

FINAL ENVIRONMENTAL IMPACT REPORT

**STATION EAST RESIDENTIAL/
MIXED-USE PROJECT**

STATE CLEARINGHOUSE No. 2020039032

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April 2021



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Chapter 1

Executive Summary

This Final Environmental Impact Report (Final EIR) is an informational document prepared by the City of Union City (City) to evaluate the potential environmental impacts that would result from the proposed Station East Residential/Mixed-Use Project (project). As lead agency, the City is required to evaluate the comments on environmental issues received during the public comment period from persons who have reviewed the Draft EIR and to prepare written responses to those comments.

This document, together, with the Draft EIR (incorporated by reference in accordance with *CEQA Guidelines* Section 15150), will comprise the Final EIR for this project. This Final EIR contains individual responses to each comment received during the public review period for the Draft EIR. In accordance with *CEQA Guidelines* Section 15088(b), the written responses describe the disposition of significant environmental issues raised.

1.1 Project Description

The project is an infill project involving redevelopment of an approximately 26.5-acre site (project site) between 7th Street and the Niles subdivision Union Pacific Railroad (UPRR) tracks in the City of Union City, Alameda County, California. The project site (assessor's parcel numbers [APNs] 87-21-5-2, 87-21-13-1, 87-21-13-2, 87-23-12, 87-23-10, and 87-23-13-2) is currently occupied by existing and vacant industrial uses (totaling 86,500 square feet [sf], or 2.0 acres); surface parking lots, asphalt or concrete storage lots, a roadway, and railroad spur improvements (6.4 acres); and vacant unpaved areas, including agricultural, annual grassland, landscaped, and ruderal areas (18.1 acres).

The description of the project's uses, including the summary information below, is based on the conceptual site plan shown in Figure 3-6 on page 3-15 in Chapter 3, *Project Description*, of the Draft EIR. The project proposes demolition of the buildings and surface parking lots and development of up to approximately 1.8 million sf, including up to 974 new residential units (apartments, condominiums, and townhome-style condominiums, referred to as townhomes) and approximately 30,800 sf of commercial space. The project site would include 11 planning areas (PAs) with 33 residential buildings and one community building. Most of the 34 proposed buildings would be between three and five stories tall. Vehicular access to the project site would be via Decoto Road on the north side of the project site, 7th Street on the east side of the project site, and Bradford Way and Zwissig Way on the south side of the project site. One linear paseo (Paseo C) would extend through the southern portion of the project site in the east-west direction. Three community parks, one tot lot, and one outdoor amphitheater would be located throughout the project site. In addition, urban plazas would be located near the proposed commercial uses in PA 1. Pedestrian, bicycle, and vehicular access would be provided throughout the project site. The proposed project would include approximately 1,791 parking spaces for vehicles (including 190 on-street surface stalls) and 458 parking spaces for bicycles, both long term (i.e., bike storage facilities) and short term (i.e., bicycle racks). Construction of the proposed project would begin in mid-2021 and occur in two phases over approximately 4.5 years, with anticipated completion in 2025.

The project site is part of the *Decoto Industrial Park Study Area Specific Plan* (DIPSA Specific Plan) area. The DIPSA Specific Plan is currently undergoing an update, referred to as the *Station District Specific Plan*. The project site is identified in the *City of Union City 2040 General Plan* (General Plan) as part of the Station East subarea of the Greater Station District and is designated on the General Plan Land Use Diagram as Station East Mixed Use (SEMU). The project proposes a General Plan amendment to update land use targets for the Station East area, reduce the minimum density to 25 units per acre, provided a certain average density is maintained, and other minor updates for consistency with the related Specific Plan Amendment. The project includes a Specific Plan Amendment to the DIPSA Specific Plan for consistency with the 2040 General Plan. The amendment includes the addition of goals and policies that support the development of Station East as a high-density, transit-oriented area for jobs and housing that reflects new land uses, circulation patterns, design attributes, etc. for the area.

The project site is zoned Research and Development Campus (RDC). The project also includes creation of a new zoning designation, Station East Mixed Use (SEMU), for consistency with the General Plan designation of SEMU and related General Plan and Specific Plan existing and proposed policies for the Station East subarea. A zoning map amendment is also proposed to apply the new zoning district to the project site.

1.2 Alternatives

As required by CEQA, this EIR examines feasible alternatives to the proposed project that would avoid or lessen significant environmental impacts of the proposed project as well as a no project or no action alternative. The EIR studied the following three alternatives.

- Alternative A: No Project Alternative
- Alternative B: Increased Office Alternative
- Alternative C: Reduced Intensity Alternative

The CEQA Guidelines require identification of an environmentally superior alternative (Section 15126.6[e]), which is the alternative that best avoids or lessens significant impacts of the proposed project, even if the alternative would, to some degree, impede attainment of the project objectives. Alternative A, the No Project Alternative, would be the environmentally superior alternative because it would result in fewer impacts overall. However, because Alternative A would not fulfill any of the project objectives and is required to be included in the EIR by CEQA, another alternative must be identified as the environmentally superior alternative.

Alternative B would reduce the project's impacts to the greatest degree by constructing an office development instead of a residential development, which would result in the greatest decrease in operational impacts due to the lower trip generation. Therefore, Alternative B would be the environmentally superior alternative.

Refer to Chapter 6, *Alternatives*, in the Draft EIR for analysis of these alternatives and a detailed discussion of the environmentally superior alternative.

1.3 Areas of Known Controversy/Issues to Be Resolved

Publication of the Notice of Preparation (NOP) for the EIR initiated a 30-day public comment period that began on March 10, 2020 and ended on April 9, 2020. During the NOP review and comment period, two letters and emails were submitted to the City's Economic & Community Development Department by interested parties. One of the letters was submitted by the Union Pacific Railroad and included comments pertaining to noise and vibration, drainage, and trespassing. The second comment letter was the Alameda County Water District and included comments pertaining to dewatering, hazardous material contamination, and utility infrastructure. The comments are addressed in the environmental analysis discussion in the applicable sections of the Draft EIR.

1.4 Summary of Impacts and Mitigation Measures

Table 1-1 lists the potential environmental impacts of the proposed project, the proposed mitigation measures, and residual impacts or significance after mitigation. Impacts are defined as follows:

- Significant, unavoidable adverse impacts that require a statement of overriding consideration, pursuant to Section 15093 of the *CEQA Guidelines* if the proposed project is approved;
- Significant, adverse impacts that can be feasibly mitigated to less than significant levels and that require findings to be made under Section 15091 of the *CEQA Guidelines*;
- Adverse impacts that are less than those allowed by adopted significance thresholds; and
- No impact.

Table 1-1. Summary of Potential Environmental Impacts and Mitigation Measures

Impact	Mitigation Measure(s)	Significance After Mitigation
Agricultural and Forest Resources		
Impact AG-1: The project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.	None required.	No Impact
Impact AG-2: The project would not conflict with existing zoning for agricultural use or a Williamson Act contract.	None required.	No Impact
Impact AG-3: The project would not conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4256), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g]).	None required.	No Impact
Impact AG-4: The project would not result in a loss of forestland or conversion of forestland to non-forest use.	None required.	No Impact
Impact AG-5: The project would not involve other changes in the existing environment, that, because of their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use.	None required.	No Impact
Air Quality		
Impact AQ-1: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Significance After Mitigation
<p>Impact AQ-2a: The proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or State ambient air quality standard during construction.</p>	<p>Mitigation Measure AQ-2a: Require Low-VOC Coatings During Construction The project applicant shall require their contractors, as a condition of contract, to reduce construction-related fugitive ROG emissions by ensuring that low-VOC coatings that have a VOC content of 10 grams/liter (g/L) or less are used during construction. Prior to permit issuance, the project applicant shall submit evidence to the City regarding the use of low-VOC coatings to the City.</p> <p>Mitigation Measure AQ-2b: Use Clean Diesel-Powered Equipment During Construction to Control Construction-Related Emissions The project applicant shall ensure that all off-road diesel-powered equipment used during construction is equipped with EPA-approved Tier 4 Final engines. Prior to permit issuance, the project applicant, in coordination with the construction contractor, shall submit evidence to the City regarding the use of EPA-approved Tier 4 Final engines or cleaner for project construction.</p> <p>Mitigation Measure AQ-2c: Require Use of Diesel Trucks with 2010-Compliant Model Year Engines The project applicant shall ensure that contractors, as a condition of contract, to use diesel trucks that have 2010 model year or newer engines, but no less than the average fleet mix for the current calendar year as set forth in the CARB's EMFAC2017 model database. In the event that 2010 model year or newer diesel trucks cannot be obtained, the project applicant, in coordination with the construction contractor, must provide documentation to the City showing that a good faith effort to locate such engines was conducted, such as outreach to at least two vendors. Prior to permit issuance, the project applicant shall submit evidence compliance with this mitigation measure to the City.</p> <p>Mitigation Measure AQ-2d: Implement BAAQMD Basic Construction Mitigation Measures The project applicant shall require all construction contractors to implement the basic construction mitigation measures recommended by BAAQMD. The emissions reduction measures shall include, at a minimum, all of the following: Prior to permit issuance, the project applicant shall provide documentation that these basic construction measures are reflected in all construction contracts.</p>	<p>Less than Significant with Mitigation</p>

Impact	Mitigation Measure(s)	Significance After Mitigation
	<ul style="list-style-type: none"> • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, unpaved access roads) will be watered two times a day. • All haul trucks will be covered when transporting soil, sand, or other loose material offsite. • All visible mud or dirt track-out material on adjacent public roads will be removed using wet-power vacuum-type street sweepers at least once a day. The use of dry-power sweeping is prohibited. • All vehicle speeds will be limited to 15 miles per hour on unpaved roads. • All roadways, driveways, and sidewalks that are to be paved will be paved as soon as possible. Building pads will be laid as soon as possible after grading, unless seeding or a soil binder is used. • All construction equipment will be maintained and properly tuned in accordance with manufacturers' specifications. All equipment will be checked by a certified visible-emissions evaluator. • Idling times will be minimized, either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure). • Publicly visible signs will be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. BAAQMD's phone number will also be visible to ensure compliance with applicable regulations. 	
<p>Impact AQ-2b: The proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or State ambient air quality standard during concurrent construction and operation.</p>	<p>Implement Mitigation Measures AQ-2a, AQ-2b, AQ-2c, and AQ-2d, described above.</p> <p>Mitigation Measure AQ-2e: Require Low-VOC Coatings during Operation</p> <p>The project applicant shall provide in their CC&Rs a provision to require their contractors, as a condition of contract, to reduce operation-related fugitive ROG emissions by ensuring that low-VOC coatings that have a VOC content of 10 grams/liter (g/L) or less are used during operation.</p> <p>Mitigation Measure AQ-2f: Require Use of Green Consumer</p>	<p>Less than Significant with Mitigation</p>

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>Products during Operation</p> <p>The project applicant shall provide in their CC&Rs for education of residential and commercial occupants requiring green consumer products. Prior to receipt of any certificate of final occupancy, the project applicant shall work with the City of Union City to develop appropriate communications regarding consumer products that generate lower than typical VOC emissions. Examples of green products may include low-VOC cleaning supplies and consumer products.</p>	
<p>Impact AQ-2c: The proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or State ambient air quality standard during operation.</p>	<p>Implement Mitigation Measures AQ-2a, AQ-2b, AQ-2e, and AQ-2f, described above.</p> <p>Mitigation Measure AQ-2g: Purchase of Mitigation Credits for Emissions Exceeding BAAQMD's Daily Pollutant Thresholds</p> <p>The project applicant shall provide annual operational emissions estimates to the City for review prior to receipt of any certificate of final occupancy of new buildings. Average annual emissions shall be forecasted for each operational year over the life of the project (30 years). Emissions shall be calculated using BAAQMD-accepted emissions model and project-specific land use and design features. Should the proposed development not result in operational emissions exceeding BAAQMD's daily pollutant thresholds, the project would result in less-than-significant air quality impacts during operation and no further action would be required.</p> <p>If it is shown that the project would result in exceedances of thresholds during any year of the project's life, the project applicant shall pay a mitigation offset fee pursuant to BAAQMD's emission reduction credit or interchangeable emission credit program, in an amount to be determined prior to the first year of exceedance over the life of the project (30 years). All fees for such credits shall be paid by the project applicant prior to the receipt of any certificate of final occupancy. If, at the time of the certificate of occupancy for the final building is issued, the project applicant demonstrates there are no exceedances, no further action shall be required.</p>	<p>Less than Significant with Mitigation</p>

Impact	Mitigation Measure(s)	Significance After Mitigation
Impact AQ-3: The project could expose sensitive receptors to substantial pollutant concentrations.	Implement Mitigation Measures AQ-2a through 2g , described above.	Less than Significant with Mitigation
Impact AQ-4: The proposed project would not result in the other emissions (such as those leading to odors) adversely affecting a substantial number of people.	None required.	Less than Significant
Impact C-AQ-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects, could result in a significant cumulative impact on air quality.	Implement Mitigation Measures AQ-2a through 2g , described above.	Less than Significant with Mitigation
Biological Resources		
Impact BIO-1: The project could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations by CDFW.	<p>Mitigation Measure BIO-1a: Burrowing Owl Protection</p> <p>The project applicant shall implement the following measures prior to any construction activities:</p> <ul style="list-style-type: none"> • If construction activities occur between April and August, the project applicant shall retain a qualified biologist* to conduct preconstruction surveys for burrowing owl 14 days prior to and within 24 hours of the start of construction activities. • If an active burrow is identified, an appropriate no-disturbance buffer zone shall be established that extends a minimum of 250 feet around the burrow, and construction activities shall be prohibited within this zone during the nesting season (April through July). • Buffers may be modified based on the opinion of the biological monitor and in coordination with CDFW taking into consideration site specific conditions (e.g., line of sight to activities, specific activities taking place). • Representatives of the CDFW shall be consulted to determine whether the nest burrow should be protected and a permanent buffer established or whether the nest site may be destroyed once the young have fled. • Construction activities within the buffer zone shall not proceed until the qualified biologist has determined that the owls have fled and the nest can be destroyed or a CDFW-approved relocation plan is successfully implemented. 	Less than Significant with Mitigation

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>* The experience requirements for a “qualified biologist” shall include a minimum of 4 years of academic training and professional experience in biological sciences and related resource management activities, and a minimum of 2 years of experience conducting surveys for each species that may be present within the project area.</p> <p>Mitigation Measure BIO-1b: Bat Protection</p> <p>The project applicant shall implement the following measures prior to any construction activities:</p> <ul style="list-style-type: none"> • The project applicant shall retain a qualified biologist to conduct preconstruction surveys and implement protective measures for hoary bat, pallid bat, Townsend’s big-eared bat, and other roosting bats. At least 2 months prior to the demolition of the existing buildings and structures, a qualified biologist shall conduct an initial daytime survey to assess the building for potential bat roosting habitat, and to look for bats and bat sign. Qualified biologists shall have knowledge of the natural history of the species that could occur and sufficient experience determining bat occupancy and bat survey techniques. The qualified biologist shall examine both the inside and outside of the building and structures for potential roosting habitat, as well as routes of entry to the building and structures. Locations of any roosting bats, signs of bat use, and entry and exit points shall be noted and mapped on a drawing of the buildings and structures. Roost sites shall also be photographed as feasible. Depending on the results of the habitat assessment, the following steps will be taken as described below. • If the building and structures can be adequately assessed (i.e., all areas of the building and structures can be examined) and no habitat or limited habitat for roosting bats is present and no signs of bat use are present, a preconstruction survey of the interior and exterior of the buildings and structures by a qualified biologist shall be conducted within 24 hours of demolition. • If moderate or high potential habitat is present but there are no signs of bat use, the project applicant shall implement measures under the guidance of a qualified biologist to exclude bats from using the buildings and structures as a roost site, such as sealing 	

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>off entry points. Prior to installing exclusion measures, a qualified biologist shall re-survey the buildings and structures to ensure that no bats are present. Additionally, a preconstruction survey of the interior and exterior of the building and structures shall be conducted within 24 hours of demolition to confirm that no bats are present.</p> <ul style="list-style-type: none"> ● If moderate or high potential habitat is present and bats or bat sign are observed, or if exclusion measures are not installed as described above, or the buildings and structures provides suitable habitat but could not be adequately assessed, the following protective measures shall be implemented. <ul style="list-style-type: none"> ○ Follow-up surveys shall be conducted to determine if bats are still present. If species identification is required by the California Department of Fish and Wildlife (CDFW), surveys using night vision goggles and active acoustic monitoring using full spectrum bat detectors shall be used. A survey plan (number, timing, and type of surveys) shall be determined in coordination with CDFW. ○ Based on the timing of demolition, the extent of bat sign or occupied habitat, and the species present (if determined), the qualified biologists shall work with the City and CDFW to develop a plan to discourage or exclude bat use prior to demolition. The plan may include installing exclusion measures or using light or other means to deter bats from using the buildings and structures to roost. ○ A preconstruction survey of the interior and exterior of the buildings and structures shall be conducted within 24 hours of demolition. ● Depending on the species of bats present, size of the bat roost, and timing of the demolition, additional protective measures may be necessary. Appropriate measures shall be determined in coordination with the CDFW and may include measures listed below. <ul style="list-style-type: none"> ○ To avoid impacts on maternity colonies or hibernating bats, the buildings and structures shall not be demolished while bats are present, generally between April 1 and September 15 (maternity 	

