved by regular tidal influence. Diked marshes lacking tidal influence become either freshwater or hypersaline (Zedler and Adam 2002; Gedan et al. 2009) and do not provide the salinity levels that SMHM need or can tolerate.

SMHM therefore, require habitat that is dominated by dense, contiguous stands of halophytic vegetation that retains a mid-range level of salinity. Recurrent, but shallow flooding by saline water is likely needed to maintain habitat conditions that favor SMHM (Padgett-Flohr and Isakson 2003; USFWS 2013).

METHODS

Background and Research

The California Natural Diversity Database (CNDDDB) was queried to identify all documented occurrences of SMHM within 5 miles of the Off-Site Improvement Areas over the last 30 years.

Field Visit

Dr. Padgett-Flohr conducted a site visit and habitat assessment of the Off-site Improvement Areas on March 30, 2015. The three Off-site Improvement Areas were surveyed and assessed for potential suitability for SMHM.

RESULTS

Background and Research

CNDDDB documents two occurrences of SMHM within 1 mile of the Off-site Improvement Areas. One occurrence was documented in 2001 located 0.41 mile from the Off-site Improvement Areas at the San Francisco National Wildlife Refuge (NWR) at Dumbarton Point south of Highway 84 and one occurrence was documented in 1989 located 0.56 mile from the Off-Site Improvement Areas on the Mayhews Landing site located east of Jarvis Road and Thornton Avenue. Seventeen additional occurrences are reported from 1984 and 1991 ranging from 1.17 to 4.85 miles from the Off-site Improvement Areas as shown in Figure 2.

Field Visit

All three Off-site Improvement Areas are highly altered parcels of land that consist of upland, non-native, ruderal vegetation as shown in Attachment A: Photographs 1 and 2. There is no pickleweed present in the Hickory Street ROW and Avenue A. The Culvert Easement site includes a small segment of a constructed tidally-influenced tributary to Plummer Creek and a narrow band of brackish wetland vegetation with a marginal amount of pickleweed as shown in Attachment A: Photographs 3 and 4.

DISCUSSION

The Hickory Street ROW and Avenue A sites are not suitable habitat for SMHM. These sites are not subject to tidal influence, lack pickleweed, and are vegetated with upland, non-native grasses; thus, SMHM would not be present and would not be expected to travel through these areas as they are not adjacent to suitable pickleweed or salt marsh habitat.

The Culvert Easement area is also unsuitable for SMHM. In Fall 2014, I conducted a SMHM research project and performed SMHM trapping within and around the culvert as well as across

the entirety of the Gateway Station West project area. No SMHM were captured; in fact, no small mammals of any species were captured in or adjacent to the Culvert Easement area. The very small amount of pickleweed present at the Culvert Easement area is intermixed with, and dominated by, non-native annual grasses and does not constitute suitable habitat for the species. SMHM require dense, large tracts of pickleweed and associated halophytic vegetation, which is not present within the Culvert Easement area. Although it is adjacent to Plummer Creek Mitigation Site, which contains appropriate salt marsh habitat, there is only a marginal possibility that SMHM is present in the mitigation site as there are no CNDDDB records documenting the species there. Further, the nearest occurrences of SMHM are documented at NWR located north and northwest of the Culvert. Large tracts of unsuitable habitat and barriers from roads and industrial development isolate the NWR from the Culvert Easement area and surrounding property, including Plummer Creek Mitigation Site.

It is my professional opinion that the three Off-Site Improvement Areas do not contain habitat suitable to support SMHM and that SMHM will not occur within these parcels.

A handwritten signature in black ink that reads "Gretchen Padgett-Flohr". The signature is written in a cursive, flowing style.

Dr. Gretchen E. Padgett-Flohr



Figure 2: CNDDDB Documented Occurrences of Salt Marsh Harvest Mouse Within 5-miles of Off-site Improvement Areas

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Attachment A: Representative Photographs

Photographs



Photograph 1:

Avenue A is composed of Upland Habitat dominated by non-native grasses.

March 30, 2015



Photograph 2:

Hickory Street Right-of-Way is highly altered ruderal habitat dominated by non-native grasses.

March 30, 2015



Photograph 3:

Banks of the channel where the culvert is planned is also dominated by non-native grasses.

March 30, 2015



Photograph 4:

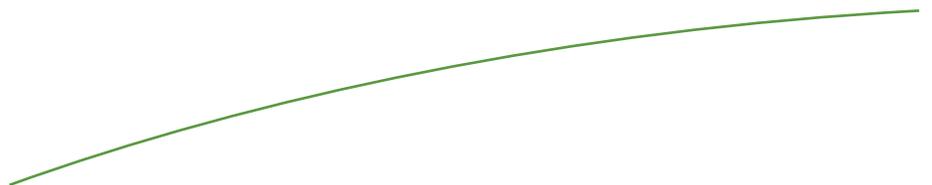
Banks of the channel where the culvert is planned showing pepper grass, non-native annual grasses and mustard.

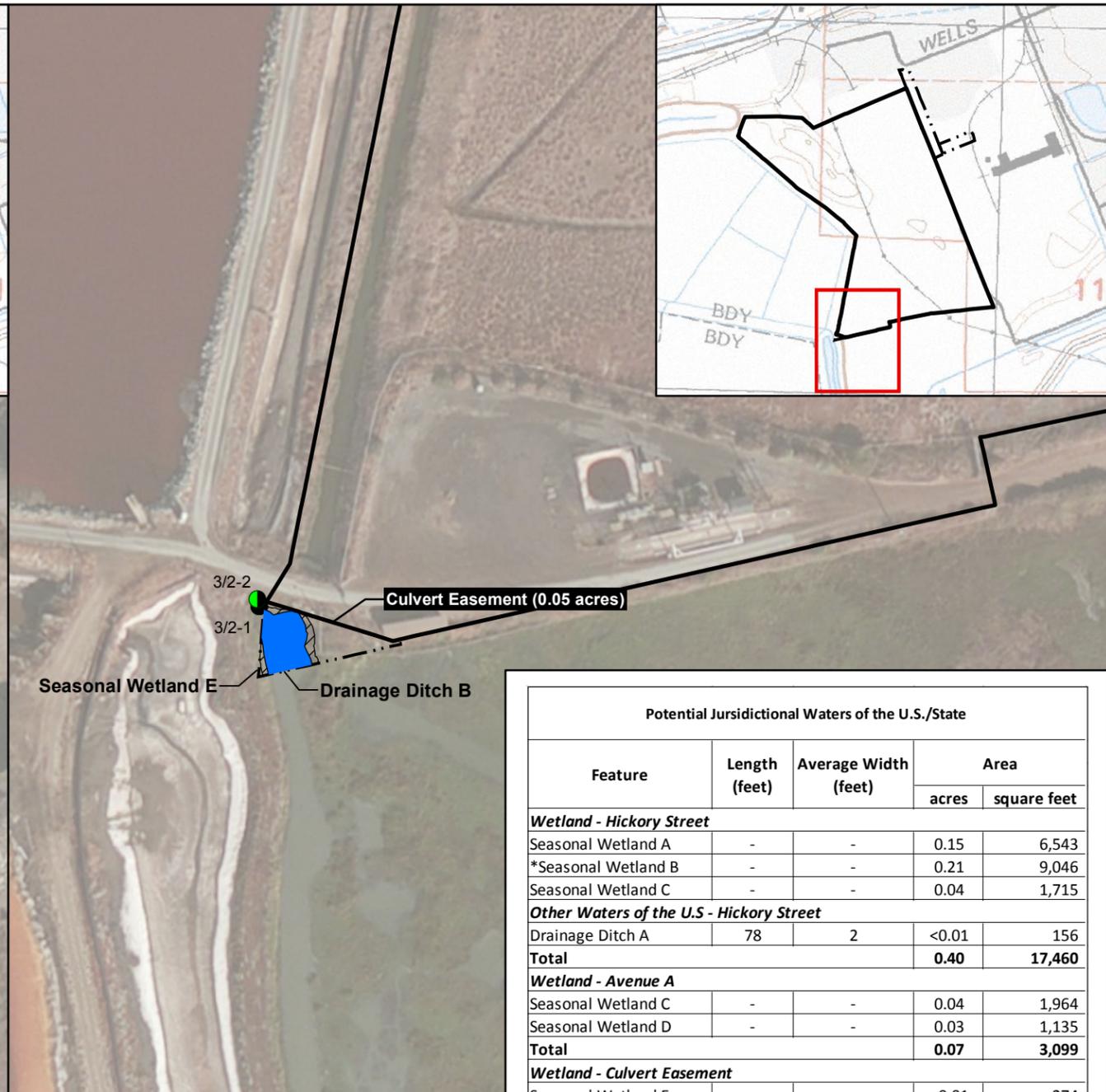
March 30, 2015



Appendix H

DELINEATION OF POTENTIAL
JURISDICTIONAL WATERS OF THE
UNITED STATES, GATEWAY STATION WEST
OFF-SITE IMPROVEMENT AREAS PROJECT,
CITY OF NEWARK, CALIFORNIA





REVISIONS		
DATE	DESCRIPTION	BY

DRAWN BY: J. Honeycutt
 DELINEATORS: S. Stringer, J. Honeycutt
 DATE OF FIELD WORK: 10-20-2014, 02-28-2015, 03-02-2015
 DATE OF AERIAL PHOTOGRAPH: 10-26-2010 (Esri)
 Notes: The boundaries and jurisdictional status of all waters shown on this map are preliminary and subject to verification by the U.S. Army Corps of Engineer.