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>season) and from October 30 to March 1 (hibernation).</p> <ul style="list-style-type: none"> ○ Removal of roosting habitat shall only occur only following the maternity season and prior to hibernation, generally between September 15 and October 30, unless exclusionary devices are first installed (as described below). Other measures, such as using lights to deter bat roosting, may be used if developed in coordination with and approved by CDFW. ○ Installation of exclusion devices shall occur before maternity colonies establish or after they disperse, generally from March 1 –30 or September 15–October 30 to preclude bats from occupying a roost site during demolition. Exclusionary devices shall only be installed by or under the supervision of a qualified biologist. <p>The project applicant shall implement the following measures prior to tree removal or trimming:</p> <ul style="list-style-type: none"> ● Project applicant(s) shall avoid impacts on maternity colonies or hibernating bats if identified by avoiding tree removal between April 1 and September 15 (maternity season) and between October 30 and March 1 (hibernation) to the extent feasible. ● No more than 2 weeks prior to the start of tree removal or trimming, a qualified biologist shall examine the trees that are to be removed or trimmed to identify suitable bat roosting habitat. High-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags) shall be identified, and the area around these features shall be searched for bats and bat sign (e.g., guano, culled insect parts, staining). If the qualified biologist concludes that the trees do not provide suitable bat roosting habitat, no further actions are necessary and tree removal or trimming may commence. <p>If the daytime survey identifies moderate or high potential for bats, an evening survey shall be conducted. The qualified biologist shall conduct evening visual emergence surveys of the source habitat feature from a half hour before sunset to 1 to 2 hours after sunset for a minimum of 2 nights within the season when construction shall take place. Night-vision goggles or full-spectrum acoustic detectors</p>	

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>shall be used during emergence surveys to assist in species identification. All emergence surveys shall be conducted during favorable weather conditions (i.e., calm nights with temperatures conducive to bat activity [55 degrees and above] and no precipitation). If it is found that roosting special-status bats are present, protective measures determined by the qualified biologist in coordination with CDFW shall be implemented, as needed (see previous description for the types of measures). The CDFW may require compensatory mitigation for the loss of roosting habitat, depending on the species present and size of the bat roost. Compensation, if required, shall be determined in consultation with the CDFW and may include constructing, installing, or monitoring suitable replacement habitat on-site or near the project site to ensure it functions as intended.</p> <p>Mitigation Measure BIO-1c: Nesting Bird Protection</p> <ul style="list-style-type: none"> • To the extent practicable, vegetation and tree removal, structural demolition, and other construction-related activities shall be performed from September 1 through January 31 to avoid the general nesting period for migratory birds protected by the MBTA. • If construction occurs during migratory bird nesting season (February 1 to August 31), the project applicant shall be responsible for the retention of a qualified biologist with demonstrated nesting bird survey experience to conduct a preconstruction nesting bird survey within 7 days prior to the start of construction in areas that have not been previously disturbed by project activities or after any construction breaks of 7 days or more. The survey shall be performed in suitable habitat to locate active passerine and raptor species (birds of prey) within 100 and 300 feet, respectively, of the applicable construction phase area. • If active nests are located during the preconstruction nesting bird surveys, a qualified biologist shall determine if the schedule of construction activities could affect the active nest; if so, the following measures shall apply, as determined by the qualified biologist: <ul style="list-style-type: none"> ○ If the qualified biologist determines that construction would not affect an active nest, construction may proceed without 	

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>restriction; however, a qualified biologist shall regularly monitor the nest at a frequency determined appropriate for the surrounding construction activity to confirm that there would be no adverse effect. The frequency of spot check monitoring would be determined on a case-by-case basis, considering the particular construction activity, duration, proximity to the nest, and physical barriers that may screen activity from the nest. The qualified biologist may revise his or her determination at any time during the nesting season, in coordination with the City.</p> <ul style="list-style-type: none"> ○ If it is determined that construction may affect an active nest, the qualified biologist shall establish a no-disturbance buffer around the nest(s), and all project work shall halt within the buffer to avoid disturbance or destruction until the qualified biologist determines that the nest is no longer active. Typically, buffer distances are no less than 50 feet for passerines and no less than 250 for raptors. These are standard buffer distances that State and federal regulators agree on as it is widely known in the avian community to minimize disturbances to nesting birds. The buffer size, which can vary with different species, shall be based on species' sensitivity to disturbance, planned work activities in the vicinity of the nest, the level of noise or construction disturbance, the line of sight between the nest and the area(s) of disturbance, ambient levels of noise and other disturbances, and topographical or artificial barriers. ○ Modifying nest buffer distances, allowing certain construction activities within the buffer, and/or modifying construction methods in proximity to active nests shall be done at the discretion of the qualified biologist, in compliance with the California Fish and Game Code and other applicable laws. ○ Any work that must occur within established no-disturbance buffers around active nests shall be monitored by a qualified biologist. If adverse effects in response to project work within the buffer are observed that could compromise the nest, work within the no-disturbance buffer(s) shall halt until the nest occupants have fledged. ○ Any birds that begin nesting within the project area and survey buffers amid construction activities are assumed to be 	

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>habituated to construction-related or similar noise and disturbance levels. Therefore, exclusion zones around nests may be reduced or eliminated in these cases, as determined by the qualified biologist. Work may proceed around these active nests as long as the nests and their occupants are not directly affected.</p> <ul style="list-style-type: none"> ○ Any inactive non-raptor nest on the project site shall be removed by a qualified biologist to deter nesting. 	
Impact BIO-2: The project could interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Implement Mitigation Measures BIO-1a, BIO-1b, and BIO-1c , described above.	Less than Significant with Mitigation
Impact BIO-3: The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Implement Mitigation Measure BIO-1a , described above.	Less than Significant with Mitigation
Impact C-BIO-1: The project could result in a cumulatively considerable contribution to significant cumulative biological resources impacts.	Implement Mitigation Measures BIO-1a, BIO-1b, and BIO-1c , described above.	Less than Significant with Mitigation
Cultural Resources		
Impact CUL-1: The project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.	None required.	No Impact
Impact CUL-2: The project has the potential to cause a substantial adverse change in the significance of an as-yet-undocumented human remains or archaeological resource as defined in Section 15064.5.	<p>Mitigation Measure CUL-2a: Preconstruction Archaeological Sensitivity Training</p> <p>Prior to the start of any construction activities, a qualified archaeologist shall conduct a preconstruction archaeological sensitivity training to the excavation crew. This training shall include an overview of what cultural resource are and why they are important, archaeological terms (such as site, feature, deposit), project site history, types of cultural resources likely to be uncovered during excavation, laws that protect cultural resources, and the unanticipated discovery protocol.</p> <p>Mitigation Measure CUL-2b: Unanticipated Discovery Protocol</p> <p>Should an archaeological resource be encountered during project construction activities, the construction contractor shall halt construction</p>	Less than Significant with Mitigation

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>within 50 feet of the find and immediately notify the City. Construction activities shall be redirected and a qualified archaeologist, in consultation with the City, shall 1) evaluate the archaeological resource to determine if it meets the CEQA definition of a historical or unique archaeological resource and 2) make recommendations about the treatment of the resource, as warranted. If the resource does meet the CEQA definition of a historical or unique archaeological resource, then it shall be avoided to the extent feasible by project construction activities. If avoidance is not feasible, then adverse effects to the deposit shall be mitigated as specified by CEQA Guidelines Section 15126.4(b) (for historic resources) or Section 21083.2 (for unique archaeological resources). This mitigation may include, but is not limited to, a thorough recording of the resource on Department of Parks and Recreation Form 523 records, or archaeological data recovery excavation. If data recovery excavation is warranted, CEQA Guidelines Section 15126.4 (b)(3)(C), which requires a data recovery plan prior to data recovery excavation, shall be followed. If the significant identified resources are unique archaeological resources, mitigation of these resources shall be subject to the limitations on mitigation measures for archaeological resources identified in CEQA Guidelines Sections 21083.2 (c) through 21083.2 (f).</p>	
<p>Impact CUL-3: The project has the potential to disturb human remains, including those interred outside of formal cemeteries.</p>	<p>Mitigation Measure CUL-3: Handling of Human Remains In the event that any human remains are encountered during construction activities, work within 50 feet of the discovery shall be redirected and the Alameda County Coroner shall be notified immediately. Concurrently, an archaeologist shall be contacted to assess the situation and consult with the appropriate agencies. If the human remains are of Native American origin, the coroner shall notify the NAHC within 24 hours of this identification in accordance with section 5097.98 of the California Public Resources Code, and section 7050.5 of the California Health and Safety Code, as applicable. The NAHC shall identify a most likely descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.</p>	<p>Less than Significant with Mitigation</p>
<p>Impact C-CUL-1: The project could result in a cumulatively considerable contribution to significant cumulative cultural resources impacts.</p>	<p>Implement Mitigation Measures CUL-2a, CUL-2b, and CUL-3, described above.</p>	<p>Less than Significant with Mitigation</p>

Impact	Mitigation Measure(s)	Significance After Mitigation
Energy		
Impact EN-1: The project could result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.	Implement Mitigation Measure GHG-1a , described below.	Less than Significant with Mitigation
Impact EN-2: The project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	None required.	Less than Significant
Impact C-EN-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in wasteful, inefficient, or unnecessary consumption of energy resources during project operation or construction.	None required.	Less than Significant
Impact C-EN-2: The project, in combination with past, present, and reasonably foreseeable projects, would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	None required.	Less than Significant
Geology, Soils, and Paleontological Resources		
Impact GEO-1: The project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	None required.	Less than Significant
Impact GEO-2: The project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismically related ground failure, including liquefaction.	None required.	Less than Significant
Impact GEO-3: The project would not result in substantial soil erosion or the loss of topsoil	None required.	Less than Significant
Impact GEO-4: The project would not be located on a geologic unit or soil that is unstable, or that will become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Significance After Mitigation
Impact GEO-5: The project would not be located on expansive soil, as defined in Section 1802.3.2 of the California Building Standards Code (2007), creating substantial direct or indirect risks to life or property.	None required.	Less than Significant
Impact GEO-6: The project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	None required.	No Impact
Impact GEO-7: The project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Mitigation Measure GEO-7: Paleontological Monitoring and Mitigation Plan Prior to initial ground disturbance in previously undisturbed strata of geologic units, the applicant shall retain a Qualified Paleontologist, as defined by the Society of Vertebrate Paleontology, to direct all mitigation measures related to paleontological resources and design a Paleontological Mitigation and Monitoring Program (PMMP) for the proposed project. The PMMP shall include measures for a preconstruction survey, a training program for construction personnel, paleontological monitoring, fossil salvage, curation, and final reporting, as applicable.	Less than Significant with Mitigation
Impact C-GEO-1: The project, in combination with past, present, and reasonably foreseeable future projects, would not result in a significant cumulative impact on geology, soils, and paleontology.	None required.	Less than Significant
Greenhouse Gases		
Impact GHG-1a: The proposed project could generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment during construction.	Mitigation Measure GHG-1a: Require Implementation of BAAQMD-recommended Construction BMPs The project sponsor shall require their contractors, as a condition of contracts (e.g., standard specifications), to reduce construction-related GHG emissions by implementing BAAQMD's recommended best management practices, including (but not limited to) the following measures (based on BAAQMD's CEQA Guidelines). The project applicant shall submit evidence of compliance to the City prior to permit issuance. <ul style="list-style-type: none"> • Ensure alternative fueled (e.g. biodiesel, electric) construction 	Less than Significant with Mitigation

Impact	Mitigation Measure(s)	Significance After Mitigation
	vehicles/equipment make up at least 15 percent of the fleet <ul style="list-style-type: none"> • Use local building materials of at least 10 percent (sourced from within 100 miles of the Planning Area) • Recycle and reuse at least 65 percent of construction waste or demolition materials 	
Impact GHG-1b: The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment during operation.	None required.	Less than Significant
Impact GHG-2: The proposed project could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Implement Mitigation Measure GHG-1a, described above.	Less than Significant with Mitigation
Hazards and Hazardous Materials		
Impact HAZ-1: The project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	None required.	Less than Significant
Impact HAZ-2: The project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Mitigation Measure HAZ-2a: Site Management Plan Prior to issuance of a grading permit, the project sponsor shall retain the services of a qualified environmental engineering firm to prepare and implement, during site preparation and grading activities, a Site Management Plan (SMP). The SMP shall be designed to protect human health and the environment and include protocols, measures, and techniques for the proper handling, management, and disposition of affected soils and groundwater associated with construction dewatering (if any) found on the site and any areas of off-site work during site preparation and grading activities. The SMP shall also be designed to protect workers and off-site receptors during site activities and ensure the proper characterization, management, and/or disposal of contaminated environmental media that exceed applicable environmental screening levels established by the RWQCB, regional screening levels established by EPA, or other screening thresholds approved for the project. The environmental engineering firm shall determine the applicability of Bay Area Air Quality Management	Less than Significant with Mitigation

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>District (or other agency) rules for fugitive dust control and/or VOC emissions during earthwork, and the SMP shall provide compliance protocols to be adhered to, including air monitoring protocols, if required. The SMP shall be prepared by a commercial environmental engineering firm with demonstrated expertise and experience in the preparation of SMPs and be stamped by an appropriately licensed professional. The SMP shall be submitted for City and outside agency review in conformance with DIPSA Specific Plan, Toxic and Hazardous Substances Policy 5, and implemented throughout all ground-disturbing work.</p> <p>The SMP shall establish protocols and measures for addressing the discovery of presently unknown environmental conditions or subsurface structures such as USTs or sumps. At a minimum, there shall be protocols for the sampling and testing of soil unearthed during the construction of new or replacement of existing water mains off-site. If the environmental engineering firm subsequently identifies the need for further sampling, the project sponsor shall implement this and any other requirements identified in the SMP. The project sponsor shall enter into a voluntary agreement with the San Francisco Bay Regional Water Quality Control Board (RWQCB) for review and approval of the SMP. As lead agency for the site cleanup, the RWQCB will also have oversight authority pertaining to implementation of the SMP. If directed by the RWQCB, additional site investigation and characterization may be required prior to construction to ensure that hazardous materials in the soil, soil vapor, and/or groundwater do not exceed applicable regulatory thresholds. If additional site investigation and characterization is required prior to construction, the project sponsor shall implement said studies (and their respective recommendations,¹ if necessary) prior to construction. The RWQCB will also consult and coordinate with the ACWD on the scope of the SMP. The project sponsor shall provide a copy of the SMP to the ACWD at the same time the SMP is submitted to the RWQCB for review and comment. As part of its review of the SMP, the ACWD shall also review</p>	

¹ Recommendations would depend on the type of features or contaminant(s) encountered and extent of contamination and the media affected.

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>the design of long-term drainage and stormwater treatment plans. The project sponsor shall incorporate all recommendations and requirements from the ACWD into the SMP and drainage/stormwater treatment plans as appropriate. As the oversight agency, the RWQCB shall provide the project sponsor with comments on the SMP. Prior to issuance of the grading permit, the project sponsor shall provide the City with a copy of the approved SMP and implement the SMP during site preparation and grading under the approving agency's oversight at the project sponsor's cost.</p> <p>Mitigation Measure HAZ-2b: Engineering Controls on the Project Site</p> <p>Prior to the issuance of grading permits, the project sponsor shall demonstrate compliance with the recommendations in the Step-out Soil Gas Assessment (ENGEO 2013) to address vapor intrusion concerns. Implementation of engineering controls shall be implemented on the project site in accordance with the Step-out Soil Gas Assessment (ENGEO 2013) to address the presence of elevated VOCs (in areas where TCE and PCE concentrations exceeded residential screening levels). Engineering controls shall be installed to redirect and or minimize VOC concentrations. Said engineering controls shall consist of controls that allow for appropriate ventilation and discharge of the vapors into the atmosphere.</p> <p>Specific engineering controls may include, but will not be limited to:</p> <ul style="list-style-type: none"> • Installation of subsurface migration barriers; and/or • Inclusion of ventilated foundations for any proposed structures; and/or • The use and implementation of an alternative method or structural design that would address soil gas releases and reduce the potential for hazardous conditions to occur. <p>Appropriate engineering control system(s) shall be determined with concurrence, approval, and oversight of the DTSC and RWQCB (as applicable) and shall be dependent on future building placement and construction. Any DTSC requirements for long-term operation, monitoring, and maintenance (OMM) of the vapor mitigation systems shall be complied with, including any requirements to secure the cost of such OMM with a financial security instrument such as a performance bond. Any land use covenant required by</p>	

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>DTSC to ensure the long-term efficacy of the vapor mitigation systems shall be recorded in property title records by the project sponsor or successor owner. If monitoring or extraction wells remain in place at the time that engineering controls are submitted to DTSC and RWQCB, the placement of such engineering controls shall either not interfere with operation of the well facilities, or DTSC and/or RWQCB shall have approved any required modifications to the well facilities.</p> <p>Prior to project grading, the project sponsor shall enter into a voluntary oversight agreement (or CLRRRA agreement) with DTSC and submit for DTSC's approval a remedial plan for the evaluation and removal of known hazardous substances present in soil. The remedial plan shall specify risk-based screening levels appropriate for future residential use (in the residential areas) and for commercial use (in the commercial areas). The project sponsor shall implement the approved remedial plan under DTSC's oversight. Confirmation sampling shall document that all soil exceeding the screening levels has been successfully removed. Prior to commencement of project grading, DTSC shall have issued written concurrence that known soil contamination has been satisfactorily addressed. The project sponsor shall provide a copy of DTSC's written concurrence to the City.</p> <p>Mitigation Measure HAZ-2c: Conduct a Hazardous Building Materials Survey prior to Demolition Activities</p> <p>Prior to the issuance of a demolition permit, a comprehensive Hazardous Building Materials Assessment shall be conducted by a licensed contractor prior to demolition activities associated with the project. Should this assessment determine that lead-based paint, treated-wood waste, and/or asbestos or other hazardous building materials are present, the following actions shall be implemented:</p> <ul style="list-style-type: none"> ● A health and safety plan shall be developed by a certified industrial hygienist for potential lead-based paint, asbestos or other hazardous building materials risks present during demolition. The health and safety plan shall then be implemented by a licensed contractor. <ul style="list-style-type: none"> ○ Both the federal Occupational Safety and Health 	

Impact	Mitigation Measure(s)	Significance After Mitigation
	<p>Administration (OSHA) and the California Occupational Safety and Health Administration (Cal/OSHA) regulate worker exposure during construction activities that affect lead-based paint. The Interim Final Rule found in 29 Code of Federal Regulations, Part 1926.62 covers construction work in which employees may be exposed to lead during such activities as demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance.</p> <ul style="list-style-type: none"> ● Acquire necessary approvals from the City and/or County for specifications or commencement of abatement activities. Abatement activities shall be conducted by a licensed contractor. ● Prior to demolition of construction debris containing asbestos the Bay Area Air Quality Management District (BAAQMD) shall be notified ten days prior to initiating construction and demolition activities. Demolition permit submittal to the City shall include BAAQMD Asbestos Demolition/Renovation job number (J#) and related BAAQMD acknowledgement letter. <ul style="list-style-type: none"> ○ Asbestos shall be disposed of at a licensed disposal facility. Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. ○ The local office of the Cal/OSHA shall be notified of asbestos abatement activities. ○ Asbestos abatement contractors shall follow State regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos containing material. ○ Asbestos removal contractors shall be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur shall have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services in Sacramento. 	

Impact	Mitigation Measure(s)	Significance After Mitigation
	<ul style="list-style-type: none"> Contractors and subcontractors shall comply with Union City Municipal Code 13.42.050 in performing a priority building materials screening assessment. The contractor and hauler of hazardous building materials shall file a Hazardous Waste Manifest that details the hauling of the material from the site and the disposal of it. Pursuant to California law, the City of Union City shall not issue the required permit until the applicant has complied with the notice requirements described above. 	
Impact HAZ-3: The project would not emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	Implement Mitigation Measure HAZ-2a, described above.	Less than Significant with Mitigation
Impact HAZ-4: The project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would not create a significant hazard to the public or the environment.	Implement Mitigation Measure HAZ-2a, described above.	Less than Significant with Mitigation
Impact HAZ-5: The project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.	None required.	Less than Significant
Impact C-HAZ-1: The project, in combination with past, present, and reasonably foreseeable future projects, would not result in a significant cumulative impact on hazards and hazardous materials.	None required.	Less than Significant
Hydrology and Water Quality		
Impact WQ-1: The project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Significance After Mitigation
Impact WQ-2: The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project would impede sustainable groundwater management of the basin.	None required.	Less than Significant
Impact WQ-3: The project could alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or the addition of impervious surfaces, in a manner that would: <ul style="list-style-type: none"> a. Result in substantial erosion or siltation on- or off-site; b. Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site; c. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or d. Impede or redirect floodflows. 	None required.	Less than Significant
Impact WQ-4: The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management.	None required.	Less than Significant
Impact C-WQ-1: The project, in combination with past, present, and reasonably foreseeable future projects, would not result in a significant cumulative impact on hydrology and water quality.	None required.	Less than Significant
Land Use and Planning		
Impact LU-1: The project would not physically divide an established community.	None required.	Less than Significant
Impact LU-2: The project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Significance After Mitigation
Impact C-LU-1: The project, in combination with past, present, and reasonably foreseeable future projects, would not result in a significant cumulative impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	None required.	Less than Significant
Mineral Resources		
Impact MIN-1: The project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State.	None required.	No Impact
Impact MIN-2: The project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.	None required.	No Impact
Noise		
Impact NOI-1: The project could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	<p>Mitigation Measure NOI-1a: Construction Noise Control Plan</p> <p>Prior to demolition or grading permit issuance, the project applicant shall submit a noise control plan to reduce construction noise levels such that project construction noise would be in compliance with the City's Community Noise Ordinance, as determined by a qualified acoustical consultant, for approval by the Economic and Community Development Department. The plan shall require one of the following measures in order to achieve this result:</p> <ul style="list-style-type: none"> ● Noise producing construction activities shall be restricted to the hours of 8:00 a.m. to 8:00 p.m. during weekdays; 9:00 a.m. to 8:00 p.m. on Saturdays; and 10:00 a.m. to 6:00 p.m. on Sundays and holidays. In addition, permitted construction activities shall meet at least one of the following noise limitations: <ul style="list-style-type: none"> ○ No individual piece of equipment shall be permitted to produce a noise level exceeding 83 dBA as measured at a distance of 25 feet. This could be achieved in a variety of ways, including but not limited to selecting quieter equipment that generates noise levels of less than 83 dBA L_{max} at a distance of 25 feet, or incorporating sound muffling devices on construction equipment; <p>OR</p>	Less than Significant with Mitigation

Impact	Mitigation Measure(s)	Significance After Mitigation
	<ul style="list-style-type: none"> ○ The noise levels at any point outside the property plane² of the project shall not exceed 86 dBA. This could be achieved in a variety of ways, including but not limited to ensuring equipment is operating at sufficient distances from the edge of the project site property line, incorporating sound muffling devices on construction equipment, or utilizing temporary noise barriers to reduce construction noise when construction equipment must be in proximity to the edge of the property line (particularly near noise-sensitive land uses). ● All construction equipment shall have appropriate sound muffling devices, which shall be properly maintained and used at all times such equipment is in operation. ● The project contractor shall place all stationary construction equipment so that emitted noise is directed away from the closest off-site sensitive receptors. ● The construction contractor shall locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and the noise-sensitive receptors closest to the project construction areas. ● A publicly visible sign shall be posted with the telephone number and contact information for the designated on-site construction manager available to receive and respond to noise complaints. This person shall report all complaints to the City of Union City Public Works Department. <p>Mitigation Measure NOI-1b: Operational Equipment Noise Control Plan</p> <p>An Operational Equipment Noise Control Plan shall be prepared prior to issuance of the first City-issued building permit for the proposed development for approval by the Building Division. The plan shall include a noise analysis for the project that evaluates HVAC and other stationary mechanical equipment with the potential to generate noise levels in excess of ambient noise levels by 10 dB on new residential properties and by 12 dB on new commercial properties.</p>	

² For the purposes of this analysis, the “property plane” is assumed to be the boundaries of the project site.

Impact	Mitigation Measure(s)	Significance After Mitigation
	The analysis shall be prepared by persons qualified in acoustical analysis and/or engineering and demonstrate with reasonable certainty that the operational noise sources associated with the project would not result in a noise level that would be in excess of the Community Noise Ordinance. All recommendations from the acoustical analysis necessary for ensuring that noise sources would meet applicable requirements of the noise ordinance and would not result in 10 dB (for sources on residential properties) or 12 dB (for sources on commercial properties) increases in ambient noise levels shall be incorporated into plans submitted for building permit issuance and building operation.	
Impact NOI-2: The project would not generate excessive ground-borne noise levels.	None required.	Less than Significant
Impact C-NOI-1: The project would not result in a cumulatively considerable contribution to significant cumulative noise and vibration impacts.	Implement Mitigation Measures NOI-1a and NOI-1b , described above.	Less than Significant with Mitigation
Population and Housing		
Impact POP-1a: The project would not induce substantial unplanned population growth in an area directly (for example, by proposing new homes and businesses).	None required.	Less than Significant
Impact POP-1b: The project would not induce substantial unplanned population growth in an area indirectly (for example, through extension of roads or other infrastructure).	None required.	Less than Significant
Impact C-POP-1: The project, in combination with past, present, and reasonably foreseeable future projects, would not result in a significant cumulative impact on population and housing.	None required.	Less than Significant
Public Services and Recreation		
Impact PSR-1: The project would increase the demand for police service or fire protection service but not to such an extent that construction of new or expanded facilities would be required.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Significance After Mitigation
Impact PSR-2: The project would not substantially increase student enrollment such that new or physically altered facilities would be required.	None required.	Less than Significant
Impact PSR-3: The project would increase the use of existing neighborhood and regional parks or other recreational facilities, but would not result in substantial deterioration or physical degradation of such facilities or result in adverse physical environmental effects from development of new recreational facilities.	None required.	Less than Significant
Impact PSR-4: The project would increase the demand for public service and community facilities, but not to such an extent that construction of new or expanded facilities would be required.	None required.	Less than Significant
Impact C-PSR-1: The project, in combination with past, present, and reasonably foreseeable future projects, would not result in a significant cumulative impact on public services and recreation.	None required,	Less than Significant
Tribal Cultural Resources		
Impact TCR-1: The project could cause a potentially substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the CRHR, in a local register of historic resources (as defined in PRC Section 5020.1(k)). This also includes tribal cultural resources determined to be significant by the lead agency in its discretion and supported by substantial evidence (as defined in subdivision (c) of Public Resources Code Section 5024.1).	Implement Mitigation Measures CUL-2a, CUL-2b, and CUL-3 , described above.	Less than Significant with Mitigation
Impact C-TCR-1: The project could result in a cumulatively considerable contribution to significant cumulative tribal cultural resources impacts.	Implement Mitigation Measures CUL-2a, CUL-2b, and CUL-3 , described above.	Less than Significant with Mitigation

Impact	Mitigation Measure(s)	Significance After Mitigation
Transportation		
Impact TRA-1: The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	None required.	Less than Significant
Impact TRA-2: The proposed project would not be in conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).	None Required.	Less than Significant
Impact TRA-3: The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment).	None required.	Less than Significant
Impact TRA-4: The proposed project would not result in inadequate emergency access.	None required.	Less than Significant
Impact C-TRA-1: The project, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	None required.	Less than Significant
Impact C-TRA-2: The project would not result in a cumulatively considerable contribution to significant cumulative impacts related to a conflict or inconsistency with CEQA Guidelines Section 15064.3, subdivision (b).	None required.	Less than Significant
Impact C-TRA-3: The project, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment).	None required.	Less than Significant

Impact	Mitigation Measure(s)	Significance After Mitigation
Impact C-TRA-4: The project, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in inadequate emergency access.	None required.	Less than Significant
Utilities and Service Systems		
Impact UT-1: In the immediate project area, the project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects.	None required.	Less than Significant
Impact UT-2: The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	None required.	Less than Significant
Impact UT-3: The project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	None required.	Less than Significant
Impact UT-4: The project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. In addition, the proposed project would comply with federal, State, and local management and reductions statutes and regulations related to solid waste.	None required.	Less than Significant
Impact C-UT-1: The project, in combination with past, present, and reasonably foreseeable future projects, would not result in a significant cumulative impact on public services and recreation.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Significance After Mitigation
Wildfire		
Impact WF-1: The project would not substantially impair an adopted emergency response plan or emergency evacuation plan.	None required.	Less than Significant
Impact WF-2: The project would not due to slope, prevailing winds, or other factors exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	None required.	No Impact
Impact WF-3: The project would not require the installation or maintenance of associated infrastructure, such as roads, fuel breaks, emergency water sources, power lines, or other utilities, that may exacerbate fire risks or that may result in temporary or ongoing impacts on the environment.	None required.	Less than Significant
Impact WF-4: The project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	None required.	No Impact
Impact C-WF-1: The project, in combination with past, present, and reasonably foreseeable future projects, would not result in a significant cumulative impact on a statewide or locally adopted emergency response plan or emergency evacuation plan.	None required.	Less than Significant
Impacts Not Evaluated Further		
BIO: Riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS.	None required.	Not Applicable
BIO: Impact through direct removal, filling, hydrological interruption, or other means on State or federally protected wetlands (including, but not limited to marshes, vernal pools, coastal areas, etc.).	None required.	Not Applicable

Impact	Mitigation Measure(s)	Significance After Mitigation
BIO: Provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	None required.	Not Applicable
GEO: Potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as described on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publications 42).	None required.	Not Applicable
GEO: Potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.	None required.	Not Applicable
HAZ: The project, if located within an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would not result in a safety hazard or excessive noise for people residing or working in the project area.	None required.	Not Applicable
WQ: In flood hazard, tsunami, or seiche zones, risk a release of pollutants due to project site inundation.	None required.	Not Applicable
NOI: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, will the project expose people residing or working in the project area to excessive noise levels.	None required.	Not Applicable
NOI: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Train Horn Noise)	None required.	Not Applicable
POP: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.	None required.	Not Applicable

2.1 The EIR Process

This Final Environmental Impact Report (Final EIR) is an informational document prepared by the City of Union City (City) to evaluate the potential environmental impacts that would result from the Station East Residential/Mixed-Use Project, defined as the proposed project or project for purposes of this environmental review. The primary objectives of the EIR process under the California Environmental Quality Act (CEQA) are to inform decision-makers and the public about a project's potentially significant environmental effects, identify feasible ways to minimize significant effects, and consider a reasonable range of alternatives to the project.

As prescribed by the *CEQA Guidelines* Section 15088 and 15132, the City is required to evaluate comments on environmental issues received during the public comment period from persons who have reviewed the Draft EIR and to prepare written responses to those comments. This document, together with the Draft EIR (incorporated by reference in accordance with *CEQA Guidelines* Section 15150), will comprise the Final EIR for this project. Pursuant to the requirements of CEQA, the City Council must certify the EIR as complete and adequate prior to approval of the project or a project alternative.

This Final EIR contains individual responses to each comment received during the public review period for the Draft EIR, corrections and additions to the Draft EIR text, and the Mitigation Monitoring and Reporting Program (MMRP). In accordance with *CEQA Guidelines* Section 15088(b), the written responses describe the disposition of significant environmental issues raised.

2.2 EIR Certification Process and Project Approval

In accordance with the requirements of CEQA, the EIR must be certified as complete and adequate prior to any action on the proposed project. Once the EIR is certified and all information considered, using its independent judgment, the City Council can take action to go forward with the proposed project, make changes, select an alternative to the proposed project, or deny the project.

While the information in the EIR does not constrain City Council's ultimate decision under its land use authority, the City Council must respond to each significant effect and mitigation measure identified in the EIR by making findings supporting its decision.

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3.1 Summary of Comments Received

This section includes comments received during the public comment period for the Draft Environmental Impact Report (EIR) prepared for the Station East Residential/Mixed-Use Project as well as responses to all comments that raised significant environmental issues. Where a comment resulted in the need to make a minor change to the text in the Draft EIR, a notation is made in the response, indicating that the text is revised. Changes in text are signified by ~~strikeout~~ where text is removed or by underline where text is added. These changes, which are also listed in Chapter 4, *Corrections and Additions to the Draft EIR*, do not introduce significant new information or otherwise affect the analysis or conclusions of the EIR such that recirculation would be required under California Environmental Quality Act (CEQA) Guidelines Section 15088.5. Rather, this additional information merely clarifies and amplifies the analysis set forth in the Draft EIR.

The Draft EIR was circulated for a 45-day public review period that began on November 6, 2020 and ended on December 21, 2020. The Union City Planning Commission (Planning Commission) held a meeting on November 19, 2020, during which the project and Draft EIR were discussed. Public comments were received during this meeting. The City of Union City (City) received five written comment letters during the public review period.

The commenters, as well as the page number on which each commenter's letter appears, are listed in Table 3-1.

Table 3-1. Comments Received on the Draft EIR

Letter No.	Commenter	Page No.
1	Planning Commission (meeting minutes)	3-2
2	Alameda County Water District	3-21
3	Barg Coffin Lewis & Trapp, LLP	3-32
4	Department of Toxic Substances Control	3-68
5	Lozeau Drury, LLP	3-81
6	Aqua Terra Aeris Law Group, LLP	3-122

The comment letters and responses follow. The comment letters have been numbered sequentially. Each issue raised by the commenter, if more than one, has been assigned a number. The responses to each comment identify first the number of the comment letter, then the number assigned to each issue (Response 1.1, for example, indicates that the response is for the first issue raised in Comment 1).

**CITY OF UNION CITY
MINUTES FOR THE REGULAR PLANNING COMMISSION MEETING
ON THURSDAY, NOVEMBER 19, 2020 7:00 P.M.
HELD VIA TELECONFERENCE**

1. **ROLL CALL:** Chairperson Jo Ann Lew;
Vice Chairperson Ray Gonzales; Commissioner Lee Guio;
Commissioner Harpal Mann; Commissioner Scott Sakakihara

STAFF: Carmela Campbell (Economic & Community Development Director);
Alex Mog (Deputy City Attorney); Leslie Carmichael (Planner);
Farooq Azim (City Engineer); Denisse Anzoategui (Administrative
Assistant); Tony Silveira (Moderator);
2. **APPROVAL OF MINUTES:**
 - A. The regular Planning Commission minutes of August 20, 2020 will be provided in the next regular Planning Commission Packet.
 - B. The regular Planning Commission minutes of November 5, 2020 will be provided in the next regular Planning Commission Packet.
3. **ORAL COMMUNICATIONS:** None.
4. **WRITTEN COMMUNICATIONS:** None.
5. **PUBLIC HEARINGS:**
 - A. **CONTINUED HEARINGS:** None.
 - B. **NEW HEARINGS:**
 1. **CHANDRA MIETTE, 1998 WHIPPLE ROAD (APN:475-165-90) SITE DEVELOPMENT REVIEW (SD-19-001) AND USE PERMIT (UP-19-003);** The applicant is requesting approval of a Site Development Review (SD-19-001) and Use Permit (UP-19-003) for a new 7-Eleven convenience store and gasoline dispensing facility to be constructed on a vacant 26,000-sf parcel located at 1998 Whipple Road. A mitigated negative declaration was prepared for the project, which determined that the project would not result in any significant environmental impacts with the incorporation of mitigation measures.

Staff received comments from the Alameda County Water District during the public comment period for the IS/MND that was prepared for the project. Staff is requesting that this item be continued to the next hearing date, December 5, 2020 to allow staff and the applicant adequate time to respond the District's comments.

The motion was carried by the following roll call vote:

AYES: (GONZALES, GUIO, LEW, MANN, SAKAKIHARA)

NOES: NONE

ABSTAIN: NONE

ABSENT: NONE

6. SUPPLEMENTAL STAFF REPORTS:

A. CONTINUED REPORTS: None.

B. NEW REPORTS:

1. **INTEGRAL COMMUNITIES, INC, PROPERTY GENERALLY BOUNDED BY DECOTO ROAD TO THE NORTH, 7TH STREET TO THE EAST, BRADFORD WAY TO THE SOUTH AND THE UPRR NILES SUBDIVISION RAIL LINE TO THE WEST. (APNS 87-21-5-2, 87-21-13-1, 87-21-13-2, 87-23-10, 87-23- 12, AND 87-23-13-2;** Study Session to receive comments on the draft Environmental Impact Report (EIR) for the Station East Residential/Mixed Use Project and to receive an update on the proposal for a mixed use residential development on approximately 26.5 acres in the Station East subarea of the Station District, including 30,800 sq. ft. retail, 974 multi-family units including 146 affordable housing units, and public realm improvements including new roadways, multi-modal improvements, and parks. In accordance with the California Environmental Quality Act (CEQA), a draft Environmental Impact Report (EIR) has been prepared.