Potential Jurisdictional Waters of the U.S./State				
Feature	Length (feet)	Average Width (feet)	Area	
			acres	square feet
Wetland - Hickory Street				
Seasonal Wetland A	-	-	0.15	6,543
*Seasonal Wetland B	-	-	0.21	9,046
Seasonal Wetland C	-	-	0.04	1,715
Other Waters of the U.S - Hickory Street				
Drainage Ditch A	78	2	<0.01	156
Total			0.40	17,460
Wetland - Avenue A				
Seasonal Wetland C	-	-	0.04	1,964
Seasonal Wetland D	-	-	0.03	1,135
Total			0.07	3,099
Wetland - Culvert Easement				
Seasonal Wetland E	-	-	<0.01	274
Other Waters of the U.S - Culvert Easement				
Drainage Ditch B	30	40	0.03	1,091
Total			0.03	1,365
Area of Potential Waters of the U.S./State			0.50	21,924

Numbers may not add up due to rounding

* Represents the estimated acreage of the portion of the seasonal wetland within the Off-Site Improvement Area based on aerial photography and mapping contained in the jurisdictional delineation of the Torian Property prepared by Zentner and Zentner (Zentner and Zentner 2010), which was verified by the USACE in 2010 (file 2010-002305)

Gateway Station Project Site
 Drainage Ditch
 upland data point
 Off-site Improvement Areas
 Seasonal Wetland
 wetland data point

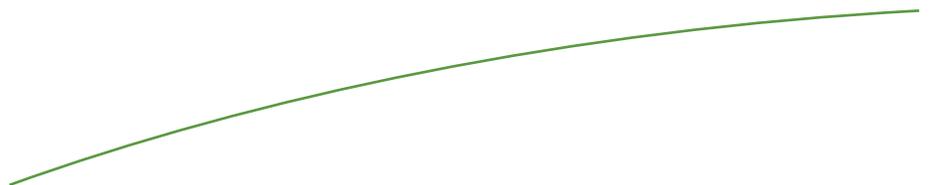
Jurisdictional Delineation

GATEWAY STATION WEST OFF-SITE IMPROVEMENT AREAS



Appendix I

USFWS, CNDDDB, AND CNPS LISTS OF
REGIONALLY-OCCURRING
SPECIAL-STATUS SPECIES



U.S. Fish & Wildlife Service

Gateway Station West

IPaC Trust Resource Report

Generated July 22, 2015 11:17 AM MDT



US Fish & Wildlife Service

IPaC Trust Resource Report



Project Description

NAME

Gateway Station West

PROJECT CODE

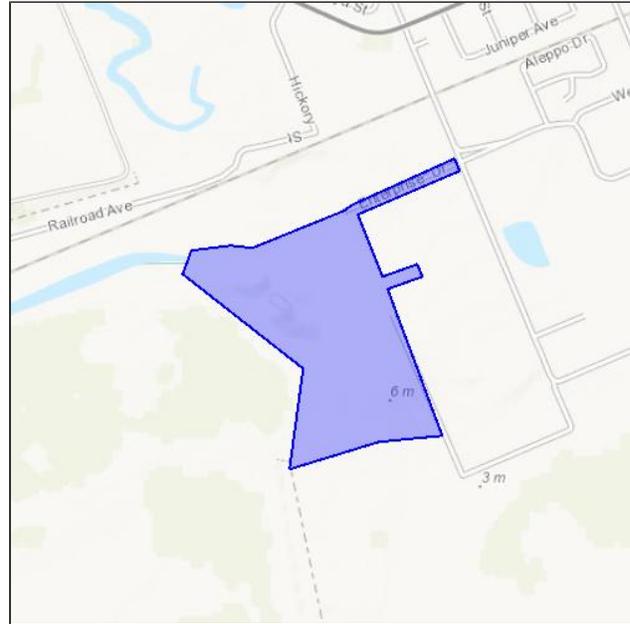
TIM20-TKEOJ-CCXFJ-IFKYH-TOQWMQ

LOCATION

Alameda County, California

DESCRIPTION

Residential development and open space area.



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Sacramento Fish And Wildlife Office

Federal Building

2800 COTTAGE WAY, ROOM W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under [Section 7](#) of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

Amphibians

California Red-legged Frog *Rana draytonii* Threatened

CRITICAL HABITAT

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

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D02D>

California Tiger Salamander *Ambystoma californiense* Threatened

CRITICAL HABITAT

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

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D01T>

Birds

California Clapper Rail *Rallus longirostris obsoletus* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B04A>

California Least Tern *Sterna antillarum browni* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B03X>

Western Snowy Plover *Charadrius alexandrinus nivosus* Threatened

CRITICAL HABITAT

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

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B07C>

Crustaceans

Vernal Pool Fairy Shrimp *Branchinecta lynchi* Threatened

CRITICAL HABITAT

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

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K03G>

Vernal Pool Tadpole Shrimp *Lepidurus packardii* Endangered

CRITICAL HABITAT

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

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K048>

Fishes

Delta Smelt *Hypomesus transpacificus* Threatened

CRITICAL HABITAT

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

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E070>

Steelhead *Oncorhynchus (=Salmo) mykiss* Threatened

CRITICAL HABITAT

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

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E08D>

Flowering Plants

Contra Costa Goldfields *Lasthenia conjugens* Endangered

CRITICAL HABITAT

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

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q122>

Insects

San Bruno Elfin Butterfly *Callophrys mossii bayensis* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I00Q>

Mammals

Salt Marsh Harvest Mouse *Reithrodontomys raviventris* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A03Y>

Reptiles

Alameda Whipsnake (=striped Racer) *Masticophis lateralis euryxanthus*

Threatened

CRITICAL HABITAT

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

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=C04A>

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

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

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

Allen's Hummingbird <i>Selasphorus sasin</i> Season: Breeding	Bird of conservation concern
Bald Eagle <i>Haliaeetus leucocephalus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008	Bird of conservation concern
Bell's Sparrow <i>Amphispiza belli</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HE	Bird of conservation concern
Black Oystercatcher <i>Haematopus bachmani</i> Year-round	Bird of conservation concern
Black Rail <i>Laterallus jamaicensis</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B09A	Bird of conservation concern
Burrowing Owl <i>Athene cunicularia</i> Year-round	Bird of conservation concern
California Spotted Owl <i>Strix occidentalis occidentalis</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08L	Bird of conservation concern
Costa's Hummingbird <i>Calypte costae</i> Season: Breeding	Bird of conservation concern
Fox Sparrow <i>Passerella iliaca</i> Season: Wintering	Bird of conservation concern
Lawrence's Goldfinch <i>Carduelis lawrencei</i> Season: Breeding	Bird of conservation concern
Least Bittern <i>Ixobrychus exilis</i> Season: Breeding	Bird of conservation concern
Lesser Yellowlegs <i>Tringa flavipes</i> Season: Wintering	Bird of conservation concern
Lewis's Woodpecker <i>Melanerpes lewis</i> Season: Wintering	Bird of conservation concern
Loggerhead Shrike <i>Lanius ludovicianus</i> Season: Wintering https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FY	Bird of conservation concern

Long-billed Curlew <i>Numenius americanus</i> Season: Wintering https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06S	Bird of conservation concern
Marbled Godwit <i>Limosa fedoa</i> Season: Wintering	Bird of conservation concern
Nuttall's Woodpecker <i>Picoides nuttallii</i> Year-round	Bird of conservation concern
Oak Titmouse <i>Baeolophus inornatus</i> Year-round	Bird of conservation concern
Olive-sided Flycatcher <i>Contopus cooperi</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AN	Bird of conservation concern
Peregrine Falcon <i>Falco peregrinus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU	Bird of conservation concern
Short-billed Dowitcher <i>Limnodromus griseus</i> Season: Wintering	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> Season: Wintering https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD	Bird of conservation concern
Song Sparrow <i>Melospiza melodia pusillula</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08P	Bird of conservation concern
Swainson's Hawk <i>Buteo swainsoni</i> Season: Wintering https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B070	Bird of conservation concern
Tricolored Blackbird <i>Agelaius tricolor</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06P	Bird of conservation concern
Whimbrel <i>Numenius phaeopus</i> Season: Wintering	Bird of conservation concern
Yellow Warbler <i>dendroica petechia ssp. brewsteri</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0EN	Bird of conservation concern

Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

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

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

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

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

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

DATA EXCLUSIONS

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

DATA PRECAUTIONS

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

Estuarine And Marine Wetland

E2EM1N	73.3 acres
E2SBNx	0.512 acre

Freshwater Emergent Wetland

PEM1Ah	1.63 acres
PEM1Ch	0.839 acre
PEM1C	0.546 acre

Freshwater Pond

PUBHh	2.96 acres
--------------	------------

Lake

L2UBK1h

26.5 acres

Riverine

R4SBAx

0.261 acre



Selected Elements by Scientific Name
 California Department of Fish and Wildlife
 California Natural Diversity Database



Query Criteria: Quad is (Newark (3712251))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Astragalus tener var. tener</i> alkali milk-vetch	PDFAB0F8R1	None	None	G2T2	S2	1B.2
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Centromadia parryi ssp. congonii</i> Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
<i>Charadrius alexandrinus nivosus</i> western snowy plover	ABNNB03031	Threatened	None	G3T3	S2	SSC
<i>Circus cyaneus</i> northern harrier	ABNKC11010	None	None	G5	S3	SSC
<i>Danaus plexippus pop. 1</i> monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<i>Eryngium aristulatum var. hooveri</i> Hoover's button-celery	PDAP10Z043	None	None	G5T1	S1	1B.1
<i>Extriplex joaquinana</i> San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
<i>Lasthenia conjugens</i> Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
<i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<i>Melospiza melodia pusillula</i> Alameda song sparrow	ABPBXA301S	None	None	G5T2?	S2?	SSC
<i>Northern Coastal Salt Marsh</i> Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
<i>Oncorhynchus mykiss irideus</i> steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
<i>Plagiobothrys glaber</i> hairless popcornflower	PDBOR0V0B0	None	None	GH	SH	1A
<i>Rallus longirostris obsoletus</i> California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	FP
<i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<i>Senecio aphanactis</i> chaparral ragwort	PDAST8H060	None	None	G3?	S2	2B.2
<i>Sorex vagrans halicoetes</i> salt-marsh wandering shrew	AMABA01071	None	None	G5T1	S1	SSC
<i>Spirinchus thaleichthys</i> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	SSC
<i>Sternula antillarum browni</i> California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
<i>Stuckenia filiformis ssp. alpina</i> slender-leaved pondweed	PMPOT03091	None	None	G5T5	S3	2B.2
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2

Record Count: 28

CNPS *California Native Plant* Rare and Endangered Plant Inventory

Plant List

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

Search Criteria

Rare Plant Rank is one of [1A, 1B, 2A, 2B], Found in Quad 37122E1

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	1B.2	S2	G2T2
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Eryngium aristulatum var. hooveri	Hoover's button-celery	Apiaceae	annual / perennial herb	1B.1	S1	G5T1
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	1B.1	S1	G1
Plagiobothrys glaber	hairless popcorn-flower	Boraginaceae	annual herb	1A	SH	GH
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	2B.2	S2	G3?
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	1B.2	S2	G2

Suggested Citation

CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website <http://www.rareplants.cnps.org> [accessed 28 July 2015].