Leslie Carmichael, Planner, presented the staff report.

Commissioner Gonzales stated that one of the most notable differences between the 2019 and 2020 proposal was the increase of the multifamily units. Commissioner Gonzales asked if the intention was to remove some of the open areas to allow for further development.

Ms. Carmichael replied that the building footprints did not change, and that the additional units are included in the previous building footprint.

Commissioner Gonzales asked if the public parking and landscape buffers decreased.

Ms. Carmichael replied that the Community Park B is slightly smaller because of the accessible parking that was added and some other slight adjustments in the paseos as well.

Commissioner Gonzales asked about the reduction of the minimum density from 30 units per acre, down to 25 units per acre and if the goal was to have more housing when housing has been reduced. Commissioner Gonzales asked if it was to stay within a certain average density.

Ms. Carmichael replied that the average density is 64 which still meets the City's goals of achieving higher density housing near the BART station. Ms. Carmichael added that what adjusting the minimum density does is gives the applicant some flexibility to include more townhouse style products in a portion of the site.

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▲ Carmela Campbell, Economic & Community Development Director, added that although staff recommended reduction of the minimum density to twenty-five in the General Plan, the required minimum average density was forty-five and it was increased to sixty. Ms. Campbell added that it still meets the intent of the General Plan with slight modifications.

Commissioner Gonzales recalled that in 2019 when the project first came to the Commission the applicant did not sufficiently meet the affordable housing requirement and would be paying the in-lieu fees but asked if the fees would be waived as they have met the requirement.

Ms. Carmichael replied that the 15% requirement would be 146.1, so they would only be paying the in-lieu fees for the 0.1 portion and provide the other 146 units on site.

Ms. Campbell added that the reason they increased the number of units was because of the feedback they received through the last outreach process.

Commissioner Gonzales questioned what the rationale was to get the affordable units built during the first phase but could create a financing issue for the developer because affordable does not collect as much cash upfront or cashflow.

Ms. Carmichael deferred the question to the applicant but did add that the City's municipal code requires all affordable housing to be provided in the first phase.

■ Commissioner Guio asked if the additional units provided meant that the units were smaller. Ms. Carmichael noted that twenty-five units were added the PA 3 and that in PA 1 some of the market rate units were switched to below market rate units.

Commissioner Guio asked for clarification of a section of page 5 of the staff report.

Ms. Carmichael explained how the applicant is proposing affordable rental units to satisfy the inclusionary requirement for below market rate ownership units.

Commissioner Guio stated that Community Facilities District is new to him and asked if there are any concerns with the terms.

Ms. Carmichael replied that the City does have some other community facilities districts as it is a way to finance some of the infrastructure. Ms. Carmichael added that there are bonds issued where the future property owners have assessments that repay the bonds. Ms. Carmichael added that it is a financing mechanism and that they are just in the beginning stages of evaluating the applicant's proposal.

Commissioner Guio asked if those bond payments would last for many years. Ms. Carmichael replied yes.

Commissioner Guio asked if the development agreement will require specific timing of the development of all the planning areas.

Ms. Carmichael replied that it is something that's negotiated and that they are not far along yet in the development agreement consideration and that will be coming back and will get direction from the City Council in the future.

▼ Commissioner Guio expressed concerns over street names.

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Ms. Campbell replied that most streets will be renamed following the street naming policy.

Commissioner Mann stated that the addition of more affordable housing is a positive. Commissioner Mann raised concerns over the elimination of parking that is proposed at Shorty Garcia Park along Seventh Street. Commissioner Mann stated that the park is heavily used by people of lower income background and is filled with families and a soccer league during the weekends. Commissioner Mann asked where the families would park.

Farooq Azim, City Engineer replied that not all the parking on Seventh Street would be eliminated. Mr. Azim added that staff is aware of the issue and would be working with the school district to negotiate if it would be feasible to use the existing parking lot for park users.

Commissioner Mann asked if it would be possible to have a condition that will ask for parking to be provided. Commissioner Mann stated that it would be a disservice to take away the ability for the population to access the park. Commissioner Mann was concerned that the rights of the population would not have representation versus the right of the developer.

1.3

Mr. Azim acknowledged Commissioner Mann's concerns and added that there are quite a few competing interests like adding a bike lane and providing wide enough streets that would allow traffic flow.

Commissioner Mann asked if it could be called a park if there was no parking. Mr. Azim replied that there would be parking proposed, but it would be a walking distance along a sidewalk.

Commissioner Mann asked if it was possible to have parking on Decoto.

Mr. Azim replied that Decoto would also have buffered bike lanes and not adequate area for safe parking.

Ms. Campbell added that parking is not allowed on Decoto as it could create an unsafe situation for folks getting out of their cars. Ms. Campbell added that they would pass on Commissioner Mann's concerns when presenting to the City Council. Ms. Campbell added that the comments would be taken seriously in the design of the area and noted just as Mr. Azim had mentioned there are ongoing conversations with the school district to be able to utilize the parking lot.

Commissioner Sakakihara asked if the feedback for additional affordable housing the main impetus for the redesign was which had a waterfall effect.

1.4

Ms. Campbell replied that a lot of the changes were just refinements to the design as it continues to work through issues with the design. Ms. Campbell added that the additional affordable housing units was incorporated with the addition of another story, so it did not impact the footprint. Ms. Campbell added that there weren't too many changes to Park B, just concerns over access in the way that the building configuration of the affordable housing, and that is why we saw some of the changes.

Commissioner Sakakihara stated that the access didn't change to PA3 or that smaller public space of previously public space, and it was recognized that it wasn't feasible to be a public park in this draft.

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Ms. Campbell replied yes, and if you look at the map, you'll see that eventually when the industrial site behind is developed it will open up. Ms. Campbell lastly added that the affordable housing projects sometime have to provide their own private park area for residents.

Commissioner Sakakihara noted that the next steps would be looking at the final version of the EIR and was wondering how it lines up with the other outstanding items. Commissioner Sakakihara asked what the expectation would be as to when the Planning Commission and the City Council would be considering the considerations noted.

Ms. Campbell replied that it would probably be January for a City Council study session and the Commission for affordable housing and the Park and Recreation Commission for park programming. Ms. Campbell added that at the same time, the consultants will be working on the responses to comments document that essentially makes up final EIR. Ms. Campbell added that then all of that would come back to the decision makers in about March.

Chairperson Lew referred to a slide on the presentation that referred to the addition of office space and removal of residential space that was determined to be environmentally superior alternative. Chairperson Lew asked if the evaluation of alternatives stop the project from being developed as proposed.

Ms. Carmichael replied that it is up to the decision-makers to consider the information in the EIR, but the EIR doesn't dictate what the decision makers can do. Ms. Carmichael added that this is information for the decision makers to consider regarding alternatives but the analysis in the EIR explains why they do or do not advance the project objectives and the City's objectives for this area.

Chairperson Lew asked if it doesn't carry a lot of weight, is it just an exercise that is required by the process.

Ms. Carmichael replied that it is a fair assessment.

1.5
Ms. Campbell added that it is a good opportunity to introduce ICF consultants that prepared the draft EIR. Ms. Campbell introduced Erin Efner and Jessica Viramontes from ICF.

Erin Efner, ICF Jones & Stokes, explained that the purpose of the alternatives analysis is to reduce significant impacts that were identified during the Draft EIR analysis. Ms. Efner added that as Ms. Carmichael pointed out, decision-makers are, and have the ability to consider these alternatives, but they're certainly not meant to discourage the adoption of the project. Ms. Efner stated that the EIR is meant to be an objective assessment of the project and there are some cases where an alternative is adopted but it's not the place of the EIR to recommend adoption of one alternative over the project.

Chairperson Lew stated that it makes her more comfortable that someone from the public isn't going to come up and say, they want offices there instead of residential, because it has been happening in some places where there is a preference for businesses and jobs rather than more housing. Chairperson Lew added that to her it is more of an exercise that must be completed in the CEQA process.

Ms. Efner noted that in the alternatives chapter, one could see that most of the objectives of the project are not met by these alternatives.

Chairperson Lew referred the executive summary in particular the ROG emissions, and asked what the ROG is, and if the acronym could be listed in the acronyms and abbreviations section of the EIR.

Ms. Carmichael deferred the question to Ms. Efner.

Ms. Efner replied that the ROG are reactive organic gases, and it could be added if not already in the acronyms portion of the EIR. Ms. Efner additionally added that it could be further clarified in the final EIR and in this case, it primarily refers to architectural coatings and some of the emissions that result from the development.

Chairperson Lew referred to page 2-1, paragraph two under section 2.2, there is a sentence that refers to interested citizens who would be responding to this EIR, and believes that when she sees the word citizens it could feel like it is excluding non-US Citizens from participating in the review process. Chairperson Lew asked why the term citizen is used.

Ms. Carmichael replied that it is not intended to exclude anyone. Chairperson Lew asked for the document to be updated to replace citizens with interested members of the public. Chairperson Lew suggested there be a "to" added before "evaluate".

Chairperson Lew asked if there is recycled water available in the area and if the water could be used to water landscaping within the proposed project. Chairperson Lew added that there is recycled water being used to water landscaping at the Patterson Ranch housing development in the Fremont/ Ardenwood area.

Ms. Campbell replied that it would be up to Union Sanitary District (USD) as it is a function of wastewater essentially. Ms. Campbell added that USD is near the Patterson Facility which is why they have what's called purple pipe or recycled water. Ms. Campbell also added that it is something the city is definitely interested in and can revisit conversations with USD.

Chairperson Lew stated that while there is a section on natural gas and electric, there is no mention of solar power. Chairperson Lew asked if the applicant would be installing solar panels as an alternative source for electricity.

Ms. Carmichael replied that they are not currently that far along in the design, but the applicant could possibly address it when speaking.

Ms. Campbell added that current building code requires on townhomes and anything under three stories must be constructed with solar.

Chairperson Lew stated it was too bad that the EIR does not cover these things, as it would be a lot easier to understand that projects are moving toward more solar and less natural gas and other PG&E services.

Ms. Campbell added that what the Commission may not see is that they could probably factor into some of the modeling that's occurring for example, on the GHG analysis.

Chairperson Lew made correction to page 4.1-4, second paragraph to change the reference from San Mateo County to Alameda County. Chairperson Lew suggested to add a footnote on the reference from Celsius to Fahrenheit on Page 4.6-4.

Chairperson Lew made a correction to page 4.6-8, as she believed the word should not be quantity or quality but should be corrected to qualified. Chairperson Lew also added on the same page that, the word mix use should be mixed-use. Chairperson Lew also referred to the footnote and asked why the project would not translate as a priority project even with its close proximity to BART.

Ms. Efner requested to further look into clarifying the reference.

Chairperson Lew asked for an explanation of a streamlined CEQA review process.

1.12

Ms. Carmichael replied that the project did qualify for an exemption from the VMT analysis, the vehicle miles traveled analysis. Ms. Carmichael added that they did not have to go through all the calculations of vehicle miles traveled because the project so close to a high-quality transit corridor. This is an example of a streamlined process that did not have to go into a lot of detail on the topic. Ms. Carmichael added that there are other exemptions for projects that meet certain requirements that can be exempted, but the project did not meet any of those.

Ms. Campbell stated that it could be further looked into and that the City does use a streamlined CEQA review if allowed.

Chairperson Lew stated that the footnote was concerning, and that the statement needed to be corrected.

Chairperson Lew noted the 22 monitoring wells and the wells that will be protected and destroyed. Chairperson Lew asked for explanation of the importance of the wells that will remain onsite and how they will be identified and protected after the project is built. Chairperson Lew asked if would be recorded in a parcel map.

Ms. Campbell replied that the City would coordinate with Alameda County Water District and the Regional Water Quality Control Board and after the project is approved to figure out exactly which wells are staying and which are being removed, and that they are monitored properly consistent with ACWD ordinances.

1.13

Chairperson Lew asked why they would keep them.

Ms. Campbell replied that the wells are for monitoring of the McKesson plume, as there used to be a chemical company on the east side of Seventh Street near the fire station, so there is an on-going groundwater remediation project. Ms. Campbell added that those wells are utilized to determine how that remediation is needed.

Chairperson Lew stated she would be concerned if she had children near the development.

Ms. Campbell replied that the monitoring tools are quite small, and they look like any other kind of infrastructure like a water meter that is covered when not in use.

Chairperson Lew replied that if they are as big as a manhole cover that she would be very afraid.

1.14

Chairperson Lew referenced a section on page 4.9-11 where it references that site development review is required for multifamily developments. Chairperson Lew stated that she wanted ICF to understand that site development reviews are required for all projects and not just multifamily developments, except for minor projects and those that consist of minor modifications to approved projects which would fall under administrative site development review process.

1.15

Chairperson Lew asked for clarification on page 4.10-24 if HVAC units would be installed on rooftops or on the ground and if they would be shared among the residents living in the same building.

Ms. Carmichael referred the question to the applicant but added that often the units are on the roof and are not shared from one unit to another.

Chairperson Lew noted that there are some chapters in the report that still list the project as 964 units and not 974 and suggested that error be corrected.

1.16

Ms. Carmichael replied that the beginning of the EIR and the beginning of each topic section contains a statement that the change in number of units does not change the analysis and that is how the change is being dealt with.

Chairperson Lew suggested it be searched and replaced as it is annoying to see errors. Chairperson Lew noted some contradictions on page 2.12-11 under impact and summary statements for Police services and ask for those discrepancies to be clarified or corrected.

Ms. Carmichael stated that staff would go back and review this as part of preparing the final EIR.

Chairperson Lew referred to Page 4.15-7 and stated that there is a section on electricity, natural gas and telecommunications, and the EIR omitted that Union City has a requirement to underground new and existing utilities.

Ms. Campbell added that it is a requirement in the code.

Chairperson Lew stated that she did not know why it is not included in the EIRs especially when there will be moving of dirt and laying lines that will impact traffic lanes on public streets. Chairperson Lew recommended it be added.

1.17

Chairperson Lew noted that the project will have commercial and residential space and asked how the properties would be managed, if perhaps by an HOA.

Ms. Campbell replied that there will be an HOA for each of the developments and a master HOA for the overall project.

Chairperson Lew clarified if it was for each development or each plan area.

Ms. Campbell replied that some of the developments consist of two planning areas like PA 2 and PA 4. Ms. Campbell added that in that example there would probably be one HOA but suggested the applicant could provide additional feedback.

Chairperson Lew asked if it would be the same with the commercial properties, and if they might be individually owned and managed.

Ms. Campbell replied that she does not believe the applicant is proposing to condo the commercial spaces but would defer to them.

1.18

Chairperson Lew suggested that the location of the affordable units are not consistent with the City's policy in the housing element which states that the City shall intersperse those residential units that are required to sell or rent at below market rates and are included within a housing development within the development and shall be visually indistinguishable from market rate

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units. Chairperson Lew asked if anyone had spoken to the applicant about interspersing below market rate units.

Ms. Campbell replied that the provision is meant to apply mainly for single family homes when it is a for sale project. Ms. Campbell added that the concern would be for not providing equivalent units or not meeting the policy. Ms. Campbell stated that the applicant is moving forward with development of 122 units affordable units on PA3 with services included and the applicability of the provision could be further looked into. Ms. Campbell added that the units in PA 1 will be integrated with the other rental units.

Ms. Campbell added that at the beginning of the process, the council provided feedback that they would prefer to see a rental project because they would serve more people over time versus the for-sale units.

Chairperson Lew suggested there is a tradeoff that the public isn't aware of.

Ms. Campbell stated that with this proposal there is a greater community benefit.

Chairperson Lew suggested she was making sure that the policy is addressed with the applicant. Chairperson Lew stated that she has a concern that the units are set apart from the nicer areas with parks and walkways, the development would be next to a busy street and a fire station.

Ms. Campbell replied that the applicant can speak to the siting considerations that went into where the different product types are.

Chairperson Lew echoed Commissioner Guio's concerns over the lettered streets and suggested that it had to be absolutely removed because it is not consistent with the naming policy.

Chairperson Lew opened the public comment.

Kevin Fryer, Integral Communities introduced himself and Mr. Michael Schrock, project architect and landscaper architect of Urban Arena. Mr. Fryer thanked staff for their hard work as this project has been in progress for several years now. Mr. Fryer noted that not all the details are all figured out as Integral is moving forward with some of the high-level entitlements. Mr. Fryer added that they are not only an applicant but a property owner as they now own the Shelton property that is the majority of the area that is being proposed for development now. Mr. Fryer added that Integral would also be owning an additional property outside of the project area.

Mr. Fryer noted Vice Chairperson Gonzales' question regarding financing. Mr. Fryer stated that it is their expectation that in order to meet the kind of requirements of the ordinance, as well as to meet some of the direction of staff, Council, and the Commission is to provide affordable housing in the first phase of the project. Mr. Fryer added that they would be partnering with a third-party housing developer who would build the 122 unit standalone and manager unit and would be responsible for acquiring the necessary tax credits. Mr. Fryer stated that the USA Properties Fund that they would be partnering on this and is excited with the project and comfortable with the site as it scores very well from a tax financing perspective. Mr. Fryer noted that questions from Commissioner Guio, Commissioner Sakakihara, and Commissioner Mann were answered by staff.

Mr. Fryer noted Commissioner Guio and Chairperson Lew's concerns over the street names and suggested they were just a placeholder.

Mr. Fryer noted staff's response to recycled water and the use of solar panels as they will look into opportunities to meet current building code requirements and meet energy efficiency standards.

Mr. Fryer noted the concerns for the monitoring wells and the assured they would be very small and safe and secured.

Mr. Fryer asked for clarification in regard to concerns raised over the AC units.

Chairperson Lew stated that the EIR notes that units will be installed either on rooftops or on the ground which gives her the impression that it's building by building.

Mr. Fryer replied that in some of the cases this is true; every unit will have control of their own heating and air. Mr. Fryer added that the question will be whether the air conditioning units will be individual like those in townhouses or single-family homes or larger units meant for commercial air conditioning.

Chairperson Lew noted that she was concerned over COVID and shared air circulation.

Mr. Fryer referred the question to Mr. Schrock.

Michael Schrock, Urban Arena replied that it would not be shared air circulation, and everyone would have their own air. Mr. Schrock added that in fact, some of the HEPA filters are now required and the air is cleaner on new construction than it has ever been.

Mr. Fryer stated that Ms. Campbell was correct on her response to having an HOA for each of the communities and a master HOA. Mr. Fryer added that they have not yet arrived at every level of detail yet.

Mr. Fryer stated that the proposal of having a standalone affordable housing facility would allow them to offer higher levels of affordability and allow for services within the building to the residents that would be otherwise more difficult to disperse into the community. Mr. Fryer added that a single development also allows them to utilize tax credit financing to provide deeper levels of affordability that even the ordinance requires. Mr. Fryer stated that retail was most suitable at the intersection of Eighth Street, Ninth Street, and Decoto Road and is seen as an amenity to the project.

Chairperson Lew closed the public comment.

7. ECONOMIC DEVELOPMENT REPORTS: None.

8. COMMISSION MATTERS:

- A.** Follow-up on Planning Commission referrals to the City Council: None.
- B.** Upcoming applications for the Regular Planning Commission meeting for December 3, 2020.

Ms. Campbell notified the Planning Commission of an upcoming Applicant sponsored Zoning Text Amendment to allow veterinary clinics in the CS Zoning District, which is essentially the Alvarado Historic District. Ms. Campbell also notified the Commission about a Modification to an existing Site Development

Review for the former Office Depot building at the Union Landing Shopping Center. Ms. Campbell added that they are proposing to modify conditions to allow for some changes to the sign program.

9. GOOD OF THE ORDER:

Ray Gonzales concerned about the economic health of Union Landing and other retail stores.

Ms. Campbell replied that it is also very important to economic development, and the city has launched a small business assistance grant program for small businesses to help pay back rent and past utilities. Additionally, the County just recently released an opportunity for another grant for small businesses. Ms. Campbell stated that Gloria Ortega, Economic Development manager has been tasked with getting the word out, and there have already been over 100 applications submitted. Ms. Campbell stated that staff has been working with the Union Landing Property Owners District closely monitoring and doing what they can to support them during this time.

Commissioner Gonzales noted that other movie theater chains around the state have filed for bankruptcy and is concerned it doesn't happen in Union City.

Ms. Campbell added that there have been conversations with the Union Landing Property owners to expand the zoning in Union Landing, after seeing the trends of brick and mortar stores in recent years and they will be engaging the commission in the future.

Vice Chairperson Gonzales asked if the temporary outdoor dining that was set up has an impact on parking spaces, and how it should be looked at down the road.

Ms. Campbell recognized that outdoor dining was permitted by Alameda County and worked quickly to allow businesses to get permitted for the outdoor dining. Ms. Campbell added that businesses have already approached the department to make the outdoor dining more permanent and staff is looking into the effects to parking.

Commissioner Mann acknowledged the reelection of Mayor Carol Dutra-Vernaci and Councilmember Gary Singh.

Commissioner Sakakihara asked if the small businesses that received the forgivable loans would also be allowed to receive the grants from the County.

Ms. Campbell replied yes, and they are CARES funding. Ms. Campbell added that the CARES funding the county is using is allocated through the State and does not have as many restrictions and can be used for payroll protection.

Chairperson Lew wish everyone a Happy and safe Thanksgiving.

10. ADJOURNMENT: 9:00 PM

APPROVED:

JO ANN LEW, CHAIRPERSON

ATTEST:

CARMELA CAMPBELL, SECRETARY

3.2 Letter 1

Commenter: Union City Planning Commission Hearing

Date: November 19, 2020

Response 1.1

The commenter requests clarification about how the project has evolved since 2019, including where the additional proposed multi-family units would be constructed and how more units would be constructed while the minimum density would be lowered. The commenter also asks about the timing of the affordable housing construction. As discussed in Section 3.3.3.1, *Existing General Plan and Zoning Designations*, on page 3-11 of the Draft EIR, the existing allowable residential density is a minimum of 30 dwelling units per acre, with an average density of no less than 45 density units per acre. As explained in Section 3.4.10, *Project Approvals*, on page 3-28 of the Draft EIR, the proposed project would require a General Plan amendment to update land use targets for the Station East area to reduce the minimum density from 30 units per acre to 25 units per acre, provided a certain average density is maintained. As shown in Table 3-2 on page 3-17 of the Draft EIR, there would be approximately 62 dwelling units per acre at the project site. Thus, although there would be a decrease in minimum density under the proposed project, there would also be an increase in the allowable average density at the project site, increasing from 45 units per acre to approximately 60 units per acre, which would allow more housing units to be constructed. In response to the portion of the comment regarding the timing of the construction of the affordable housing units, the Union City Municipal Code requires all affordable housing units to be provided in the first construction phase of a project, which is consistent with the timing anticipated for the proposed project.

This comment does not raise specific issues related to the adequacy, accuracy, or completeness of the analysis of physical environmental impacts presented in the Draft EIR. No changes to the Draft EIR are required in response to this comment. This comment will be transmitted to, and may be considered by, the decision-makers as part of their deliberations on the proposed project.

Response 1.2

The commenter asks how the project will accommodate an additional 48 units and what the required income level will be. Over the course of the design process for the project, approximately 25 housing units were added to Planning Area (PA) 3 and some market-rate housing units in PA 1 were designated as affordable housing units. The additional affordable housing units were accommodated within the project by incorporating an additional building level, which did not affect the proposed building's footprint. The income requirements for affordable housing units are still under development.

This comment does not raise specific issues related to the adequacy, accuracy, or completeness of the analysis of physical environmental impacts presented in the Draft EIR. No changes to the Draft EIR are required in response to this comment. This comment will be transmitted to, and may be considered by, the decision-makers as part of their deliberations on the proposed project.

Response 1.3

The commenter asks how many parking spaces by Shorty Garcia Park on 7th Street would be eliminated as a result of the project. Approximately 300 feet of parking, or 13 spaces, on 7th Street would be removed under the project. In response to this comment, the third paragraph in Section 3.4.4.1, *Vehicular*, on page 3-20 of the Draft EIR, will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):

The project would also provide buffered bike lanes on both sides of 7th Street between Decoto Road and Bradford Way within the existing right-of-way by eliminating the on-street parking on one side of the street between K Street and Bradford Way and eliminating the existing on-street parking on both sides of the street between Decoto Road and K Street; however, the project would replace eight parking spaces on 7th Street adjacent to Shorty Garcia Park by widening the street.

Thus, the proposed project would result in a net loss of 5 stalls along the frontage of Shorty Garcia Park.

This comment does not raise specific issues related to the adequacy, accuracy, or completeness of the analysis of physical environmental impacts presented in the Draft EIR. No changes to the Draft EIR, other than those already included in Chapter 4, Corrections and Additions to the Draft EIR, are required in response to this comment. This comment will be transmitted to, and may be considered by, the decision-makers as part of their deliberations on the proposed project.

Response 1.4

The commenter asks about the impetus for the redesign of the proposed project. The proposed project was refined over the last few years in response to the City's input regarding the affordable housing units, public park space, and other design features. The additional affordable housing units were accommodated within the project by incorporating an additional building level within one of the proposed buildings in Planning Area 3, which did not affect that proposed building's footprint, and affordable units were substituted for market-rate units within another proposed building in Planning Area 1. No changes to the Draft EIR are required in response to this comment.

Response 1.5

The commenter inquires if Alternative B, the environmentally superior alternative, can be used to stop the proposed project. As explained in Section 6.5, *Environmentally Superior Alternative*, on page 6-17 of the Draft EIR, the CEQA Guidelines require identification of an environmentally superior alternative (Section 15126.6[e]), which is the alternative that avoids or lessens the significant impacts of the proposed project, even if the alternative would, to some degree, impede attainment of project objectives. If it is determined that the "no project" alternative would be the environmentally superior alternative, then the EIR shall also identify an environmentally superior alternative among the other project alternatives (Section 15126.6[3]).

Alternative A, the No-Project Alternative, would be the environmentally superior alternative because it would result in fewer impacts overall. However, because Alternative A would not fulfill the project objectives, and because CEQA requires it to be included in the EIR, another alternative must be identified as the environmentally superior alternative. Alternative B, the Reduced Intensity Alternative, would reduce the project's impacts to the greatest degree by constructing an office development instead of a residential development, which would result in the greatest decrease in

operational impacts because of the lower trip generation. Therefore, Alternative B would be the environmentally superior alternative, although it would not fulfill any of the identified project objectives. Alternative B, along with the other alternatives as well as the proposed project overall, will be considered for approval by the decision-makers.

This comment does not raise specific issues related to the adequacy, accuracy, or completeness of the analysis of physical environmental impacts presented in the Draft EIR. No changes to the Draft EIR are required in response to this comment. This comment will be transmitted to, and may be considered by, the decision-makers as part of their deliberations on the proposed project.

Response 1.6

The commenter requests that reactive organic gas (ROG) emissions be added to the list of acronyms and abbreviations in the Table of Contents in the Draft EIR. In response to this comment, the acronym will be added to the list starting on page viii of the Draft EIR as follows (new text is underlined):

ROG Emissions—Reactive Organic Gas Emissions

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 1.7

The commenter requests that the language in the Draft EIR that refers to citizens instead refer to people. In response to this comment, the first paragraph in Section 2.2, *Environmental Impact Report Review Process*, on page 2-1 of the Draft EIR, will be revised as follows (new text is underlined and deleted text is shown with ~~strike through~~):

The EIR is intended to enable City decision makers, public agencies, and interested ~~citizens~~ people to evaluate the environmental issues associated with the proposed project.

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 1.8

The commenter requests confirmation that no main lines for recycled water are near the project site. The commenter also requests a discussion regarding the potential use of recycled water on the site and asks if any lines with recycled water are available for landscaping. According to the City, and as discussed in Section 4.15, *Utilities and Service Systems*, on page 4.15-5 of the Draft EIR, there are no main lines for recycled water near the project site. In addition, there are no plans for the use of recycled water at the project site. According to the Alameda County Water District's (ACWD's) 2015–2020 Urban Water Management Plan, recycled water is currently not used in the district's service area to offset the demand for potable water.¹ However, the use of recycled water is included in ACWD's long-term district-wide water supply strategy. No changes to the Draft EIR are required in response to this comment.

¹ Alameda County Water District. 2015. *Urban Water Management Plan, 2015–2020*. Available: <https://www.acwd.org/DocumentCenter/View/1264/ACWDs-2015---2020-UWMP?bidId=>. Accessed: February 4, 2021.

Response 1.9

The commenter asks if solar power would be used. The design of the proposed project is not far enough along at this point in time to determine how much solar power would be included in the project or where it would be installed. Per the California Green Building Standards Code (CALGreen) and Union City Green Building and Landscaping Practices, it is likely that solar power will be incorporated to a certain extent into the design of the proposed project. The use of solar power was conservatively not assumed in the Draft EIR's analysis of the potential environmental impacts of the proposed project. No changes to the Draft EIR are required in response to this comment.

Response 1.10

The commenter requests that the jurisdiction of the Bay Area Air Quality Management District (BAAQMD) be corrected to reference Alameda County instead of San Mateo County. In response to this comment, in Section 4.1, *Air Quality*, on page 4.1-14 of the Draft EIR, the second sentence in the first paragraph will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):

The BAAQMD has local air quality jurisdiction over projects in the SFBAAB, including ~~San Mateo County~~ Alameda County.

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 1.11

The commenter suggests adding a footnote on page 4.6-4 of the Draft EIR with Celsius changed to Fahrenheit. Footnote 8 on page 4.6-4 in Section 4.6, *Greenhouse Gas Emissions*, refers to the Intergovernmental Panel on Climate Change's 2018 *Global Warming of 1.5°C. Contribution of Working Group I, II, and III* (Summary for Policy Makers). The reference to Celsius is in the title of the document; thus, no additional footnote referencing Fahrenheit will be added.

Response 1.12

The commenter requests that footnote 20 in Section 4.6, *Greenhouse Gas Emissions*, on page 4.6-8 of the Draft EIR, be clarified. In response to this comment, in Section 4.6, *Greenhouse Gas Emissions*, on page 4.6-8 of the Draft EIR, footnote 20 will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):

~~The project does not qualify for streamlined CEQA review because it is not a mixed-used and transit priority project.~~ This Draft EIR does not employ the CEQA streamlining option.

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 1.13

The commenter asks what will happen to the 22 monitoring wells on the site. As stated on page 3-25 in Chapter 3, *Project Description*, of the Draft EIR, all of the existing 22 groundwater monitoring wells on the project site would be protected or destroyed in accordance with ACWD requirements. As stated on page 4.7-22 in Section 4.7, *Hazards and Hazardous Materials*, of the Draft EIR, each well in the project area must be in compliance with ACWD Ordinance No. 2010-01 and either protected or properly destroyed and then replaced prior to or during construction activities. If the wells are to remain, a letter so indicating must be sent to the Alameda County Water District (ACWD). If, during

the construction process, the wells are 1) no longer required by any regulatory agency, 2) no longer monitored on a regular basis, or 3) damaged, lost, or jeopardized because of a surface seal, the wells must be destroyed in accordance with ACWD requirements. If it is determined that the construction footprint overlaps with the aforementioned remediation piping or groundwater wells, the project applicant is required to take the measures necessary to relocate or remove said equipment in accordance with ACWD and San Francisco Bay Regional Water Quality Control Board requirements. No changes to the Draft EIR are required in response to this comment.

Response 1.14

The commenter states that site development review is required for all projects, not just multi-family developments, as currently detailed in the first sentence under *Site Development Review* on page 4.9-11 of the Draft EIR. In response to this comment, in Section 4.9, *Land Use and Planning*, on page 4.9-11 of the Draft EIR, the first sentence in the first paragraph will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):

Site development review approval is required for construction of all projects ~~multi-family developments~~.

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 1.15

The commenter asks if the heating, ventilation, and air-conditioning (HVAC) units mentioned under *Stationary Equipment* on page 4.10-24 of the Draft EIR would be shared units. According to the applicant, all proposed housing units would include standalone HVAC unit with micro-particulate filtration; thus, there would be no shared HVAC units. No changes to the Draft EIR are required in response to this comment.

Response 1.16

The commenter notes that some portions of the Draft EIR indicate 964 units would be constructed, whereas other portions of the Draft EIR indicate 974 units would be constructed. The commenter also requests clarification and corrections for the police services analysis in the Draft EIR. In order to be transparent regarding the assumptions used in the analysis, statements have been included explaining that the original analysis was based on 964 units and that the 10 units subsequently added by the applicant would not result in any changes to the conclusions. As stated in footnote 1 in Chapter 1, *Executive Summary*, on page 1-1 of the Draft EIR, and in Chapter 4, *Environmental Impact Analysis*, on page 4-1 of the Draft EIR, the applicant indicated that the residential units associated with proposed project would increase by 10, from 964 to 974 units. Section 4, *Environmental Impact Analysis*, analyzes 964 residential units, despite Chapter 3, *Project Description*, reflecting the current proposal for 974 residential units. The 10 additional residential units would not result in any changes to the environmental analysis, including impact conclusions and mitigation measures, primarily because the overall duration of construction, construction schedule, construction intensity, and building footprint all would remain the same. In addition, assumptions used in the analysis of operational impacts are conservative enough to account for the 10 additional units. Specifically, with respect to impacts resulting from population growth, such as impacts related to population and housing, public services, or utilities, the 10 additional units and associated growth are within General Plan and Association of Bay Area Governments projections. The additional 26 residents conservatively expected to result from the addition of 10 units would not change the severity of the impact conclusions for these topics, many

of which are not directly contingent upon population growth (i.e., 2,445 additional residents and 75 additional employees) and instead would be mitigated through the payment of various developer impact fees. With respect to water supply, the ACWD has confirmed that the increase in the number of units would not result in any changes to the conclusions in the Water Supply Assessment prepared for the project (Appendix 4.15-1). Similarly, the vehicle trip generation analysis for the project is conservative enough to cover the 10 additional units because it assumes 1,150 multi-family dwelling units. Thus, the analysis presented throughout the Draft EIR adequately accounts for the potential environmental impacts of the 974 new residential units. Stating that the original analysis was based on 964 units and explaining why the additional 10 units would not change the conclusions is a more accurate representation of the analysis. Therefore, the number of units does not need to be changed in the Draft EIR.

Regarding the need for new police facilities as a result of the increased population generated by the project, a new police station would not be required as a result of the proposed project, which was accounted for in the General Plan's projections according to the General Plan EIR. No changes to the Draft EIR are required in response to this comment.

Response 1.17

The commenter requests that the requirement for undergrounding all existing overhead facilities be mentioned in Section 4.15, *Utilities and Service Systems*, on page 4.15-7 of the Draft EIR. General Policy 4 in the DIPSA Specific Plan, which states that all utilities serving the DIPSA should be installed underground (see page 4.15-12 of the Draft EIR). A discussion of the potential environmental impacts from installing or expanding utility facilities is included on page 4.15-17 of the Draft EIR. As discussed therein, impacts related to the construction of new utility facilities for the proposed project are addressed as part of the analysis of construction impacts for the proposed project as a whole. The installation or expansion of utility facilities for the project would not result in additional significant impacts that were not otherwise disclosed elsewhere in the Draft EIR. No changes to the Draft EIR are required in response to this comment.