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Contributors

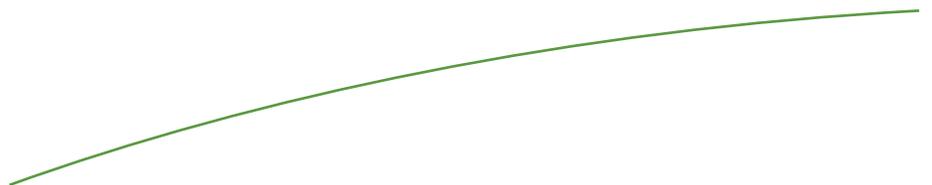
[The Calflora Database](#)

[The California Lichen Society](#)



Appendix J

SPECIAL-STATUS SPECIES AND CRITICAL
HABITAT POTENTIALLY OCCURRING OR
KNOWN TO OCCUR IN THE
PROJECT REGION



APPENDIX J SPECIAL-STATUS SPECIES AND CRITICAL HABITAT POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE PROJECT REGION

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
Invertebrates				
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT/--/--	Vernal pools ranging from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. It is most frequently found in pools measuring less than 0.05 acre; although has been collected from vernal pools exceeding 25 acres. The known range within California includes the Central Valley and southern California. (USFWS 2005).	Absent	The seasonal wetlands on the project site are hypersaline and do not provide the appropriate water chemistry for this species. Brine shrimp (<i>Artemia franciscana</i>) were observed in all of the wetlands on the project site that pond water for a sufficient duration to provide habitat for fairy shrimp. <i>Artemia franciscana</i> are only known to co-occur with one other species of fairy shrimp, <i>Branchinecta campestris</i> , which can also tolerate hypersaline conditions (Belk 1999).
<i>Callophrys mossii bayensis</i> San Bruno Elfin butterfly	FE/--/--	Range is limited to steep, north facing slopes of the coastal mountains of San Mateo County, including San Bruno and Montara Mountains, Milagra Ridge, Whiting Ridge, and Peak Mountain (USFWS 1984).	Absent	The project site is outside of the known range for this species.
<i>Lepidurus packardi</i> Vernal pool tadpole shrimp	FE/--/--	Vernal pools from 54 square feet to 89 acres, containing clear- to highly-turbid water. Its known range is within the Central Valley of California and in the San Francisco Bay area (USFWS 2005).	Absent	The seasonal wetlands on the project site are hypersaline and do not provide the appropriate water chemistry for this species. Brine shrimp (<i>Artemia franciscana</i>) were observed in all of the wetlands on the project site that pond water for a sufficient duration to provide habitat for fairy shrimp. <i>Artemia franciscana</i> are only known to co-occur with one other species of large branchiopod, <i>Branchinecta campestris</i> , which can also tolerate hypersaline conditions (Belk 1999).

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
Fish				
<i>Acipenser medirostris</i> Green sturgeon	FT/CSC/--	Green sturgeon is a long-lived, slow-growing fish and the most marine-oriented of the sturgeon species. Green sturgeon are believed to spend the majority of their lives in nearshore oceanic waters, bays, and estuaries. Early life history stages reside in fresh water, with adults returning to freshwater to spawn. Today green sturgeon are believed to spawn primarily in the Rogue River, Klamath River Basin, and the Sacramento River. Spawning appears to rarely occur in the Umpqua River, South Fork Trinity River, and Eel River (NMFS 2014a).	Absent	There are no suitable water bodies in the project site to support this species.
<i>Hypomesus transpacificus</i> Delta smelt	FT/--/--	Delta smelt are tolerant of a wide salinity range. They have been collected from estuarine waters up to 14 ppt (parts per thousand) salinity. For a large part of their one-year life span, delta smelt live along the freshwater edge of the mixing zone (saltwater-freshwater interface), where the salinity is approximately 2 ppt. Shortly before spawning, adults migrate upstream from the brackish-water habitat associated with the mixing zone and disperse into river channels and tidally-influenced backwater sloughs. They spawn in shallow, fresh or slightly brackish water upstream of the mixing zone. Most spawning happens in tidally-influenced backwater sloughs and channel edgewater. Although spawning has not been observed in the wild, the eggs are thought to attach to substrates such as cattails, tules, tree roots and submerged branches. Delta smelt are found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties (USFWS 1995).	Absent	There is no suitable habitat for this species in the project site and the project site is outside of this species' known geographic range.
<i>Oncorhynchus kisutch</i> Central California coast Coho salmon	FE/--/--	Coho spend approximately the first half of their life cycle rearing and feeding in streams and small freshwater tributaries. Spawning habitat is small	Absent	There are no suitable water bodies in the project site to support this species.

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
		streams with stable gravel substrates. The remainder of the life cycle is spent foraging in estuarine and marine waters of the Pacific Ocean (NMFS 2014b).		
<i>Oncorhynchus mykiss</i> Central Valley Steelhead DPS	FT, CH/--/--	This distinct population segment includes all naturally spawned anadromous <i>O. mykiss</i> (steelhead) populations below natural and manmade impassable barriers in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries, as well as two artificial propagation programs: the Coleman NFH, and Feather River Hatchery steelhead hatchery programs (NMFS 2014c). Steelhead spawn in rivers and streams with cool, clear, water and suitable substrate.	Absent	There are no suitable water bodies in the project site to support this species.
<i>Oncorhynchus mykiss</i> Central California Coast steelhead DPS	FT, CH/--/--	This distinct population segment includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California (inclusive). It also includes the drainages of San Francisco and San Pablo Bays (NMFS 2014c). Steelhead spawn in rivers and streams with cool, clear, water and suitable substrate.	Absent	There are no suitable water bodies in the project site to support this species.
<i>Oncorhynchus tshawytscha</i> Central Valley spring-run Chinook salmon	FT, CH/--/--	Chinook salmon spawn in rivers and streams with cool, clear, water and suitable substrate. The Central Valley spring-run Chinook ESU includes all naturally spawned populations of spring-run Chinook salmon in the Sacramento River and its tributaries in California, including the Feather River (64 FR 50394; September 16, 1999). One artificial propagation program is considered part of the ESU: The Feather River Hatchery spring run Chinook program (NMFS 2014d).	Absent	There are no suitable water bodies in the project site to support this species.
<i>Oncorhynchus tshawytscha</i> Winter-run Chinook salmon	FE, CH/--/--	Chinook salmon spawn in rivers and streams with cool, clear, water and suitable substrate. The Sacramento winter-run Chinook ESU includes all	Absent	There are no suitable water bodies in the project site to support this species.

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
		naturally spawned populations of winter-run Chinook salmon in the Sacramento River and its tributaries in California (59 FR 440; January 1, 1994), as well as two artificial propagation programs: Winter-run Chinook from the Livingston Stone National Fish Hatchery (NFH), and winter run Chinook in a captive broodstock program maintained at Livingston Stone NFH and the University of California Bodega Marine Laboratory (NMFS 2014e).		
<i>Spirinchus thaleichthys</i> Longfin smelt	--/ST/--	Longfin smelt is an anadromous smelt found in California's bay, estuary, and nearshore coastal environments from San Francisco Bay north to Lake Earl, near the Oregon border. They spend their adult life in bays, estuaries, and nearshore coastal areas, and migrate into freshwater rivers to spawn. Spawning occurs primarily from January through March, after which most adults die (CDFW 2014b).	Absent	There are no suitable water bodies in the project site to support this species.
Amphibians				
<i>Ambystoma californiense</i> California tiger salamander	FT/SSC/--	California tiger salamanders are generally restricted to vernal pools and seasonal ponds, including many constructed stockpools, in grassland and oak savannah plant communities from sea level to about 1,500 feet in central California. In the Coastal region, populations are scattered from Sonoma County in the northern San Francisco Bay Area to Santa Barbara County, and in the Central Valley and Sierra Nevada foothills from Yolo to Kern counties (USFWS 2014b).	Absent	The seasonal wetlands on the project site are unsuitable breeding habitat for California tiger salamander. They do not pond water for a sufficient duration and are hypersaline. This species is not known to occur in the project region.
<i>Rana aurora draytonii</i> California red-legged frog	FT, CH/SSC/--	The California red-legged frog occupies a fairly distinct habitat, combining both specific aquatic and riparian components. The adults require dense, shrubby or emergent riparian vegetation closely associated with deep (greater than 2 1/3-foot deep) still or slow moving water. The largest densities of California red-legged frogs are associated with	Absent	There is no suitable habitat for this species in the project site. The drainage ditches and seasonal wetlands are not suitable for this species due to the high salinity levels and lack of appropriate vegetation. This species is not known to occur in the project region.

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
		deep-water pools with dense stands of overhanging willows (<i>Salix</i> spp.) and an intermixed fringe of cattails (<i>Typha latifolia</i>). Well-vegetated terrestrial areas within the riparian corridor may provide important sheltering habitat during winter. California red-legged frogs aestivate (enter a dormant state during summer or dry weather) in small mammal burrows and moist leaf litter. They have been found up to 100 feet from water in adjacent dense riparian vegetation. Studies have indicated that this species can not inhabit water bodies that exceed 70° F, especially if there are no cool, deep portions (USFWS 2002).		
Reptiles				
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	FT,CH/--/--	The Alameda whipsnake inhabits the inner Coast Ranges in western and central Contra Costa and Alameda counties. This species is typically found in northern coastal scrub, coastal sage scrub and chaparral plant communities, but may also occur in adjacent grasslands and oak and oak/bay woodlands. They demonstrate a preference for open canopy stands and habitats with woody debris and exposed rock outcrops, and they tend to be found on southeast, south, and southwest facing slopes. Its diet includes lizards, small mammals, snakes, and nesting birds (USFWS 1997).	Absent	There is no suitable habitat for this species in the project site. The project site is outside of the known range of this species. In Alameda County, this species is primarily restricted to the Hayward Hills.
Birds				
<i>Agelaius tricolor</i> Tri-colored blackbird	--/SSC/--	Common locally throughout central California. Nests and seeks cover in emergent wetland vegetation, specifically cattails and tules. Nesting area must be large enough to support a minimum colony of 50 pairs as they are a highly colonial species. Forages on ground in croplands, grassy fields, flooded land, and edges of ponds.	Absent	There is no suitable habitat for this species in the project site. The only known occurrence of this species on the Newark USGS quad is in the Coyote Hills Regional Park in Fremont where this species has been documented in a two-acre tule marsh.
<i>Athene cunicularia</i> Burrowing owl	--/SSC/--	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. This species nests	Present	Suitable habitat for this species is present within the grassland and seasonal wetland habitats on the

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
		underground in existing burrows created by a number of burrowing mammals, most often ground squirrels.		project site. During burrowing owl surveys conducted in March 2014, a mammal burrow was observed in the southern portion of the project site that had evidence of past use by burrowing owl. The burrow appeared to have been used by a solitary burrowing owl for a relatively short period of time.
<i>Elanus leucurus</i> White-tailed kite	--/FP/--	Occurs primarily in rolling foothills and valley margins with scattered oaks as well as river bottomlands or marshes next to deciduous woodland. Uses isolated, dense topped, trees in open areas for nesting and perching and forages in a variety of habitats including grassland, marshes, and agricultural fields (CDFW 2014a). Feeds on rodents, snakes, and insects.	Present	The coyote bush scrub provides marginal potential nesting habitat. The annual grassland and wetlands habitats provide suitable foraging habitat.
<i>Charadrius alexandrinus nivosus</i> Western snowy plover	FT/--/--	The Pacific coast population of the western snowy plover breeds primarily on coastal beaches from southern Washington to southern Baja California, Mexico. Sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries are the preferred habitats for nesting. Less common nesting habitats include bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars (USFWS 1999).	Absent	There is no suitable habitat for this species in the project site.
<i>Pelecanus occidentalis</i> California brown pelican	FD/--/--	This species occurs in primarily coastal marine and estuarine (where fresh and salt water intermingle) environments along the coast of the Gulf of Mexico from Mississippi to Texas and the coast of Mexico; along the Caribbean coast from Mexico south to Venezuela; along the Pacific Coast from British Columbia, Canada, south through Mexico into Central and South America; and in the West Indies, and is occasionally sighted	Absent	There is no suitable habitat for this species in the project site.

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
		throughout the United States (USFWS 2009).		
<i>Rallus longirostris obsoletus</i> California clapper rail	FE/SE/--	California clapper rail is almost entirely restricted to the marshes of the San Francisco estuary, where the only known breeding populations occur. In south San Francisco Bay, populations occur in all of the larger tidal marshes (USFWS 2010). In San Pablo Bay and Suisun Bay, its distribution is patchy and discontinuous, occurring along major sloughs and rivers of San Pablo Bay and along major tidal sloughs of Suisun Marsh (USFWS 1984, USFWS 2010). Breeding California clapper rails require tidal marshes with the following elements: a well-developed tidal channel system with full tidal influence, cordgrass, and a vegetated upper marsh/upland ecotone. The minimum marsh size likely to be used by clapper rails is estimated at approximately 2.5 acres. The maximum dispersal distance recorded in radio telemetry studies is approximately 1.9 miles (USFWS 2010)	Absent	There is no suitable habitat for this species in the project site.
<i>Sternula antillarum browni</i> California least tern	FE/SE/--	Breeding colonies are located along the coast from southern California to San Francisco Bay. This species occurs along marine and estuarine shores where small fish are abundant where it nests in loose colonies on the ground relatively free of human or predatory disturbance.	Absent	There is no suitable habitat for this species in the project site.
<i>Circus cyaneus</i> Northern harrier	--/SSC/--	Northern harriers breed and forage in a variety of treeless habitats including freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and nonnative grasslands, weed fields, croplands pastures, sagebrush flats, and desert sinks. The bird nests on the ground, often in patches of dense, tall, vegetation in undisturbed areas along a marsh edge. Plant species composition varies by site, but the nest is built on a large mound of sticks. Breeding	Present	Northern harriers were observed foraging in the non-native grassland and ruderal/disturbed habitats in the study area.

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
		season is from March to August (Shuford, et. al. 2008).		
<i>Geothlypis trichas sinuosa</i> Saltmarsh common yellowthroat	--/SSC/--	Breeds from Tomales Bay to the north, Carquinez Strait to the east, and Santa Cruz county to the south, with occurrences in the Bay Area during migration and winter. Nests just above ground or over water, in thick herbaceous vegetation, often at base of shrub or sapling up to about 3 feet. Requires thick continuous cover down to the water surface for foraging and tall grasses, tule patches, and willows for nesting (CNDDDB 2014a).	Present	Marginal habitat for this species is present within the segment of Drainage Ditch 1 in the project site, as well as adjacent to the project site in the Plummer Creek Wetland Mitigation Bank.
<i>Melospiza melodia pusillula</i> Alameda song sparrow	--/SSC/--	Resident of salt marshes bordering the south arm of San Francisco Bay. Inhabits pickleweed marsh, where it nests low in <i>Grindelia</i> bushes (high enough to escape tides) and in pickleweed (CNDDDB 2014a).	Absent	There is no suitable habitat for this species in the project site. The seasonal wetlands contain sparse pickleweed but lack sufficient cover for this species.
<i>Riparia riparia</i> Bank swallow	--/ST/--	Bank swallow is found primarily in riparian and other lowland habitats west of the deserts during the spring-fall period. In summer, it is restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine-textured or sandy soils, into which it digs nesting holes. In California, bank swallow primarily nests from Siskiyou, Shasta and Lassen Counties south along the Sacramento River to Yolo County. Also nests locally across much of state.	Absent	There is no suitable habitat for this species in the project site.
<i>Laterallus jamaicensis coturniculus</i> California black rail	--/ST/--	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about one inch that does not fluctuate during the year and dense vegetation for nesting habitat (CDFW 2014a).	Absent	There is no suitable habitat for this species in the project site.
Mammals				
<i>Reithrodontomys raviventris</i> Salt marsh harvest mouse	FE/SE/--	The species is endemic to tidal and brackish marsh habitats of the San Francisco Bay region. Salt marsh harvest mice are primarily found in the salt marshes along the northern San Pablo Bay,	Absent	There is no suitable habitat for this species in the project site. See text for further discussion.

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
		surrounding the Suisun Bay, and along the southern San Francisco Bay (USFWS 1984). The minimum acreage thought to be necessary to sustain a healthy salt marsh harvest mouse population is 150 acres or more (USFWS 2010). The salt marsh harvest mouse is critically dependent on dense cover and its preferred habitat is pickleweed. In marshes with an upper zone of halophytes, it uses this vegetation to escape high tides, and may also move into adjoining grasslands during the highest winter tides (USFWS 1984).		
<i>Antrozus pallidus</i> Pallid bat	--/SSC/--	Locally common species at low elevations. It occurs throughout California except for the high Sierra Nevada from Shasta to Kern cos., and the northwestern corner of the state from Del Norte and western Siskiyou cos. to northern Mendocino Co. Habitats occupied include grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests, generally below 6,000 feet. The species is most common in open, dry habitats with rocky areas for roosting. Roosts also include cliffs, abandoned buildings, bird boxes, and under bridges.	Absent	There is no suitable habitat for this species in the project site.
<i>Sorex vagrans halicoetes</i> Salt marsh wandering shrew	--/SSC/--	Found in salt marshes of the south arm of San Francisco bay. Occurs in herbaceous wetlands and tidal marshes in dense, low-lying cover of pickleweed. Occupies medium high marsh from 6-8 feet above sea level where abundant driftwood is scattered among pickleweed (CNDDDB 2014a).	Absent	There is no suitable habitat for this species in the project site. The seasonal wetlands contain sparse pickleweed but lack sufficient cover for this species and are not subject to tidal influence leading to a lack of driftwood.
Plants				
<i>Astragalus tener</i> var. <i>tener</i> Alkali milk-vetch	--/--/CRPR 1B.2	Alkali milk-vetch is an annual herb that occurs in alkaline habitats of playas, valley and foothill grasslands (adobe clay soils), and vernal pools at elevations that range from 3 to 197 feet amsl. The known range of this species includes Alameda, Contra Costa, Merced, Monterey, Napa, San Benito, Santa Clara, San Francisco,	Present	The seasonal wetlands on the project site provide marginally suitable soil and hydrologic conditions for this species.

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
		San Joaquin, Solano, Sonoma, Stanislaus, and Yolo Counties. This species blooms from March through June (CNPS 2014).		
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	--/--/CRPR 1B.1	Congdon's tarplant is an annual herb that occurs in alkaline soils of valley and foothill grassland at elevations that range from 0 to 755 feet amsl. The known range of this species includes Alameda, Contra Costa, Monterey, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, and Solano Counties. This species blooms from May through November (CNPS 2014).	Present	Marginal habitat for this species occurs within the non-native grassland and ruderal/disturbed habitats on the project site.
<i>Eryngium aristulatum</i> var. <i>hooveri</i> Hoover's button celery	--/--/CRPR 1B.1	Hoover's button-celery is an annual or perennial herb that occurs in vernal pools ranging from 9 to 148 feet amsl. The known range of this species includes Alameda, San Benito, Santa Clara, San Diego and San Luis Obispo. This species blooms from July to August (CNPS 2014).	Present	The seasonal wetlands on the project site provide marginally suitable soil and hydrologic conditions for this species.
<i>Etriplex joaquinana</i> San joaquin spearscale	--/--/CRPR 1B.2	San Joaquin spearscale is an annual herb that occurs on alkaline soils within chenopod scrub, meadows and seeps, playas, and valley and foothill grassland at elevations from 3 to 2,740 feet amsl. The known range of this species includes Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Santa Clara, and San Joaquin counties. This species blooms from April through October (CNPS 2014).	Present	The non-native grassland and seasonal wetlands on the project site provide marginally suitable soil and hydrologic conditions for this species.
<i>Lasthenia conjugens</i> Contra costa goldfields	FE/--/CRPR 1B.1	Contra Costa goldfields is an annual herb that occurs in mesic habitats of cismontane woodland, alkaline playas, valley and foothill grassland, and vernal pools that range from 0 to 1,542 feet amsl. The known range of this species includes Alameda, Contra Costa, Mendocino, Monterey, Marin, Napa, Santa Barbara, Santa Clara, Solano, and Sonoma	Present	The non-native grassland and seasonal wetlands on the project site provide marginally suitable soil and hydrologic conditions for this species.