Response 1.18

The commenter suggests that the location for the proposed affordable housing units is not consistent with the City's policy in the Union City Housing Element to intersperse affordable units with market rate units and to provide access to all the site amenities. The rental units and affordable housing would be located in the northeastern portion of the project site, as stated on page 3-17 of the Draft EIR. PA 1 would include 24 affordable housing units, and PA 3 would include 123 affordable housing units. The affordable housing units in PA 1 would be integrated with other rental units. The stand-alone affordable housing units in PA 3 would allow higher levels of affordability to be offered within the project and enable specialized services to be offered to residents within the building, which would be more difficult to offer if the affordable housing units were to be distributed throughout the project site. As stated on page 4.9-16 of the Draft EIR, the project would comply with the Affordable Housing Ordinance through alternative means, as allowed by Section 18.33.060E of the Municipal Code, by providing all rental affordable units in lieu of a mix of rental and ownership affordable units. All project residents would have access to the linear paseo (Paseo C) that would extend east-west through the southern portion of the project site as well as the tot lot, outdoor amphitheater, and three community parks located throughout the project site. In addition, all project residents would have access to the urban plazas located near the proposed commercial uses in PA 1.

This comment does not raise specific issues related to the adequacy, accuracy, or completeness of the analysis of physical environmental impacts presented in the Draft EIR. No changes to the Draft EIR are required in response to this comment. This comment will be transmitted to, and may be considered by, the decision-makers as part of their deliberations on the proposed project.



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December 17, 2020

VIA ELECTRONIC MAIL

Carmela Campbell (CarmelaC@unioncity.org)
Economic and Community Development Director
City of Union City
34009 Alvarado-Niles Road
Union City, CA 94587

Dear Ms. Campbell:

Subject: Notice of Availability of a Draft Environmental Impact Report for the Station East Residential/Mixed Use Project

Alameda County Water District (ACWD) has reviewed the Draft Environmental Impact Report (EIR) for the Station East Residential/Mixed Use Project (“Project”) and would appreciate your consideration of the following comments:

1. Description of Project:

- 2.1
- a. The Project is identified as part of the City of Union City Station District Specific Plan. It is ACWD’s understanding that separate environmental review will be completed for the Station District Specific Plan. Cumulative impacts from the Project, the Quarry Lakes Parkway Project, and the Station District Specific Plan should be adequately addressed in the Station District Specific Plan CEQA document as appropriate.
- 2.2
- b. Section 3.4.9.1 (page 3-27) of the Draft EIR indicates that construction activities associated with the Project are not expected to involve dewatering. However, in the event dewatering is required, ACWD drilling permits are required under ACWD Ordinance No. 2010-01. Also, see ACWD’s following comments under Hazards and Hazardous Materials.
- c. *Drilling Permit Requirement:* ACWD appreciates the mention of requiring drilling permits from ACWD for any subsurface drilling activities in Section 3.4.7.3

2.2
con't

Wastewater (page 3-24); however, ACWD requests that the permitting requirement language be provided in Section 3.4.11 Ministerial Actions (page 3-28) of the EIR.

2. Groundwater Protection: ACWD requests that the following issues related to the protection of groundwater be addressed by the EIR:

- a. *Section 4.7 Hazards and Hazardous Materials:*

2.3

- i. Section 4.7.1.2 Regulatory Setting of the EIR should acknowledge that as part of ACWD's Groundwater Protection Program, ACWD entered into Cooperative Agreements with both the San Francisco Bay California Regional Water Quality Control Board (Regional Board) and the City of Union City, which allows ACWD to provide technical oversight for the investigation and remediation of Leaking Underground Fuel Tank (LUFT) sites and sites where the pollution is attributed to spills or leaks from structures other than underground fuel tanks now referred to as Site Cleanup Program sites or SCP (formerly known as Spills, Leaks, Investigation, and Cleanup sites or SLIC sites).

2.4

- ii. Section 4.7.2.4 Impacts and Mitigation Measures: Page 4.7-23 of the Draft EIR states, "project construction is not expected to involve dewatering. As such, potential impacts associated with exposure to contaminated groundwater are not expected." However, on page 4.8-15, the Draft EIR states, "In the event that groundwater is encountered during construction, dewatering would be conducted on an as-needed basis during the construction phase." As a result, the EIR should address how to manage potentially contaminated groundwater if dewatering should occur. This discussion should include protocols for handling and disposing of potentially contaminated groundwater as well as potential plume migration.

- b. *Section 4.8 Hydrology and Water Quality:*

2.5

- i. Section 4.8.1.1 Environmental Setting: Page 4.8-2 of the Draft EIR states that the Niles Cone "is managed by [ACWD] with other regional partners." For over 100 years, ACWD has managed the groundwater of the Niles Cone Groundwater Basin (Niles Cone Subbasin 2-09.01 or Niles Cone) through comprehensive programs that protect and improve water supplies for all groundwater users. ACWD is identified within the Sustainable Groundwater Management Act (SGMA) as an agency created by statute to manage groundwater and deemed to be the exclusive local agency within its statutory boundaries to comply with SGMA. ACWD requests that this additional information be provided in the EIR.

2.6

- ii. Page 4.8-2 of the Draft EIR states that ACWD “diverts impounded water from behind three dams in the Alameda Creek flood control channel to groundwater recharge ponds in the Quarry Lakes Regional Recreation Area in Fremont.” ACWD has only two dams in the Alameda Creek flood control channel (RD1 and RD3); please revise the text accordingly.

2.7

- iii. Page 4.8-3 of the Draft EIR states that ACWD “has begun treating brackish groundwater to allow previously unused groundwater to be used as potable water.” This statement implies that ACWD has only recently begun treating brackish groundwater; please revise the text to clarify that ACWD began treating brackish groundwater in 2003.

2.8

- iv. Section 4.8.2.4 Impacts and Mitigation Measures: ACWD appreciates the planned biotreatment of stormwater in bioretention areas and similar features to impede runoff from rapidly infiltrating into the subsurface, thereby passing through soils which have the capacity to remove pollutants and protect the groundwater supply. However, as previously discussed, the Project site has known groundwater contamination and specific stormwater devices could present an unacceptable long-term risk to beneficial uses of groundwater. For example, stormwater systems designed to keep the water onsite could result in movement of the contaminant plume. Therefore, ACWD requests that the EIR include mitigation measures requiring Project proponents to coordinate any drainage design and stormwater treatment measure implementation with ACWD prior to implementation and City approval in order to protect the groundwater basin.

3. Utilities (Sections 4.15.1 – 4.15.22):

2.9

- a. As discussed above, the Project site has a history of contamination. The ability to install a public water system within the Project area would be conditioned upon confirmation that the soil, groundwater, and/or soil gas vapors do not pose a risk to the health and safety of Project site workers during either installation or long-term routine operation and maintenance of the public water system.

The public water system extension and all appurtenances must be constructed in "clean corridors," which are defined by use of clean soil as backfill for all trenches excavated for any part of the public water system. Clean corridors would be assured by either: 1) further sampling of native soil, groundwater, and/or soil vapors along the proposed public water system alignments; or 2) use of clean imported fill as backfill. The use of upgraded materials (including, but not limited to, all steel pipelines with upgraded gaskets) may be required.

2.10

- b. On page 4.15-1, the Draft EIR states “No comments regarding utilities and service systems were received in response to the Notice of Preparation (NOP).” This statement

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is not correct. ACWD provided comments related to utilities and service systems in our letter dated April 9, 2020. This statement should be deleted or revised in the EIR to reflect that ACWD submitted comments on the NOP.

- c. Page 4.15-3 of the Draft EIR indicates that ACWD's Mission San Jose Water Treatment Plant (MSJWTP) has a sustainable production rate of 3.2 million gallons per day (mgd). The MSJWTP has been decommissioned by ACWD for the foreseeable future. The EIR should reflect this status.
- d. During the COVID-19 pandemic, and while shelter in place orders are in effect, ACWD will not support field construction-related activities nor extend water services to the Project site unless the City of Union City determines that the Project and such work are in compliance with the applicable orders.

4. ACWD Contacts: The following ACWD contacts are provided so that the City of Union City can coordinate with ACWD as needed during the CEQA process:

- Michelle Myers, Groundwater Resources Manager at (510) 668-4454, or by email at michelle.myers@acwd.com, for coordination regarding ACWD's groundwater resources.
- Juni Rotter, Development Services Manager, at (510) 668-4472, or by email at juniet.rotter@acwd.com, for coordination regarding public water systems and water services.

Again, thank you for the opportunity to comment on the Draft Environmental Impact Report for the Station East Residential/Mixed Use Project.

Sincerely,



Laura J. Hidas
Manager of Water Resources

al/cs

By E-mail

cc: Ed Stevenson, ACWD

3.3 Letter 2

Commenter: Laura J. Hidas, Manager of Water Resources, Alameda County Water District

Date: December 17, 2020

Response 2.1

The commenter states that cumulative impacts from the proposed project, the Quarry Lakes Parkway Project, and the Station District Specific Plan should be adequately addressed in the Station District Specific Plan CEQA documentation, as appropriate. Because this comment is about the Station District Specific Plan and not about the Station East Residential/Mixed-Use Project, under CEQA, it does not require a further response concerning the Draft EIR for the proposed project. Nonetheless, a discussion regarding the cumulative impact analysis in the Draft EIR for the proposed project is provided below.

As discussed in Chapter 4, *Environmental Impact Analysis*, on page 4-5 of the Draft EIR, the City of Union City 2040 General Plan (General Plan) was adopted on December 10, 2019, by the Union City Council. The General Plan, in part, contains the goals, policies, and implementation programs for a variety of issues, including economic development, health and quality of life, land use, community design, housing, mobility, safety, public services and facilities, and resource conservation. The General Plan also provides for long-term growth within the City, as allowed by General Plan designations and requirements.

Generally, the cumulative scenario used in Draft EIR analysis is buildout of the General Plan, which accounts for anticipated projects like the Quarry Lakes Parkway Project and the Station District Specific Plan. As explained in Chapter 1, *Executive Summary*, on page 1-1 of the Draft EIR, last paragraph, the City is currently in the process of updating the Station District Specific Plan. The CEQA documentation prepared for the Station District Specific Plan will include a cumulative impacts analysis with past, present, and reasonably foreseeable future projects, which would include the proposed project and the Quarry Lakes Parkway Project.

Response 2.2

The commenter requests that a drilling permit be added to the list of ministerial actions in Chapter 3, *Project Description*, in case dewatering is needed and ACWD drilling permits are required. In response to this comment, the list of ministerial actions in Section 3.4.11, *Ministerial Actions*, on page 3-28 of the Draft EIR will be revised as follows (new text is underlined):

- Drilling permit (in the event that dewatering is required during project construction)

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 2.3

The commenter requests that the Draft EIR acknowledge, as part of ACWD's Groundwater Protection Program, that ACWD has entered into Cooperative Agreements with both the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the City. In response to this comment, Section 4.7.1.2, *Regulatory Setting*, of the Draft EIR will be revised as follows (new text is underlined):

Alameda County Water District's Groundwater Protection Program

The Alameda County Water District's Groundwater Protection Program is designed to protect and preserve the community's drinking water resources. As part of the Groundwater Protection Program, ACWD has entered into Cooperative Agreements with both the San Francisco Bay Regional Water Quality Control Board and the City of Union City. These agreements allow ACWD to provide technical oversight for the investigation and remediation of Leaking Underground Fuel Tank (LUFT) sites and sites where the pollution is attributed to spills or leaks from structures other than underground fuel tanks.

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 2.4

The commenter requests that the Draft EIR discuss how potentially contaminated groundwater would be managed if dewatering should occur during project activities. The Site Management Plan (SMP) described under Mitigation Measure HAZ-2a in Section 4.7.2.4, *Impacts and Mitigation Measures*, on page 4.7-21 of the Draft EIR, will include protocols for the proper management and disposition of contaminated groundwater in the event construction dewatering is needed during site redevelopment. In response to this comment, the first paragraph of Mitigation Measure HAZ-2a on page 4.7-21 of the Draft EIR will be revised as follows (new text is underlined):²

Mitigation Measure HAZ-2a: Site Management Plan

Prior to issuance of a grading permit, the project sponsor shall retain the services of a qualified environmental engineering firm to prepare and implement, during site preparation and grading activities, a Site Management Plan (SMP). The SMP shall be designed to protect human health and the environment and include protocols, measures, and techniques for the proper handling, management, and disposition of affected soils and groundwater associated with construction dewatering (if any) found on the site and any areas of off-site work during site preparation and grading activities. The SMP shall also be designed to protect workers and off-site receptors during site activities and ensure the proper characterization, management, and/or disposal of contaminated environmental media that is above applicable Environmental Screening Levels (ESLs). The SMP shall be prepared by a commercial environmental engineering firm with demonstrated expertise and experience in the preparation of SMPs and be stamped by an appropriately licensed professional. The SMP shall be submitted for City and outside agency review in conformance with DIPSA Specific Plan, Toxic and Hazardous Substances Policy 5, and implemented throughout all ground-disturbing work.

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 2.5

The commenter requests that additional information regarding the ACWD and the Sustainable Groundwater Management Act be provided in the groundwater discussion in Section 4.8, *Hydrology and Water Quality*, of the Draft EIR. In response to this comment, the last paragraph on page 4.8-2 of the Draft EIR will be revised as follows (new text is underlined):³

² Revisions to Mitigation Measure HAZ-2a are also included in Responses 2.8, 2.9, 4.1 and 4.3. Refer to Chapter 4, *Corrections and Additions to the Draft EIR*, for the revised version of this mitigation measure that incorporates all changes from these responses.

³ Revisions to this groundwater-related text are also included in Response 2.6.

Groundwater

The project site is located in the Santa Clara Valley – Niles Cone Groundwater Subbasin (Niles Cone Subbasin 2-09.01 or Niles Cone), part of the larger Santa Clara Valley Groundwater Basin, which supplies water to and is managed by the Alameda County Water District (ACWD) with other regional partners. For over 100 years, ACWD has managed the groundwater of the Niles Cone Groundwater Basin through comprehensive programs that protect and improve water supplies for all groundwater users. ACWD is identified within the Sustainable Groundwater Management Act (SGMA) as an agency created by statute to manage groundwater and deemed to be the exclusive local agency within its statutory boundaries to comply with SGMA. Beneficial uses for the groundwater basin include municipal and domestic water supply, industrial process and service water supply, and agricultural water supply. The Santa Clara Valley Groundwater Basin has a history of groundwater overdraft. The Alameda County Water District diverts impounded water from behind three dams in the Alameda Creek flood control channel to groundwater recharge ponds in the Quarry Lakes Regional Recreation Area in Fremont. This water percolates into aquifers and supplies up to 50 percent of the water used in Fremont, Newark, and Union City. Seawater intrusion is common in the basin and has moved landward and into deeper aquifers since first recorded in the 1920s.

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 2.6

The commenter requests that the groundwater discussion in Section 4.8, *Hydrology and Water Quality*, of the Draft EIR be revised to clarify the number of dams in the Alameda Creek flood control channel. In response to this comment, the last paragraph on page 4.8-2 of the Draft EIR will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):⁴

Groundwater

The project site is located in the Santa Clara Valley – Niles Cone Groundwater Subbasin, part of the larger Santa Clara Valley Groundwater Basin, which supplies water to and is managed by the Alameda County Water District (ACWD) with other regional partners. Beneficial uses for the groundwater basin include municipal and domestic water supply, industrial process and service water supply, and agricultural water supply. The Santa Clara Valley Groundwater Basin has a history of groundwater overdraft. The Alameda County Water District diverts impounded water from behind ~~three~~ two dams in the Alameda Creek flood control channel to groundwater recharge ponds in the Quarry Lakes Regional Recreation Area in Fremont. This water percolates into aquifers and supplies up to 50 percent of the water used in Fremont, Newark, and Union City. Seawater intrusion is common in the basin and has moved landward and into deeper aquifers since first recorded in the 1920s.

A different portion of this same paragraph was revised in Response 2.5. This revision does not change the analysis or conclusions provided in the Draft EIR.

⁴ Revisions to this groundwater-related text are also included in Response 2.5.

Response 2.7

The commenter requests that the groundwater discussion in Section 4.8, *Hydrology and Water Quality*, of the Draft EIR be revised to clarify when ACWD first treated brackish groundwater. In response to this comment, the first paragraph on page 4.8-3 of the Draft EIR will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):

The Alameda County Water District ~~has begun~~ began treating brackish groundwater in 2003 to allow previously unused groundwater to be used as potable water.

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 2.8

The commenter notes that the project site has known groundwater contamination and that specific stormwater devices could present an unacceptable long-term risk to beneficial uses of groundwater, including movement of the contaminated plume. In response to this comment, the last paragraph on page 4.8-14 in Section 4.8, *Hydrology and Water Quality*, of the Draft EIR will be revised as follows (new text is underlined):

On-site LID treatment would be optimized throughout the project site. Multiple drainage management areas would be created to treat runoff from proposed public streets within small bio-retention areas. The at-grade surface parking would be routed to LID treatment areas within the public right of way. The proposed community parks and paseo design are not yet complete; however, treatment methods, such as self-treating areas, self-retaining areas and reduced impervious surfaces, would be implemented to the extent feasible once park design and features are finalized. Considering the potential for contaminated groundwater, appropriate stormwater management practices and designs would be evaluated by ACWD to determine the feasibility of the treatment method and the underlying site-specific conditions prior to implementation and approvals. The project also proposes to construct stormwater treatment facilities for the north side of existing Bradford Way. The project has incorporated stormwater treatment to the maximum extent practicable. Preliminary stormwater calculations indicate 55.6 percent of the site would be treated by LID treatment measures and 44.4 percent by non-LID treatment devices, such as certified media filters. The site would treat approximately 0.6 percent more stormwater through bio-retention areas than required (per the applicable LID reduction credits).