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
		Counties. This species blooms from March through June (CNPS 2014).		
<i>Plagiobothrys glaber</i> Hairless popcornflower	--/--/CRPR 1A	Annual herb found in meadows and seeps (alkaline) and marshes and swamps (coastal salt) from an elevation of approximately 50 to 600 feet amsl. The known range of this species includes Alameda, Marin, San Benito, and Santa Clara counties. This species blooms from March to May (CNPS 2014).	Absent	There is no suitable habitat for this species in the project site.
<i>Senecio aphanactis</i> Chaparral ragwort	--/--/CRPR 2B.2	Annual herb found in chaparral, cismontane woodland, and coastal scrub, sometimes in alkaline soil from an elevation of approximately 50 to 2,600 feet amsl. The known range of this species includes Alameda, Contra Costa, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, Santa Barbara, San Benito, Santa Clara, Santa Cruz, San Diego, San Luis Obispo, Solano, and Ventura counties. This species blooms from January through April (CNPS 2014).	Absent	There is no suitable habitat for this species in the project site.
<i>Stuckenia filiformis ssp. alpina</i> Slender-leaved pondweed	--/--/CRPR 2B.2	Perennial rhizomatous herb found in assorted shallow freshwater marshes and swamps from an elevation of approximately 985 to 7,050 feet amsl. The known range of this species includes Alameda, Butte, Contra Costa, El Dorado, Lassen, Merced, Mono, Modoc, Mariposa, Nevada, Placer, Santa Clara, Shasta, Sierra, San Mateo, Solano, and Sonoma counties. This species blooms from May to July (CNPS 2014).	Absent	There is no suitable habitat for this species in the project site.
<i>Trifolium hydrophilum</i> Saline clover	--/--/CRPR 1B.2	Saline clover is an annual herb that occurs in marshes and swamps, mesic, alkaline sites within valley and foothill grassland, and vernal pools at an elevation of 0 to 985 feet amsl. The known range of this species includes Alameda, Contra Costa, Mendocino, Monterey, Marin, Napa, Santa Barbara, Santa Clara, Solano, and Sonoma Counties. This species blooms from April through June (CNPS 2014).	Present	The non-native grassland and seasonal wetlands on the project site provide marginally suitable soil and hydrologic conditions for this species.

Scientific name/ common name	Federal/State/ CNPS Status	General Habitat Description	Habitat Present/ Absent	Rationale
<i>Sensitive Natural Community</i>				
Northern Coastal Salt Marsh	--/--/--	This habitat type is comprised of salt-tolerant hydrophytes forming moderate to dense cover and up to 3 feet tall. The dominant plant species are typically segregated horizontally with cordgrass (<i>Spartina</i>) nearer the open water, pickleweed (<i>Sarcocornia</i> or <i>Salicornia</i>) at mid-littoral elevations, and a richer mixture closer to high ground. Northern coastal salt marsh is usually found along the sheltered inland margins of bays, lagoons, and estuaries and is found in California along the coast from the Oregon border south to about Pt. Conception (Holland 1986).	Absent	This natural community is not present in the project site. The wetland habitats are disturbed and do not feature the salinity or species composition characteristic of this habitat. .

Note: Bold font and shading indicates a species with suitable habitat and a potential to occur in the project site. These species are evaluated in detail in the body of the report.

*FE – federally endangered; FT – federally threatened; FC – federally candidate; FD – federally delisted; SE – state endangered; ST – state threatened; SSC – state species of special concern; FP – CDFW fully protected. CRPR – California Rare Plant Rank (formerly California Native Plant Society List)

CRPR categories:

1B = Plants Rare, Threatened, or Endangered in California and Elsewhere

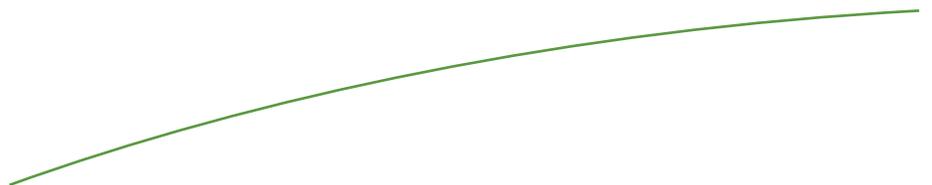
0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2-Moderately threatened in California (20-80 percent occurrences threatened / moderate degree and immediacy of threat)



Appendix K

PLANT AND ANIMAL SPECIES OBSERVED
IN THE PROJECT SITE



APPENDIX K

PLANT SPECIES OBSERVED

FAMILY	SCIENTIFIC NAME	COMMON NAME
Dicots		
Aizoaceae	<i>Mesembryanthemum nodiflorum</i>	slender leaved ice plant
Apiaceae	<i>Foeniculum vulgare</i>	sweet fennel
Asteraceae	<i>Baccharis pilularis ssp. consanguinea</i>	coyote brush
	<i>Carduus pycnocephalus</i>	Italian thistle
	<i>Centaurea solstitialis</i>	yellow star-thistle
	<i>Centromadia pungens ssp. pungens</i>	common tarweed
	<i>Cotula coronopifolia</i>	brass buttons
	<i>Dittrichia graveolens</i>	stinkwort
	<i>Erigeron canadensis</i>	horseweed
	<i>Helminthotheca echioides</i>	bristly ox-tongue
	<i>Lactuca saligna</i>	willow-leaf lettuce
	<i>Lactuca serriola</i>	prickly lettuce
	<i>Lasthenia californica</i>	California goldfields
	<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed
	<i>Senecio vulgaris</i>	ragweed
	<i>Silybum marianum</i>	milk thistle
	<i>Sonchus oleraceus</i>	common sowthistle
<i>Taraxacum officinale</i>	dandelion	
<i>Tragopogon porrifolius</i>	purple salsify	
Boraginaceae	<i>Heliotropium curassavicum var. oculatum</i>	seaside heliotrope
Brassicaceae	<i>Brassica nigra</i>	black mustard
	<i>Brassica sp.</i>	wild mustard
	<i>Hirschfeldia incana</i>	short-podded mustard
	<i>Raphanus sativus</i>	wild radish
	<i>Sisymbrium officinale</i>	hedge mustard

APPENDIX K (cont.)

PLANT SPECIES OBSERVED

FAMILY	SCIENTIFIC NAME	COMMON NAME
Dicots (cont.)		
Chenopodiaceae	<i>Atriplex lentiformis</i> spp. <i>lentiformis</i>	big salt bush
	<i>Atriplex rosea</i>	tumbling oracle
	<i>Atriplex suberecta</i>	sprawling saltbush
	<i>Bassia hyssopifolia</i>	five-horned smotherweed
	sea beet	<i>Beta vulgaris</i> ssp. <i>maritima</i>
	<i>Chenopodium album</i>	goosefoot
	Annual pickleweed	<i>Salicornia depressa</i>
	<i>Salicornia rubra</i>	red saltwort
	<i>Sarcocornia (Salicornia) pacifica</i>	Pacific swampfire
	<i>Salsola soda</i>	opposite leaf Russian thistle
Convolvulaceae	<i>Convolvulus arvensis</i>	field bindweed
Fabaceae	<i>Acacia cyclops</i>	red-eyed wattle
	<i>Acacia decurrens</i>	green wattle
	<i>Lotus corniculatus</i>	birdsfoot trefoil
	<i>Medicago polymorpha</i>	bur clover
	<i>Trifolium hirtum</i>	rose clover
	<i>Vicia sativa</i>	common vetch
Frankeniaceae	<i>Frankenia salina</i>	alkali sea-heath
Geraniaceae	<i>Geranium dissectum</i>	cut-leaf geranium
Lamiaceae	<i>Marrubium vulgare</i>	horehound
Malvaceae	<i>Malva parviflora</i>	cheeseweed
Myrtaceae	<i>Eucalyptus globulus</i>	blue gum
	<i>Eucalyptus polyanthemus</i>	silver dollar gum
Papaveraceae	<i>Eschscholzia</i> sp. (vegetative)	poppy
Plantaginaceae	<i>Plantago coronopus</i>	cut leaf plantain
Polygonaceae	<i>Polygonum aviculare</i>	common knotweed
	<i>Rumex crispus</i>	curly dock
Rosaceae	<i>Heteromeles arbutifolia</i>	toyon
Solanaceae	<i>Nicotiana glauca</i>	tree tobacco

APPENDIX J (cont.)

PLANT SPECIES OBSERVED

FAMILY	SCIENTIFIC NAME	COMMON NAME
Monocots		
Poaceae	<i>Avena fatua</i>	wild oats
	<i>Bromus catharticus</i>	rescuegrass
	<i>Bromus diandrus</i>	ripgut brome
	<i>Bromus hordeaceus</i>	smooth brome
	<i>Bromus madritensis</i>	foxtail chess
	<i>Cortaderia jubata</i>	pampas grass
	<i>Cynodon dactylon</i>	Bermuda grass
	<i>Distichilis spicata</i>	coastal salt grass
	<i>Festuca perennis</i>	Italian rye grass
	<i>Hordeum marinum ssp. gussoneanum</i>	Mediterranean barley
	<i>Hordeum marianum</i>	seaside barley
	<i>Hordeum sp.</i>	barley
	<i>Leymus triticoides</i>	creeping wildrye
	<i>Polypogon maritimus</i>	maritime rabbit's-foot grass
	<i>Stipa miliacea var. miliacea</i>	smilo grass

*Scientific and common names from Baldwin 2012

APPENDIX J (cont.)

ANIMAL SPECIES OBSERVED

SCIENTIFIC NAME

COMMON NAME

Birds

<i>Aimophila ruficeps</i>	rufous-crowned sparrow
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Cathartes aura</i>	turkey vulture
<i>Circus cyaneus</i>	northern harrier
<i>Columbia livia</i>	rock dove (pigeon)
<i>Dendroica coronata</i>	yellow-rumped warbler
<i>Sayornis nigricans</i>	black phoebe
<i>Tyto alba</i>	barn owl
<i>Zenaida macroura</i>	mourning dove
<i>Zonotrichia leucophrys</i>	white-crowned sparrow

Mammals

<i>Lepus californicus</i>	black-tailed jack rabbit
<i>Odocoileus hemionus</i> sp. <i>columbianus</i>	Columbian black-tailed deer

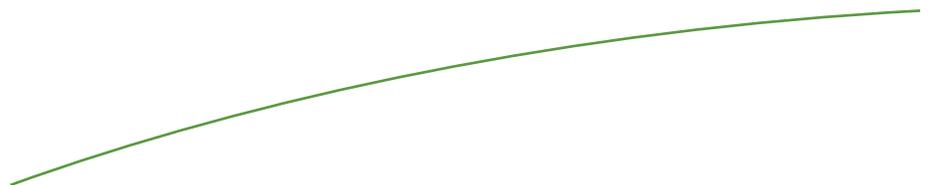
Crustacean

<i>Ostracoda</i> sp. (carapace)	seed shrimp (carapaces)
<i>Artemia franciscana</i>	Brine shrimp



Appendix L

BRANCHIOPOD SURVEY CORRESPONDENCE



Stephen Stringer

From: Kelly, David <david_kelly@fws.gov>
Sent: Friday, March 28, 2014 10:38 AM
To: Stephen Stringer; Ryan Olah
Subject: Re: Fairy shrimp sampling request

Stephen Stringer, you are authorized to conduct this one time reconnaissance survey to collect and identify unknown fairy shrimp observed at the Newark site as indicated in your request above with maps. This authorization does not include access to the site, which must be arranged in advance with the appropriate landowner or manager.

On Fri, Mar 28, 2014 at 10:08 AM, Stephen Stringer <StephenS@helixepi.com> wrote:

Hi David,

I am requesting authorization (under my Federal Recovery Permit TE-141359-2) to collect and identify unknown species of fairy shrimp from several ponded areas within three industrial settling basins on a project site known as "Parcel 1 of Parcel Map 9837." I visited the site yesterday to conduct biological surveys and noticed fairy shrimp within the settling basins. I have done a preliminary search of the California Natural Diversity Database and there are no reported occurrences of Federally-listed branchiopods within 10 miles of the site (the closest reported occurrence is about 16 miles away). In the east and south San Francisco Bay area, it is fairly typical to find non-listed species such as the versatile fairy shrimp (*Branchinecta lindahli*) and possibly California linderiella (*Linderiella occidentalis*). It is unlikely that Federally-listed fairy shrimp species are present on the site, however, I would like to collect them to verify. I have been working on the site conducting wetland delineation and biological fieldwork since last summer and do not believe the site to be potential habitat for Federally-listed branchiopods due to the lack of suitable natural vernal pool/wetland habitat and the geographic location of the site outside of the present known range of Federally-listed branchiopods. Therefore, I do not believe that protocol surveys are necessary but I would like to know the species of the shrimp on site.

The project site is part of the Dumbarton Transit Oriented Development Specific Plan and is proposed for residential and retail/commercial development. It is located in southwestern Alameda County within the City of Newark, California. It is located west of Hickory Street, between Hickory Street and several salt production basins associated with the solar salt production process that occurs west of the site. Enterprise Drive (formerly Wells Ave) terminates at the northeast corner of the property. The site is located in Section 11 of Township 5 South, and Range 2 West of the U.S. Geological Survey (USGS) 7.5-minute "Newark, California" quadrangle map. The approximate center of the parcel is at latitude: 37.517431 N, longitude: 122.053692 W, NAD 83. The site is highly disturbed due to its history of industrial uses and ongoing use for training by the City of Newark Police Department. Several brackish wetlands occur on the site dominated by species such as pickleweed and alkali heath, in addition to the three industrial settling basins. The industrial settling basins are not hydrologically connected to any other features on the site.

I have attached a project location map and an aerial map of the site depicting the locations of the settling basins along with a couple photos of the basins taken yesterday.

Please let me know if I am authorized to collect and ID the fairy shrimp. I would like to collect and ID them soon before the basins dry out. If I detect federally-listed branchiopods on the site, I would handle and accession them to an approved museum as dictated by my permit.

Regards,

Stephen Stringer

Senior Biologist

HELIX Environmental Planning, Inc.

11 Natoma Street

Suite 155

Folsom, CA 95630

916.365.8700 tel

916.365.8712 direct

StephenS@helixepi.com

www.helixepi.com

Please consider the environment before printing this email

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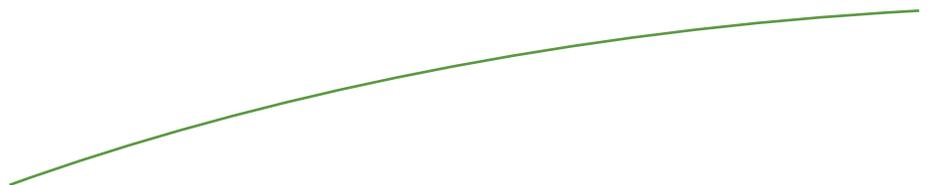
David Lee Kelly
Recovery Biologist
Sacramento Fish and Wildlife Office
2800 Cottage Way W-2605
Sacramento, California 95825-1888

Phone:916-414-6492



Appendix M

ENVIRONMENTAL MONITORING REPORT
FORMS, GATEWAY STATION SITE
EXCLUSION FENCE INSTALLATION



**Environmental Monitoring Report Form
Gateway Station West Exclusion Fence**

Location Newark, CA
Monitor Stephen Stringer,
Dr. George Aldridge

Date 09/15/2014
Time 1000-1500

Topic	Comment	Communication
Activities Observed:	Installation of exclusion fence along the southern and western portions of the site	Installation of posts and trenching along the north side of the canal and across the road crossing of the canal were done by hand under supervision.
Sensitive Biological Resources:		
Construction limits marked/fenced?	The boundary of the site was field-surveyed and staked. The location was verified in the field using GPS equipment. The fence line was carefully chosen to avoid any waters of the U.S. or state. The fence was installed along gravel road. The Biological Monitor walked the fence line prior to start of construction to ensure that no sensitive species was present.	Construction limits were set by Stephen Stringer and George Aldridge outside of wetlands prior to start of work, and marked with stakes and a string line.
Staging within project limits?	Installation was outside of bird breeding season. Staging was done in disturbed areas. A pre-construction meeting with the contractor and crew discussed the importance of avoiding all biological resources, the role of the Biological Monitors (including authority to stop work) and a discussion of sensitive species	All staging was in the disturbed area used by Cargill.
Water Quality/Erosion:		
Rain forecasted?		No rain forecast.
SWPPP BMP's installed/maintained?	The woven geotextile fence is backed by steel mesh for added strength and wind resistance. A 14" metal climbing barrier is buried 5" below grade. The fence extends three feet above the ground and is supported by 5' wood stakes every 6' with 4 screws per stake and every other stake is cross-braced. The fence is tethered by a 1/4" yellow poly rope and zip-ties	N/A – work is in disturbed upland areas. All trenching spoils were placed to the outside of the fence line away from the wetland boundary.
SWPPP materials?		N/A
Air Quality:		
Emissions Observed?	NA	
Dust abatement measures:		
Hazardous Materials:		

Spills?	No hazardous material was used.	
Handling?		
Cultural/Paleo Resources:	Installation was in disturbed areas and along a road No cultural or paleontological resource is known from the area	
Access/Traffic:	The work is on private property , including the gravel road	
<u>Comments:</u> Mowing and trenching along the remainder of the fence line will be done with a Bobcat, as the fence line is 6-10 feet from the wetland boundary. HELIX installed a combination lock on the Cargill pipe gate to provide access to the northern half of the fence line. No wildlife was observed in the work area or in adjacent areas.		
<u>Non-Compliance</u>		
1.	No issues	
2.		
3.		
<u>Remediation Measures/Recommendations</u>		
1.	None required	
2.		
3.		

Initial: GA

**Environmental Monitoring Report Form
Gateway Station West Exclusion Fence**

Location Newark, CA
Monitor Dr. George Aldridge

Date 9/16/2014
Time 0930 - 1530

Topic	Comment	Communication
Activities Observed:	Installation of exclusion fence along the southern and western portions of the site	Installation of fence along north side of the canal. Installation of posts and trench around the Cargill staging area. The fence line from the north end of the Cargill staging area to the south terminus was mowed using a bobcat.
Sensitive Biological Resources:		
Construction limits marked/fenced?	The boundary of the site was field-surveyed and staked. The location was verified in the field using GPS equipment. The fence line was carefully chosen to avoid any waters of the U.S. or state. The fence was installed along gravel road.	Installation was monitored full-time by a biologist to ensure wetland avoidance.
Staging within project limits?	The Biological Monitored walked the fence line prior to start of construction to ensure that no sensitive species was present. Installation was outside of bird breeding season. Staging was done in disturbed areas. A pre-construction meeting with the contractor and crew discussed the importance of avoiding all biological resources, the role of the Biological Monitors (including authority to stop work) and a discussion of sensitive species	All work was in disturbed uplands and avoided the wetland boundary.
Water Quality/Erosion:		
Rain forecasted?	The woven geotextile fence is backed by steel mesh for added strength and wind resistance. A 14" metal climbing barrier is buried 5" below grade. The fence extends three feet above the ground and is supported by 5' wood stakes every 6' with 4 screws per stake and every other stake is cross-braced. The fence is tethered by a 1/4" yellow poly rope and zip-ties	No rain forecast for tomorrow. Chance of rain Thursday.
SWPPP BMP's installed/maintained?		N/A – work is in disturbed upland areas. All trenching spoils were placed to the outside of the fence line away from the wetland boundary.
SWPPP materials?		N/A
Air Quality:		

Emissions Observed?	NA	N/A
Dust abatement measures:		N/A
Hazardous Materials:		
Spills?	No hazardous material was used.	No spills.
Handling?		
Cultural/Paleo Resources:	Installation was in disturbed areas and along a road No cultural or paleontological resource is known from the area	
Access/Traffic:	The work is on private property, including the gravel road	
<u>Comments:</u>		
Wildlife observed included black phoebe and turkey vulture observed outside of work area. Nest survey of all brush inside work area was negative.		
<u>Non-Compliance</u>		
1.	No issues	
2.		
3.		
<u>Remediation Measures/Recommendations</u>		
1.	N/A	
2.		
3.		

Initial: GA

Cultural/Paleo Resources:	Installation was in disturbed areas and along a road No cultural or paleontological resource is known from the area	
Access/Traffic:	The work is on private property, including the gravel road	
<u>Comments:</u> Wildlife observed include black-tailed jackrabbit, white-crowned sparrow, California towhee, and snowy egret observed outside of work area.		
<u>Non-Compliance</u>		
1. 2. 3.	No issues	
<u>Remediation Measures/Recommendations</u>		
1. 2. 3.	N/A	

Initial: GA

**Environmental Monitoring Report Form
Gateway Station West Exclusion Fence**

Location Newark, CA
Monitor Dr. George Aldridge

Date 9/18/2014
Time 0715 - 1510

Topic	Comment	Communication
Activities Observed:	Installation of exclusion fence along the southern and western portions of the site	Installation of flashing, rope, and braces; backfill of trenching. All tasks finished to the south end of the Cargill staging area.
Sensitive Biological Resources:		
Construction limits marked/fenced?	The boundary of the site was field-surveyed and staked. The location was verified in the field using GPS equipment.	
Staging within project limits?	The fence line was carefully chosen to avoid any waters of the U.S. or state. The fence was installed along gravel road. The Biological Monitored walked the fence line prior to start of construction to ensure that no sensitive species was present. Installation was outside of bird breeding season. Staging was done in disturbed areas. A pre-construction meeting with the contractor and crew discussed the importance of avoiding all biological resources, the role of the Biological Monitors (including authority to stop work) and a discussion of sensitive species	All work was in disturbed uplands and avoided the wetland boundary.
Water Quality/Erosion:		
Rain forecasted?	The woven geotextile fence is backed by steel mesh for added strength and wind resistance. A 14" metal climbing barrier is buried 5" below grade. The fence extends three feet above the ground and is supported by 5' wood stakes every 6' with 4 screws per stake and every other stake is cross-braced. The fence is tethered by a 1/4" yellow poly rope and zip-ties	Slight sprinkles in the morning; clearing by afternoon. No rain forecast for Friday.
SWPPP BMP's installed/maintained?		N/A – work is in disturbed upland areas. All trenching spoils were placed to the outside of the fence line away from the wetland boundary.
SWPPP materials?		N/A
Air Quality:		
Emissions Observed?	NA	N/A
Dust abatement measures:		N/A
Hazardous Materials:		

Spills?	No hazardous material was used.	
Handling?		
Cultural/Paleo Resources:	Installation was in disturbed areas and along a road No cultural or paleontological resource is known from the area	
Access/Traffic:	The work is on private property, including the gravel road	
<u>Comments:</u> Wildlife observed include snowy egret, unidentified duck, and black phoebe observed outside of the work area.		
<u>Non-Compliance</u>		
1.	No issues	
2.		
3.		
<u>Remediation Measures/Recommendations</u>		
1.	N/A	
2.		
3.		