In addition, in response to this comment, the text of Mitigation Measure HAZ-2a on page 4.7-21 in Section 4.7, *Hazards and Hazardous Materials*, of the Draft EIR will be clarified as follows (new text is underlined and deleted text is shown with ~~striketrough~~):⁵

Mitigation Measure HAZ-2a: Site Management Plan

Prior to issuance of a grading permit, the project sponsor shall retain the services of a qualified environmental engineering firm to prepare and implement, during site preparation and grading activities, a Site Management Plan (SMP). The SMP shall be designed to protect human health and the environment and include protocols, measures, and techniques for the proper handling,

⁵ Revisions to Mitigation Measure HAZ-2a are also included in Responses 2.4, 2.9, 4.1, and 4.3. Refer to Chapter 4, *Corrections and Additions to the Draft EIR*, for the revised version of this mitigation measure that incorporates all changes from these responses.

management, and disposition of affected soils found on the site and any areas of off-site work during site preparation and grading activities. The SMP shall also be designed to protect workers and off-site receptors during site activities and ensure the proper characterization, management, and/or disposal of contaminated environmental media that is above applicable Environmental Screening Levels (ESLs). The SMP shall be prepared by a commercial environmental engineering firm with demonstrated expertise and experience in the preparation of SMPs and be stamped by an appropriately licensed professional. The SMP shall be submitted for City and outside agency review in conformance with DIPSA Specific Plan, Toxic and Hazardous Substances Policy 5, and implemented throughout all ground-disturbing work.

The SMP shall establish protocols and measures for addressing the discovery of presently unknown environmental conditions or subsurface structures such as USTs or sumps. If the environmental engineering firm subsequently identifies the need for further sampling, the project sponsor shall implement this and any other requirements identified in the SMP. The project sponsor shall enter into a voluntary agreement with the San Francisco Bay Regional Water Quality Control Board (RWQCB) for review and approval of the SMP. As lead agency for the site cleanup, the RWQCB will also have oversight authority pertaining to implementation of the SMP. If directed by the RWQCB, additional site investigation and characterization may be required prior to construction to ensure that hazardous materials in the soil, soil vapor, and/or groundwater do not exceed applicable regulatory thresholds. If additional site investigation and characterization is required prior to construction, the project sponsor shall implement said studies (and their respective recommendations, if necessary) prior to construction. The RWQCB will also consult and coordinate with the ACWD on the scope of the SMP. The project sponsor shall provide a copy of the SMP to the ACWD at the same time the SMP is submitted to the RWQCB for review and comment. As part of its review of the SMP, the ACWD shall also review the design of long-term drainage and stormwater treatment plans. The project sponsor shall incorporate all recommendations and requirements from the ACWD into the SMP and drainage/stormwater treatment plans as appropriate. As the oversight agency, the RWQCB shall provide the project sponsor with comments on the SMP. Prior to issuance of the grading permit, the project sponsor shall provide the City with a copy of the approved SMP and implement the SMP during site preparation and grading under the approving agency's oversight at the project sponsor's cost.

These revisions do not change the analysis or conclusions provided in the Draft EIR.

Response 2.9

The commenter states that the public water system extension and all appurtenances must be constructed in "clean corridors." Clean corridors would be evaluated by either 1) sampling the native soil, groundwater, and/or soil vapors along the proposed public water system alignments or 2) using clean imported fill as backfill.

As noted in Mitigation Measure HAZ-2a in Section 4.7.2.4, *Impacts and Mitigation Measures*, on page 4.7-21 of the Draft EIR, prior to the earthwork and grading phase of the project, the project sponsor would engage a qualified contractor to remove soil that is known to be affected by hazardous substances (i.e., with levels exceeding the thresholds approved for the project). In response to this comment, the second paragraph of Mitigation Measure HAZ-2a on page 4.7-21 in Section 4.7,

Hazards and Hazardous Materials, of the Draft EIR will be revised as follows (new text is underlined):⁶

The SMP shall establish protocols and measures for addressing the discovery of presently unknown environmental conditions or subsurface structures such as USTs or sumps. At a minimum, there shall be protocols for the sampling and testing of soil unearthed during the construction of new or replacement of existing water mains off-site. If the environmental engineering firm subsequently identifies the need for further sampling, the project sponsor shall implement this and any other requirements identified in the SMP. The project sponsor shall enter into a voluntary agreement with the San Francisco Bay Regional Water Quality Control Board (RWQCB) for review and approval of the SMP. As lead agency for the site cleanup, the RWQCB will also have oversight authority pertaining to implementation of the SMP. If directed by the RWQCB, additional site investigation and characterization may be required prior to construction to ensure that hazardous materials in the soil, soil vapor, and/or groundwater do not exceed applicable regulatory thresholds. If additional site investigation and characterization is required prior to construction, the project sponsor shall implement said studies (and their respective recommendations, if necessary) prior to construction. The RWQCB will also consult and coordinate with the ACWD on the scope of the SMP. The project sponsor shall provide a copy of the SMP to the ACWD at the same time the SMP is submitted to the RWQCB for review and comment. As the oversight agency, the RWQCB shall provide the project sponsor with comments on the SMP. Prior to issuance of the grading permit, the project sponsor shall provide the City with a copy of the approved SMP and implement the SMP during site preparation and grading under the approving agency's oversight at the project sponsor's cost.

This clarification does not change the analysis or conclusions provided in the Draft EIR.

The sponsor has requested oversight from the Department of Toxic Substances Control (DTSC) as well as DTSC approval of a remedial plan that will set forth procedures for soil removal and other remediation and/or mitigation for the project site. DTSC's oversight will be provided through the state's Voluntary Oversight Program and/or the California Land Reuse and Revitalization Act (CLRRRA). As discussed in Response 3.1, Mitigation Measure HAZ-2b: Engineering Controls on the Project Site, will be revised to clarify the requirements of the remedial plan and DTSC's oversight role, which include confirmation sampling prior to commencement of project construction activities.

Implementation of Mitigation Measure HAZ-2a and Mitigation Measure HAZ-2b would provide the sampling and remediation mechanisms necessary to ensure that the site will be properly characterized and remediated.

⁶ Revisions to Mitigation Measure HAZ-2a are also included in Responses 2.4, 2.8, 4.1, and 4.3. Refer to Chapter 4, *Corrections and Additions to the Draft EIR*, for the revised version of this mitigation measure that incorporates all changes from these responses.

Response 2.10

The commenter states that the ACWD provided comments on the Notice of Preparation (NOP) and that Section 4.15, *Utilities and Service Systems*, on page 4.15-1 of the Draft EIR, second paragraph, needs to be revised. In response to this comment, the second paragraph on page 4.15-1 in Section 4.15, *Utilities and Service Systems*, of the Draft EIR will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):

~~No comments regarding utilities and service systems were received in response to the Notice of Preparation (NOP). In response to the Notice of Preparation (NOP), comments were received that identified concerns related to the water supply, groundwater facilities, water efficiency measures, and the removal or modification of utility and service systems. The comments are addressed in the environmental analysis discussion in this section.~~

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 2.11

The commenter states that the Mission San Jose Water Treatment Plant is decommissioned for the foreseeable future. In response to this comment, the first paragraph and first bullet point on page 4.15-3 in Section 4.15, *Utilities and Service Systems*, of the Draft EIR will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):

ACWD operates ~~two~~ one surface water treatment plants that treats SWP water and local surface water from Del Valle Reservoir. In addition, the NDF treats brackish groundwater to remove salts and other impurities; the Blending Facility blends San Francisco Regional Water System water with local fresh groundwater; and a Regional Water System Direct Takeoff received direct supplies of San Francisco Regional Water System water. Details of the facilities operated by the ACWD are as follows:

- ~~• **Mission San Jose Water Treatment Plant (MSJWTP):** The facility uses membrane ultra-filtration technology for treatment of surface water from the South Bay Aqueduct. The MSJWTP is located near I-680 on Vargas Road. The sustainable production rate at MSJWTP is 3.2 mgd.~~

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 2.12

The commenter states that, because of the COVID-19 pandemic and shelter-in place-orders, ACWD will not support field construction-related activities or extend water service to the project site unless the City determines that the project and associated activities are in compliance with applicable orders. The City and project applicant will ensure that the project and associated activities are in compliance with all applicable orders in order to extend water service to the project site.

December 18, 2020

VIA FEDERAL EXPRESS AND E-MAIL

Carmela Campbell, AICP
Economic and Community Development Director
City of Union City
34009 Alvarado-Niles Road
Union City, CA 94587

Email: StationDistrict@unioncity.org

Re: EIR Comments: Station East Residential/Mixed Use Project

Dear Ms. Campbell:

I am writing on behalf of McKesson Corporation (“McKesson”) to provide comments on the Draft Environmental Impact Report (“Draft EIR”) for the Station East Residential/Mixed Use Project.

3.1 The Draft EIR fails to adequately describe or address the environmental impacts associated with construction of residences and commercial buildings on the portion of the project site that is above soil vapor and groundwater contamination. “[W]hen a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must evaluate the potential impact of such hazards on future residents or users...” *California Building Industry Assn. v. Bay Area Air Quality Mgmt. Dist.*, 62 Cal. 4th 369, 377 (2015). “Thus, ... simply attracting residents or users to a site containing an environmental hazard or risk is not an impact that must be analyzed, but project-induced changes that worsen an existing hazard or risk are. For example, if a project were to disturb contaminated soil and disperse the contamination, that change to existing environmental conditions would be a project impact that must be evaluated as such under CEQA. If the contaminated soil on the site were left undisturbed, however, that would simply be an existing environmental condition that need not be examined as an impact of the project.” *Practice Under the California Environmental Quality Act*, §13.5 (Cal CEB 2d ed).

3.2 As described in the Draft EIR, there are several sites in Union City that have contributed to contamination of groundwater with volatile organic chemicals. One of those sites was formerly owned and operated by McKesson Corporation. McKesson operated a chemical-

handling and repackaging facility at 33950 Seventh Street in Union City (“Site”) from 1971 to 1986. In the early 1980s, chlorinated hydrocarbons were detected in soil and groundwater beneath the Site. The principal chemicals detected were the volatile organic compounds (VOCs) trichloroethene (TCE), tetrachloroethene (PCE), 1,1,1-trichloroethane (1,1,1-TCA) and 1,1-dichloroethylene (1,1-DCE).

Although McKesson has conducted a decades-long environmental investigation and remediation program to address contamination from the Site, VOCs remain in groundwater and soil vapor at concentrations that may affect the proposed project. McKesson implemented several interim remedial measures (“IRMs”) at the Site, including soil excavation, soil vapor extraction, removal of above-ground and underground storage tanks, groundwater pump-and-treat, and *in situ* oxidation. A remedial investigation was completed for the Site in August 1989. Characterization activities included a soil gas survey, the installation of soil borings and monitoring wells, and analysis of soil and groundwater samples. Fifty-eight monitoring wells were installed to assess the distribution of VOCs in groundwater.

McKesson also performed a feasibility study that evaluated eight possible alternatives for further remediation of contaminated groundwater in the vicinity of the Site. McKesson submitted a remedial action plan (“RAP”) in 1989, a RAP addendum on February 26, 1999, and a revised RAP addendum on July 2, 1999. The RAP summarized the remedial investigation, evaluated the IRMs and cleanup alternatives, and proposed groundwater pump-and-treat as a final remedy. The Water Board approved the RAP in Order No. 99-071.

Since 1991, the pump-and-treat system has removed approximately 1,360 million gallons of groundwater and removed an estimated 8,190 pounds of VOCs. Maximum concentrations of VOCs at the Site have dropped from 87,300 µg/l in 1983 to 119 µg/l in 2020. However, VOCs remain in groundwater at and downgradient of the Site at concentrations above drinking water standards.

VOCs are also present in soil vapor at concentrations that exceed residential and commercial screening levels published by the Regional Water Quality Control Board. The project owner’s consultant, RPS Group, Inc., conducted a soil and soil vapor investigation in the Shelton property portion of the project area in 2019. A copy of the text and figures from RPS Group’s report entitled *Union City Phase II Investigation Report*, dated October 2019, are attached to this letter as **Exhibit A**. RPS’s investigation was designed “to assess potential shallow soil impacts related to historic agricultural site usage, as well as to determine the potential soil vapor intrusion risk from volatile organic compounds (VOCs) on future development of the Site.” RPS Report, p. 5. RPS detected toxaphene, a pesticide, in shallow soil; benzene in soil vapor in the northern portion of the project area; and PCE, TCE and 1,1-DCE in soil vapor in the northeastern portion of the project area. (Toxaphene and benzene have not been associated with the McKesson Site. We nevertheless address benzene below because it is subject

3.4
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to essentially the same analysis as PCE, TCE and 1,1-DCE, which have been associated with the McKesson Site and other sites.)

When buildings are placed over areas where VOCs are present in groundwater and soil gas, vapor intrusion may result. Vapor intrusion is the movement of VOCs from groundwater and/or soil vapor into indoor air. The Regional Water Quality Control Board has established Environmental Screening Levels that may be used to assess potential risks from vapor intrusion. A concentration below the ESL indicates that there is no potential unacceptable risk. A concentration above an ESL does not necessarily indicate that an unacceptable risk is present, but indicates a need for further evaluation and assessment. For benzene, PCE, TCE, and 1,1-DCE, the Tier 1 ESLs (which apply to residential development) for shallow soil gas are:

Benzene:	3.2 micrograms per cubic meter of air ("µg/m ³ ")
PCE:	15 µg/m ³
TCE:	16 µg/m ³
1,1-DCE:	2400 µg/m ³

3.5

RPS detected benzene in shallow soil gas at concentrations exceeding the ESL in 10 samples, ranging from 4.3 to 20 µg/m³. PCE was detected at concentrations exceeding the ESL of 15 µg/m³ in 27 samples at concentrations ranging from 33 µg/m³ to 28,000 µg/m³. TCE was detected at concentrations exceeding the ESL of 16 µg/m³ in 28 samples at concentrations ranging from 35 µg/m³ to 9,100 µg/m³. 1,1-DCE was detected at concentrations exceeding the ESL of 2,400 µg/m³ in three samples at concentrations ranging from 2,500 µg/m³ to 9,000 µg/m³. The RPS report concludes:

"Soil vapor sampling indicates PCE and its daughter products, TCE and 1,1-DCE, are present in concentrations exceeding the residential ESLs for soil vapor intrusion in portions of parcels Shelton C and Shelton A West Additionally, benzene was detected in concentrations exceeding the residential ESL for soil vapor along the northern edge of the Site, across an approximate 3.3-acre area."

RPS Report, p. 11.

It is plain from the RPS report that the project may exacerbate the existing risks in the project area. First, the project involves the demolition of buildings and parking lots, removal of trees, excavation (to 13.5 feet below ground surface), and grading. All of these actions—disturbing 26.5 acres—will stir up and release vapors that are currently trapped in the subsurface and exacerbate the risk of vapor intrusion, increasing the amount of vapor that will migrate upward, threatening the indoor air of the residences and commercial structures the project

3.5
con't

developer plans to build. Second, even if the project did not involve disturbing the subsurface, the placement of new buildings in areas where VOCs are present in groundwater and soil vapor will have the effect of trapping inside the newly constructed structures VOC vapors that are currently uncontained and that escape to the atmosphere. The fact that PCE and TCE concentrations in shallow soil gas exceed ESLs by more than two orders of magnitude indicates a potential risk. Therefore, the Draft EIR should address this risk. “[W]hen a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must evaluate the potential impact of such hazards on future residents or users....” *California Building Industry Assn. v. Bay Area Air Quality Mgmt. Dist.*, 62 Cal. 4th 369, 377 (2015). Yet, the EIR does not do so.

3.6

Moreover, the EIR does not mention the RPS Group’s investigation, which revealed four VOCs (PCE, TCE, 1,1-DCE, and benzene) are currently present in soil gas at concentrations exceeding Tier 1 ESLs. This omission is concerning because the Draft EIR does reference (with respect to the Shelton property that RPS investigated) a 2016 Phase I investigation by another consulting firm, ENGEO, conducted three years before the RPS investigation. With respect to the detection of VOCs in soil vapor, the Draft EIR summarizes the ENGEO report in one sentence: “In addition, elevated concentrations of VOCs (specifically, TCE) have been identified in the soil gas in the northern portion of the property (associated with an off-site plume).” Draft EIR at 4.7-6. The Draft EIR does not mention the detections of PCE, 1,1-DCE or benzene, nor does it mention that the concentrations of those VOCs and of TCE exceeded ESLs.

Despite omitting any discussion of the RPS report, the Draft EIR nevertheless concludes that the effects of development above areas where VOCs are present would be significant (“less than significant with mitigation” in the words of the Draft EIR). However, the mitigation that is described in the report would not be adequate to mitigate the potential hazard. The Draft EIR states, with respect to the planned mitigation:

3.7

“Prior to the issuance of grading permits, the project sponsor shall demonstrate compliance with the recommendations in the Step-out Soil Gas Assessment (ENGEO 2013) to address vapor intrusion concerns. Implementation of engineering controls shall be implemented on the project site in accordance with the Step-out Soil Gas Assessment (ENGEO 2013) to address the presence of elevated VOCs (in areas where TCE and PCE concentrations exceeded residential screening levels). Engineering controls shall be installed to redirect and or minimize VOC concentrations. Said engineering controls shall consist of controls that allow for passive ventilation and discharge of the vapors into the atmosphere. Specific engineering controls may include, but will not be limited to:

- “• Installation of subsurface migration barriers; and/or
- “• Inclusion of ventilated foundations for any proposed structures; and/or
- “• The use and implementation of an alternative method or structural design that would address soil gas releases and reduce the potential for hazardous conditions to occur.
- “Appropriate engineering control system(s) shall be determined with concurrence, approval, and oversight of the DTSC and RWQCB, and shall be dependent on future building placement and construction. If monitoring or extraction wells remain in place at the time that engineering controls are submitted to DTSC and RWQCB, the engineering controls shall ensure that building placement will not interfere with operation of the well facilities, or that DTSC and/or RWQCB have approved any required modifications to the well facilities.”

Draft EIR at 4.7-23.