Initial: GA

**Environmental Monitoring Report Form
Gateway Station West Exclusion Fence**

Location Newark, CA
Monitor Dr. George Aldridge

Date 9/19/2014
Time 0715 - 1510

Topic	Comment	Communication
Activities Observed:	Installation of exclusion fence along the southern and western portions of the site	Installation of all staking, fence, flashing, and braces was completed to the southern terminus. Remaining work consists of installing additional ties and wires to reinforce flashing and fencing.
Sensitive Biological Resources:		
Construction limits marked/fenced?	The boundary of the site was field-surveyed and staked. The location was verified in the field using GPS equipment.	
Staging within project limits?	The fence line was carefully chosen to avoid any waters of the U.S. or state. The fence was installed along gravel road. The Biological Monitored walked the fence line prior to start of construction to ensure that no sensitive species was present. Installation was outside of bird breeding season. Staging was done in disturbed areas. A pre-construction meeting with the contractor and crew discussed the importance of avoiding all biological resources, the role of the Biological Monitors (including authority to stop work) and a discussion of sensitive species	All work was in disturbed uplands and avoided the wetland boundary.
Water Quality/Erosion:		
Rain forecasted?		No rain forecast.
SWPPP BMP's installed/maintained?	The woven geotextile fence is backed by steel mesh for added strength and wind resistance. A 14" metal climbing barrier is buried 5" below grade. The fence extends three feet above the ground and is supported by 5' wood stakes every 6' with 4 screws per stake and every other stake is cross-braced. The fence is tethered by a 1/4" yellow poly rope and zip-ties	N/A – work is in disturbed upland areas. All trenching spoils were placed to the outside of the fence line away from the wetland boundary.
SWPPP materials?		N/A
Air Quality:		
Emissions Observed?	NA	N/A

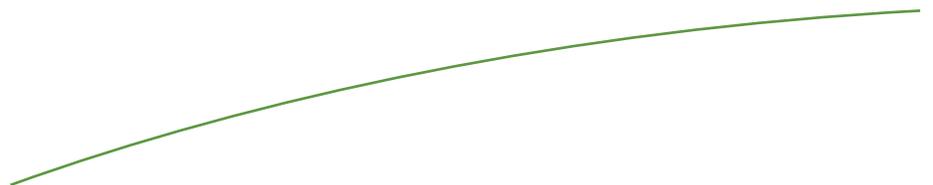
Dust abatement measures:		N/A
Hazardous Materials:		
Spills?	No hazardous material was used.	
Handling?		
Cultural/Paleo Resources:	Installation was in disturbed areas and along a road No cultural or paleontological resource is known from the area	
Access/Traffic:	The work is on private property, including the gravel road	
<u>Comments:</u>		
Animals observed include: northern rough-wing swallow, black phoebe, American crow, curlew. No mammals were observed and no animals were observed in the fence area. Birds were observed flying over adjacent open areas off the property.		
<u>Non-Compliance</u>		
1.	No issues	
2.		
3.		
<u>Remediation Measures/Recommendations</u>		
1.	N/A	
2.		
3.		

Initial: GA



Appendix F

CULTURAL RESOURCES REVIEW



T E C H N I C A L M E M O R A N D U M

TO: Dave Claycomb, AICP
Northern California Regional Manager
HELIX Environmental Planning, Inc.
11 Natoma Street, Suite 155, Folsom, CA 95630

FROM: Nancy E. Sikes, Ph.D., RPA, and Cindy J. Arrington, M.S., RPA
Co-Principal Investigators for Cultural Resources
(Parus Project No. 848)

DATE: December 12, 2013

SUBJECT: Cultural Resources Review
Gateway Project, City of Newark, Alameda County, CA

PROJECT DESCRIPTION AND LOCATION

The Gateway Project is an approximately 54.5-acre area located in the City of Newark in southwestern Alameda County. The project is bounded on the east by Hickory Street, which runs north-south and is currently unpaved. To the north are the tracks of the Union Pacific Railroad, with salt production facilities to the south and west. Three parcels are included in the project area: APN Nos. 537-852-09, 537-852-10, and 537-852-11. Figure 1 shows the location of the project in Section 11 and an unsectioned portion of Township 5 South, Range 2 West, on the Newark 1993 USGS 7.5-minute topographic map (Mount Diablo Base and Meridian).

The project is part of the Dumbarton Transit Oriented Development (TOD) Specific Plan Area, which is a 205-acre development with residential, office, retail, park and recreational open space, south of the existing Union Pacific Railroad (Dumbarton Rail Corridor). The Draft and Final Environmental Impact Report (EIR) for the Dumbarton TOD refers to the Gateway Project as the “Cargill” property (Parcel 1 of Tentative Parcel Map 9837) (RBF 2011a, b).

PRE-FIELD RESEARCH

LITERATURE SEARCH METHODS AND RESULTS

To determine if prehistoric or historic cultural resources were previously recorded within the project area, a cultural resources literature search was completed on December 9, 2013, by archaeologist Erin Hanes of Parus Consulting, Inc. (PCI) at the California Historical Resources Information System, Northwest Information Center (NWIC) at Sonoma State University. The records search was conducted to determine the extent to which the project area had been previously surveyed, and the number and type of cultural

resources within a 0.25-mile radius of the project or within the project limits. The archival search consisted of an archaeological and historical records and literature review.

The records search shows that eight prior cultural resources studies have been completed within a 0.25-mile radius of the project (Table 1). Of these, a portion of one development area study (S-005858) was located within the western extent of the Gateway Project area, and a segment of the study area for the Dumbarton Rail Corridor Project (S-036481) paralleled the west side of the current project area.

Table 1. Prior Cultural Resources Studies within or in 0.25-mile of Project Area

NWIC Report No.	Study	Author/Year	Year	Proximity to Project Area
S-000898	An Archaeological Reconnaissance of the Proposed Pipeline Routes and Reservoir Locations, Livermore-Amador Valley Water Management Agency, Alameda County, CA	Love et al.	1976	Within 0.25 mile
S-005858	A Report of a Preliminary Archaeological Field Reconnaissance of 9 Development Areas Inside the City of Newark, Alameda County, CA	M.P. Holman	1983	Partially within
S-033248	Archival Literature Review and Surface Survey for the Newark Pump Station Project, City of Newark, Alameda County, CA	Pastron, et al.	2006	Within 0.25 mile
S-033249	Archival Literature Review for the Willow/Central Avenue Sewer Rehabilitation Project, City of Newark, Alameda County, CA	Pastron, et al.	2006	Within 0.25 mile
S-036481	Archaeological Survey Report for the Dumbarton Rail Corridor Project, San Mateo and Alameda Counties, CA	Whitaker et al.	2009	Adjacent to west side of project
S-039019	Archaeological Records Search and Field Review, 42-Acre Property – Willow Street and Vicinity, City of Newark, Alameda County, CA	C.I. Busby	2007	Within 0.25 mile
S-039227	Archaeological Monitoring Summary Report – SFPUC BDPL 5, East Bay Segment, Alameda County, CA	C.I. Busby	2012	Within 0.25 mile
S-040929	Archaeological Data Recovery Report (SMA-83) (ADRR) and Final Archaeological Resources Report (FARR), San Francisco Public Utilities Commission Water Improvement Program, Bay Division Pipeline Reliability Upgrade Project, East Bay and Peninsula Bay Division Pipeline No. 5, and Alameda San Mateo Counties, CA	Basin Research Associates	2013	Within 0.25 mile

One historic-era cultural resource (P-01-001783) has been previously recorded within a 0.25-mile radius of the project. The 16.4-mile long Southern Pacific Railroad (SPRR) Dumbarton Cutoff linked the railroad’s lines to San Francisco, Ogden, Portland, and New Orleans. The line and the Dumbarton Bridge west of the current project were completed in 1910. The bridge was the first crossing of the San Francisco Bay. It carried freight trains from 1910 to 1982 and is the alignment for the planned Dumbarton Rail Corridor Project. A portion of the railroad corridor between Wells and Thornton Avenues has been evaluated as eligible for inclusion in the National Register of Historic Places under Criteria A, B, and C. Under Criterion A, it is associated with the system-wide improvements to the SPRR that gave the railroad its 20th century form and made it the standard railroad of the West. Under Criterion B, the cutoff is associated with E. H. Harriman, who drove the modernization of the SPRR, including construction of the cutoff. The Dumbarton Bridge as well as the Newark Slough Bridge contribute to eligibility under Criterion C as representative examples of a type and method of construction.

Historic maps provide additional information on the project area. The 1883 Government Land Office (GLO) plat shows a portion of the project area within the boundaries of the “Ex Mission San José.” The land was once part of the territory controlled by Mission San José, which was founded in 1797. The land was later part of a 30,000-acre Mexican land grant awarded in 1846. The Haywards 1899 USGS 15-

minute topographic map shows the development of Newark and the north-south route of the Santa Cruz Division of the SPRR through the town. The Haywards 1915 USGS 15-minute topographic map shows the route of the east-west route of the SPRR tracks, which are north of the Gateway Project, intersecting the Santa Cruz line in Newark. The map also shows the west-central edge of the project area within the marshy area adjacent to waters of San Francisco Bay.

The Newark 1947 and 1959 USGS 7.5-minute quadrangles and the Haywards 1959 USGS 15-minute map show the division of the property west of the project area into a series of salt evaporating ponds and multiple buildings north of the project area, as well as the Hetch Hetchy Spring Valley Aqueduct north of the east-west SPRR line and the growth of Newark. The maps also indicate a portion of the project area was divided into salt ponds. The 1968 photorevised version of the Newark 1959 topo does one building and an unimproved road in the southeast corner of the project area, but the building is no longer depicted on the 1993 Newark 7.5-minute quadrangle. By 2012, the road has been modified to assume its present configuration as Hickory Street, as shown on the current topographic map.

SACRED LANDS FILE SEARCH

PCI contacted the Native American Heritage Commission (NAHC) on December 6, 2013, requesting a search of their Sacred Lands File for traditional cultural resources within or near the project. The reply from the NAHC, dated December 11, 2013, states that the search failed to indicate the presence of Native American sacred lands or traditional cultural properties in the immediate vicinity of the project area.

PEDESTRIAN FIELD SURVEY

FIELD SURVEY METHODS

Intensive-level pedestrian survey of the project corridor, was conducted by PCI archaeologist, Phil Hanes, on December 11, 2013. The entire project area was intensively surveyed using transects spaced no greater than 15 meters apart. All undeveloped ground surface areas within the project area were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations), or historic-era debris (e.g., metal, glass, ceramics). Ground disturbances (e.g., ditches, stockpiles) were visually inspected. Photographs of the project area, including ground surface visibility and items of interest, were taken with a digital camera.

FIELD SURVEY RESULTS

No prehistoric, ethnohistoric or historic-era cultural resources were identified during the pedestrian survey.

The project area is predominantly flat and lies approximately 30 to 35 feet above mean sea level (Photograph 1). The acreage contains graded settling basins on the west, large dirt stockpiles, and a series of large and small drainage ditches that appear to be associated with the salt ponds, which are located west of and outside the project area. Approximately 90 percent of the project area has been cut or filled and graded. The remaining 10 percent is a large, natural serpentine outcrop area in the central-eastern portion of the acreage (Photograph 2).



Photograph 1. Overview of Project Area (view to north from southwest quadrant)



Photograph 2. Serpentine outcrop (view to southwest)

Ground visibility within the project area depended on density of vegetation coverage (e.g., grasses, saltbush). Visibility was moderate (averaged 30-40 percent) in the majority of the project area and increased in the southwestern quadrant (75-80 percent) (Photograph 1), but was poor (0-10 percent) alongside the drainage ditches (Photograph 3) and settling basins in the northwest, and poor to moderate (20-40 percent) around the serpentine outcrop (Photograph 2).



Photograph 3. Poor visibility along drainage ditch (view to north)

All extant buildings and structures are of modern construction, are located in the southeastern portion of the project area, and are used for a pistol range and dog training facility operated by the Newark Police Department. The pistol range includes a plywood multi-room training area, two portable containers, and a small open-air shelter with bleachers for observation. The dog training facility includes a training field, building, picnic area, outdoor kitchen, portable storage container, dog runs, and a shed. The dog training facility also has the remnants of a shotgun trap shooting ring.



Photograph 4. Pistol Range



Photograph 5. Modern building used for Dog Training Facility

RECOMMENDATIONS

SENSITIVITY FOR DISCOVERY OF BURIED RESOURCES

No prehistoric, ethnohistoric, or historic-era cultural resources have been identified within or immediately adjacent to the project area. Although adjacent to the southeastern edge of San Francisco Bay, part of the lands controlled by Mission San José in the late 1700s, and then an 1846 Mexican land grant, historic maps show the project area remained mostly undeveloped. Only portions of the project area were used historically for salt evaporating ponds and also leased from 1929 to the present. As described in the Draft EIR (RBF 2011a:3.13-3.14), the portion leased from 1929 to approximately 1969 and known as the Leslie Salt/FMC Magnesia Waste Pile site was remediated pursuant to a Department of Toxic Substance Control (DTSC) Remedial Action Order. The remediation was certified as completed in 1991. The Newark Sportsman's Club leased approximately 18 acres of land for a recreational outdoor shooting range between 1969 and 1995. Between 1994 and 2004, the hazardous material remaining from that use (surficial and shallow deposits of lead shot and clay pigeon debris) was voluntarily cleaned up by mechanical scraping. Last, from 1975 to the present, the City Police Department has leased the southeastern portion of the property to operate a pistol range and dog training facility.

Given the past use of the property, particularly disturbance by industrial uses and related remediation activities, the project area is considered to have a low sensitivity for discovery of archaeological resources, including human remains. Based on the results of the records searches, field survey, and historic use of the land, PCI recommends no additional cultural resources work at this time for the proposed project.

NO CONSTRUCTION MONITORING

Construction monitoring is not recommended. The project area lies within areas previously disturbed by industrial and remediation activities.

INADVERTENT DISCOVERIES

Although unlikely, there is always the potential for the existence of buried archaeological materials within the project area. Should cultural resources be encountered during construction or ground-disturbing activities connected with this project, work in the area must be halted and a qualified archaeologist who meets the Secretary of the Interior's Standards for archaeologists (National Park Service 1983) shall be notified immediately to evaluate the resource(s) encountered.

Within this area, prehistoric and ethnohistoric materials might include flaked stone tools, tool-making debris, stone milling tools, fire-affected rock, basketry, culturally modified animal bone, fishing implements, or soil darkened by cultural activities (midden). Historic-era materials might include building remains, agricultural or irrigation remnants, metal, glass, cans, or ceramic artifacts or debris.

HUMAN REMAINS

Although unlikely, the discovery of human remains is always a possibility. Should human remains be uncovered, the statutes of State of California Health and Safety Code Section 7050.5 must be followed. The County Coroner must be notified of the find immediately, and no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. If the human remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission, which will determine and notify a Most Likely Descendent (MLD). The MLD shall complete the inspection of the site within 48 hours of notification, and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

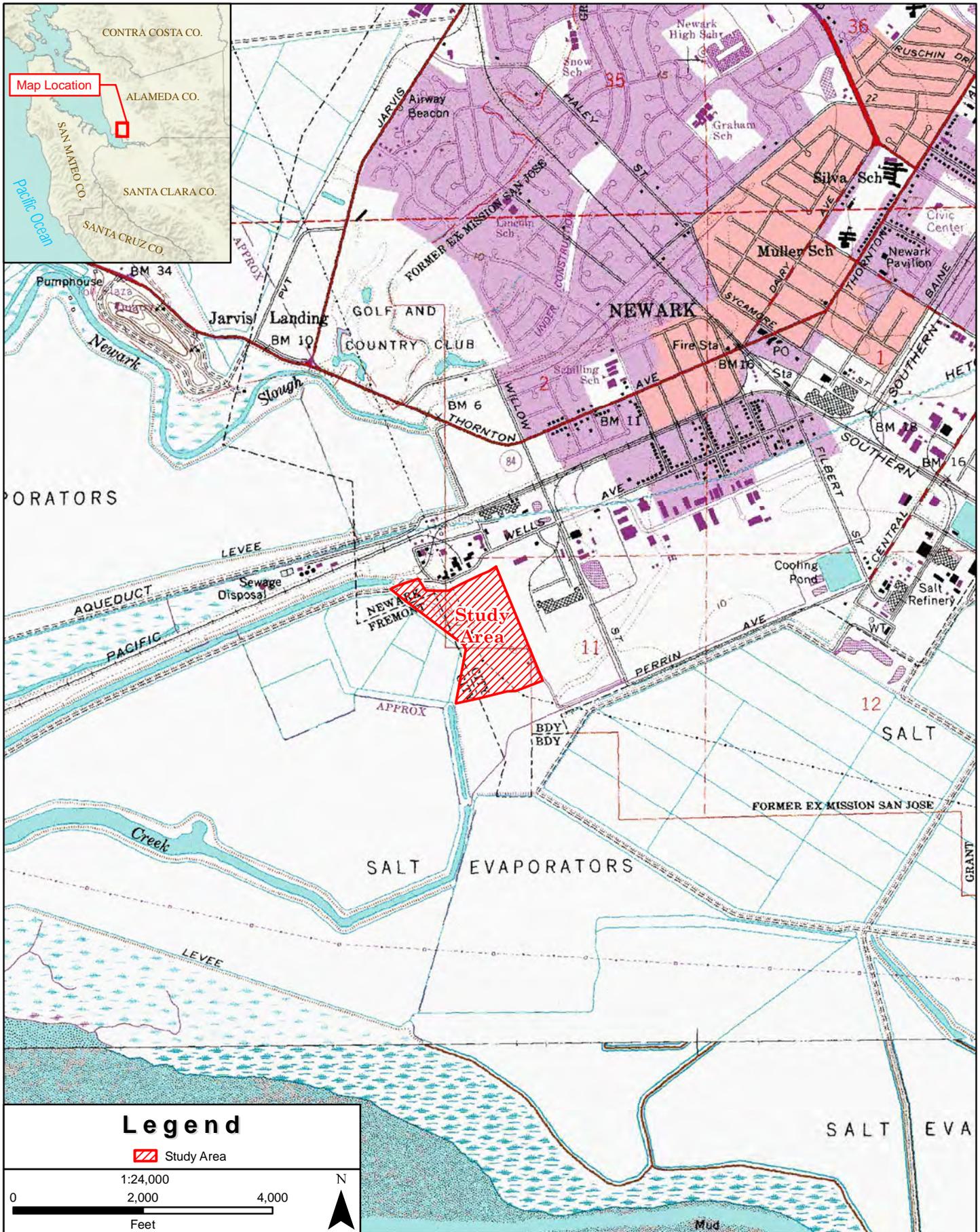
REFERENCES

National Park Service

1983 Archaeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines: Professional Qualifications Standards. Electronic document, http://www.cr.nps.gov/local-law/arch_stnds_9.htm.

RBF Consulting

- 2011a Dumbarton Transit Oriented Development Specific Plan Draft Environmental Impact Report (SCH No. 2010042012). May 2011. Available online at: <http://www.newark.org/departments/planning-and-economic-development/on-going-projects/dumbarton-transit-development-area-2/>
- 2011b Dumbarton Transit Oriented Development Specific Plan Final Environmental Impact Report (SCH No. 2010042012). July 2011. Available online at: <http://www.newark.org/departments/planning-and-economic-development/on-going-projects/dumbarton-transit-development-area-2/>



Quadrangle: Newark PR 1997; Township: 5S; Range: 2W; Section: 11
 Township 5S; Range 2W; Unsectioned Portion of the Former Ex Mission San Jose Land Grant
 Alameda County, California.

Gateway Project
 Project Location Map

Map Date: 12/04/2013
 Background Source: ESRI USA Topo Maps, ESRI Terrain



Figure 1