3.7
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The proposed mitigation is inadequate to address the potential hazards. Engineering controls for vapor intrusion may consist of a vapor barrier below the slab, and a “passive” or “active” venting system that pulls vapor from beneath the structure and vents it to the atmosphere. Passive systems may consist of vents, or vents with wind-driven turbines. Active systems may include electric fans or blowers to remove vapors from the subslab area. The project owner proposes to restrict the available ventilation mitigation measures to “passive ventilation and discharge” of vapors. In some cases, passive ventilation is not sufficient to prevent migration of VOCs into indoor air at concentrations that exceed screening levels. The required mitigation should include active ventilation if required by site conditions.

In addition, the project owner has made no provision for testing, monitoring or maintenance of those measures. If mitigation measures are installed but not tested, they may not be effective. If they are not maintained, they may become ineffective over time. And if future residents are permitted to alter or destroy them, then the mitigation measures will not function properly.

In order to assure that the potential for vapor intrusion has been adequately addressed, the mitigation measures should include a Vapor Intrusion Monitoring and Maintenance Plan that addresses all of the following issues:

- Adequate testing of subsurface migration barriers during construction, and documentation of test results.

3.7
con't

- At least four quarterly indoor air samples before occupancy. Vapor intrusion varies significantly depending on weather conditions, and both US EPA and California environmental agencies require multiple samples over time, in hot and cold seasons, to determine whether vapor intrusion is occurring.
- Long-term monitoring and maintenance of mitigation measures, including subslab barriers and venting systems. Vapor barriers and venting systems, particularly those that are in exposed areas such as crawl spaces, may be damaged by flooding, rodents, and building maintenance workers and activities. They should be regularly monitored and repaired when necessary.
- An environmental covenant and/or restriction that will prohibit future owners and occupants from interfering with vapor intrusion mitigation measures.
- An environmental covenant and/or restriction that will require future owners to operate and maintain the mitigation measures.
- A financial assurance mechanism that will assure payment of future operation and maintenance costs, either by the project owner or future owners.

All of the above measures are essential to ensure that the project does not exacerbate the existing environmental conditions in the project area. They should be incorporated into the project's land use permit as required environmental mitigation.

McKesson does not oppose the proposed project, so long as it is constructed with appropriate mitigation of potential vapor intrusion hazards. Those hazards have not been adequately addressed in the Draft EIR. The project owner should be required to address the potential vapor intrusion hazard, and a detailed Vapor Intrusion Monitoring and Maintenance Plan, as described above, should be required as a condition of the project's land use permit.

Very truly yours,



R. MORGAN GILHULY

RMG/cgd

cc: James Fleer
Aliyya Haque
Bruce Scheibach

EXHIBIT A

UNION CITY PHASE II INVESTIGATION REPORT

Shelton and R&S Parcels
33945 Seventh Street
Union City, California



204066
Union City Phase II
Investigation Report
October, 2019

PHASE II INVESTIGATION REPORT

October 25, 2019

Glenn Brown, PE
The Union City Project Owner, LLC
500 La Gonda Way, Suite 102
Danville, California 94526

Subject: Union City Phase II Investigation Report
Shelton and R&S Parcels
33945 Seventh Street
Union City, California

Dear Mr. Brown:

The enclosed report presents the results of the Phase II Investigation Report (Phase II) conducted at the property located at 33945 Seventh Street in Union City, California (Site). RPS Group, Inc. (RPS) prepared this report on behalf of The Union City Project Owner, LLC (UCPO) in accordance with our proposal dated July 1, 2019.

Please contact the undersigned if you have any questions or require additional information.

Sincerely,
RPS GROUP, INC.



Vincent Tilotta, PE
SIR Project Manager
Vincent.Tilotta@rpsgroup.com



James Schwartz, PG
Senior Vice President
Site Investigation & Remediation –
West Coast
james.schwartz@rpsgroup.com

Enclosures

C: Douglas Young – Alameda County Water District

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Appendix A	ACWD Drilling Permit
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1 INTRODUCTION

RPS Group, Inc. (RPS) prepared this Phase II Investigation Report (Phase II) to document the results of the investigation conducted at 33945 Seventh Street, Union City, California (Site) as shown on **Figure 1**. This work was performed by RPS on behalf of The Union City Project Owner, LLC (UCPO), in accordance with the proposal dated April 10, 2019. The purpose of this Phase II was to assess potential shallow soil impacts related to historic agricultural site usage, as well as to determine the potential soil vapor intrusion risk from volatile organic compounds (VOCs) on future development of the Site. Previous Phase II investigations performed at the Site in November 2013 (Engeo, 2013a, 2013b) uncovered pesticide impacts to Site soil, as well as VOC impacts to Site groundwater and soil vapor related to the neighboring McKesson plume. This Phase II is intended to close data gaps from the previous investigations in preparation of a future Remedial Action Plan (RAP) for residential redevelopment of the Site.

This investigation was performed in accordance with the *Work Plan for Phase II Environmental Site Assessment* (RPS, 2019; Work Plan), dated July 1, 2019, and approved by the Alameda County Water District (ACWD).

RPS completed the following Work Plan objectives:

- Preparation of a Site-specific Health and Safety Plan (HASP) in conformance with 40 Code of Federal Regulations (CFR) Health and Safety Code 1941.120 and California Code of Regulations (CCR) Title 8;
- Obtained a drilling permit from the ACWD;
- Site inspection and boring location identification/marketing;
- Notification of Underground Service Alert (USA) 72 hours in advance of pending fieldwork;
- Surveyed the boring locations using a private utility locator to locate underground utilities;
- Installed 63 shallow soil borings to collect 126 soil samples to further characterize pesticide impacts to shallow soil; and
- Collected 40 soil vapor samples to assess potential VOC impacts to soil vapor.

2 SITE SETTING AND BACKGROUND

As shown on **Figure 2**, the Site consists of four parcels of land, labeled Shelton A west, Shelton B, Shelton C, and R&S, totaling approximately 22 acres. The adjacent properties consist of a former ambient air capturing and compressing facility (air facility), an electrical substation, manufacturing facilities, an undeveloped field, a garage with gravel parking, and former and active railroad easements. The air capturing facility (700 Decoto Road) consists of a fill plant, an air separation plant, a compressor room, gas storage tanks, cooling towers, a maintenance shop, office space, and concrete paved roadways and parking spaces. The adjacent railroad easement to the west is currently vacant with portions of rail line removed, and the rail line to the southwest of the Site is currently active.

Engeo completed an *Agrichemical Impact Assessment* (Engeo, 2013a) and a *Stepout Soil Gas Assessment* (Engeo, 2013b) of the Shelton parcels in November 2013 to assess the possible presence of arsenic and organochlorine pesticides (OCPs) in shallow soil, as well as VOCs in soil vapor related to the neighboring McKesson Plume. The results of the Engeo investigations indicated that OCPs, specifically toxaphene, was present in shallow soil at concentrations above the California Department of Toxic Substances Control (DTSC) screening levels (SLs) for residential soil. The investigations also indicated that VOCs, specifically tetrachloroethene (PCE) and trichloroethene (TCE), are present in soil vapor in concentrations that exceed the San Francisco Bay Area Regional Water Quality Control Board (Water Board) environmental screening levels (ESLs) for residential vapor intrusion.

Groundwater under the Site is impacted by VOCs, primarily PCE and TCE, originating from the McKesson plume, as documented in the *2018 Annual and May 2018 Groundwater Quality Results Report* (Omega, 2018). Other chemicals of potential concern (COPCs) associated with the McKesson plume include 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), Trichloroethane (TCA), and Freon 11. McKesson has been operating a groundwater extraction system on the Site since 1991. The locations of the groundwater monitoring wells and extraction wells are shown on **Figure 2**.

Engeo completed a *Phase II Environmental Site Assessment* (Engeo, 2015) on the R&S parcel in February 2015 to assess the possible presence of metals, total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAHS), and polychlorinated biphenyls (PCBs) in shallow soil related to historical agricultural and rail road activity, as well as VOCs in soil vapor related to the McKesson plume. The results of the investigation indicated that OCPs, specifically toxaphene, was present in shallow soil at concentrations exceeding the DTSC SL for residential soil.

3 METHODOLOGY

This section describes the soil and soil vapor investigation activities performed between August 5 and August 13, 2019 to fill data gaps from previous assessments of potential soil impacts associated with Site agricultural use and VOC impacts to soil vapor from the McKesson plume. Samples were collected at the approximate locations shown on **Figure 3** and **Figure 4**. The following sections document the pre-field activities, field sampling procedures and analytical methods completed for this investigation.

3.1 Pre-Field Activities

Prior to performing the subsurface investigation, RPS completed the following tasks:

- RPS prepared a HASP, in accordance with the requirements of the State of California General Industry Safety Order (GISO) 5192 and Title 29 of the Code of Federal Regulations, Section 1910.120 (29 CFR 1910.120). A copy of the HASP was kept on-Site during field activities. The HASP included details of the work to be performed, safety precautions, emergency response procedures, nearest hospital information, and on-Site personnel responsible for managing emergency situations.
- RPS marked the boring locations with white paint and contacted USA 72 hours prior to drilling, as required by law. RPS also contracted and oversaw a private professional utility locating service, Subdynamic Locating Services, Inc., to assess the proposed boring locations for the potential presence of underground utilities.
- A drilling permit was acquired from ACWD (**Appendix A**) for the temporary soil vapor wells.

3.2 Field Activities

3.2.1 Soil Boring Advancement

RPS contracted with Environmental Control Associates, INC, a California-licensed C-57 drilling subcontractor to advance soil borings. The borings were advanced with a track-mounted limited-access Direct Push Technology (DPT) drill rig. The direct-push rig advanced Macrocore barrels (2-inch outside diameter) lined with 1.75-inch diameter acetate sample sleeves to desired depths using a pneumatic hammer system from the ground surface to a maximum depth of approximately 2.0 feet below ground surface (bgs) for shallow soil borings and 15.5 feet bgs for deep soil borings. An RPS staff geologist, engineer, or scientist under the supervision of a California-licensed Professional Geologist or Engineer logged Site soils using the visual-manual procedures of ASTM Standard D-2488-09a for guidance, which is based on the United Soil Classification System (USCS). The boring logs are included as **Appendix B**.

Upon completion of the sampling program, borings greater than 5 feet in depth were backfilled to surface with a neat cement grout, using a tremie method, in accordance with applicable jurisdictional requirements. Prior to each use, the drilling equipment and down hole sampling equipment was washed in a solution of non-phosphate detergent, double rinsed with portable water, and allowed to dry.

3.2.2 Soil Sampling

Following soil logging and photoionization detector (PID) screening, discrete soil samples were collected from depths of 0.5 feet and 1.5 feet bgs. Soil samples for non-volatile analysis were collected in laboratory provided jars. Samples were labelled with identifying information (e.g., sample collector, sample date, and sample time), sealed in a plastic bag, and placed in an ice-filled cooler for delivery. The samples collected were delivered to Pace Analytical laboratory (Pace) in Mt. Juliet, Tennessee under chain-of-custody protocol.

Soil cuttings were placed into a single 55-gallon drum which was labeled and temporarily stored onsite. RPS collected a sample of the soil cuttings and will contract with a third-party environmental resources company that will use the soil characterization analytical data to obtain acceptance for transport to a suitable disposal facility.

3.2.3 Soil Vapor Sample Collection

Soil vapor samples were collected in compliance with the California Department of Toxic Substances Control (DTSC) *Advisory – Active Soil Gas Investigations* (July 2015) as described below. The soil vapor probes were installed by advancing a 1.5-inch diameter boring to 15.5 feet bgs using a direct push drill-rig. Two lengths of small diameter (0.25-inch) Teflon-lined tubing were inserted into the borehole and lowered to 5 and 15 feet bgs, respectively. Approximately 12 inches of filter pack sand was placed in the bottom of the boring (i.e., from 14.5 to 15.5 feet bgs), with the probe placed midway through the filter pack sand. Following installation of the sand pack, the borehole was backfilled to the surface in approximately 6-inch lifts with hydrated bentonite; dry granular bentonite was emplaced between the sand pack and the hydrated bentonite grout to prevent infiltration of the hydrated bentonite into the top sand pack at 5.5 feet bgs, at which point a second 12 inches of filter pack was emplaced to accommodate a shallow sampling depth. A second probe was installed at 5 feet bgs, followed by six inches of dry bentonite from 4.5 feet to 4 feet bgs, with the remainder of the boring filled with hydrated bentonite.

A valve was fitted to the aboveground end of the tubing and was kept closed prior to purging and sampling. Following installation, a temporary cover was placed over each soil vapor probe for probe protection prior to sampling. The soil vapor sampling probes left to equilibrate for at least two hours prior to purging and sampling. After purging and successful completion of leak-check procedures, soil vapor samples were collected at a flow rate between approximately 100 and 200 milliliters (mL) per minute into 1-liter batch-certified Summa canisters provided by Eurofins Scientific.

The soil vapor samples were analyzed for VOCs using United States Environmental Protection Agency (USEPA) Method TO-15 and helium (leak-checking gas) using ASTM Method D-1946 by a State-certified laboratory. The soil vapor wells were over drilled and grouted within 24 hours of construction, as approved by ACWD.

Following sample collection, the valve on each of the cannisters were closed, and the associated flow controller was removed. The vacuum pressure was recorded at the end of sampling using a vacuum gauge to confirm sample collection, and the canister inlet was sealed with a brass cap. The soil vapor samples were recorded on a chain-of-custody document that accompanied the samples from the point of collection to Eurofins Scientific for laboratory analysis. For decommissioning soil vapor borings, the soil vapor probes were removed from the hole. Each hole was subsequently over-drilled and filled with neat cement grout to the surface.

3.3 Analytical Program

3.3.1 Soil Samples

A total of 126 discrete soil samples were collected from 63 borings (**Figure 4**) and analyzed for the following constituents necessary to characterize possible pesticide impacts from historical Site use:

- OCPs by USEPA Method 8081B.

3.3.2 Soil Vapor

A total of 40 soil vapor samples were collected from 20 borings (**Figure 3**) and analyzed for the following constituents necessary for evaluating the potential for vapor intrusion concerns including:

- VOCs by USEPA Method TO-15; and
- Helium by ASTM Method D-1946.

4 ANALYTICAL RESULTS

This section presents the summary of analytical results for soil and soil vapor. Analytical data is presented in **Table 1** and **Table 2** and laboratory analytical reports are included as **Appendix C**.

4.1 Soil Laboratory Analytical Results

RPS collected a total of 126 soil samples from 63 borings located on the Site (**Figure 4**). The analytical data for the soil samples is summarized in **Table 1** and was compared to the 2019 DTSC SLs for soil exposure for residential land use. The soil sampling results indicate that detected concentrations of all OCPs are below their respective SLs, with the following exceptions:

- Chlordane was detected at concentrations exceeding the cancer (CA) SL for soil exposure for residential land use of 1.7 milligrams per kilogram (mg/kg) in three samples, ranging from 1.7 mg/kg to 2.9 mg/kg in samples S5-0.5 and S1-1.5, respectively.
- Toxaphene was detected at concentrations exceeding the CA SL for soil exposure for residential land use of 0.45 mg/kg in 74 samples, ranging from 0.46 mg/kg to 3.1 mg/kg in samples S36-1.5 and S29-0.5, respectively. Toxaphene exceedances are shown at depths of 0.5 feet bgs and 1.5 feet bgs in **Figure 5**.

4.2 Soil Vapor Laboratory Analytical Results

A total of 40 soil vapor samples were collected from 20 soil vapor wells (**Figure 3**). The analytical data for the soil vapor samples is summarized in **Table 2** and is compared to the Water Board ESLs for vapor intrusion for residential land use.

The soil vapor sampling results did not exceed ESLs for all analytes, with the following exceptions:

- Benzene was detected at concentrations exceeding the CA ESL of 3.2 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in 10 samples at concentrations ranging from 4.3 $\mu\text{g}/\text{m}^3$ to 20 $\mu\text{g}/\text{m}^3$ in samples SG-09-5.0 and SG-06-15.0, respectively.
- 1,1-dichloroethylene (1,1-DCE) was detected at concentrations exceeding the noncancer (NC) ESL of 2,400 $\mu\text{g}/\text{m}^3$ in three samples at concentrations ranging from 2,500 $\mu\text{g}/\text{m}^3$ to 9,000.0 $\mu\text{g}/\text{m}^3$ in samples SG-15-15.0 and SG-16-15.0, respectively.
- Ethylbenzene was detected at a concentration exceeding the CA ESL of 37 $\mu\text{g}/\text{m}^3$ in one sample at a concentration of 80 $\mu\text{g}/\text{m}^3$ in sample SG-02-15.0.
- PCE was detected at concentrations exceeding the CA ESL of 15 $\mu\text{g}/\text{m}^3$ in 27 samples at concentrations ranging from 33 $\mu\text{g}/\text{m}^3$ to 28,000 $\mu\text{g}/\text{m}^3$ in samples SG-15-15.0 and SG-03-15.0, respectively. PCE isocontour maps for soil vapor results at 5 feet bgs and 15 feet bgs are shown in **Figure 6** and **Figure 7**, respectively.
- TCE was detected at concentrations exceeding the CA ESL of 16 $\mu\text{g}/\text{m}^3$ in 28 samples at concentrations ranging from 35 $\mu\text{g}/\text{m}^3$ to 9,100 $\mu\text{g}/\text{m}^3$ in samples SG-13-5.0 and SG-16-15.0, respectively. TCE isocontour maps for soil vapor results at 5 feet bgs and 15 feet bgs are shown in **Figure 8** and **Figure 9**, respectively.

5 CONCLUSIONS

A Phase II investigation was performed on the Site to assess potential soil impacts related to historical agricultural use, as well as to assess potential soil vapor impacts from the McKesson plume. This investigation was designed to close data gaps from previous investigations performed by Engeo in 2013 and 2015. Shallow soil samples were collected throughout the Site to determine the extents of OCP impacts. Soil vapor samples were collected from depths of 5 feet and 15 feet bgs in the area above the McKesson plume to determine the extents of soil vapor impacts and the potential soil vapor intrusion risk from VOCs.

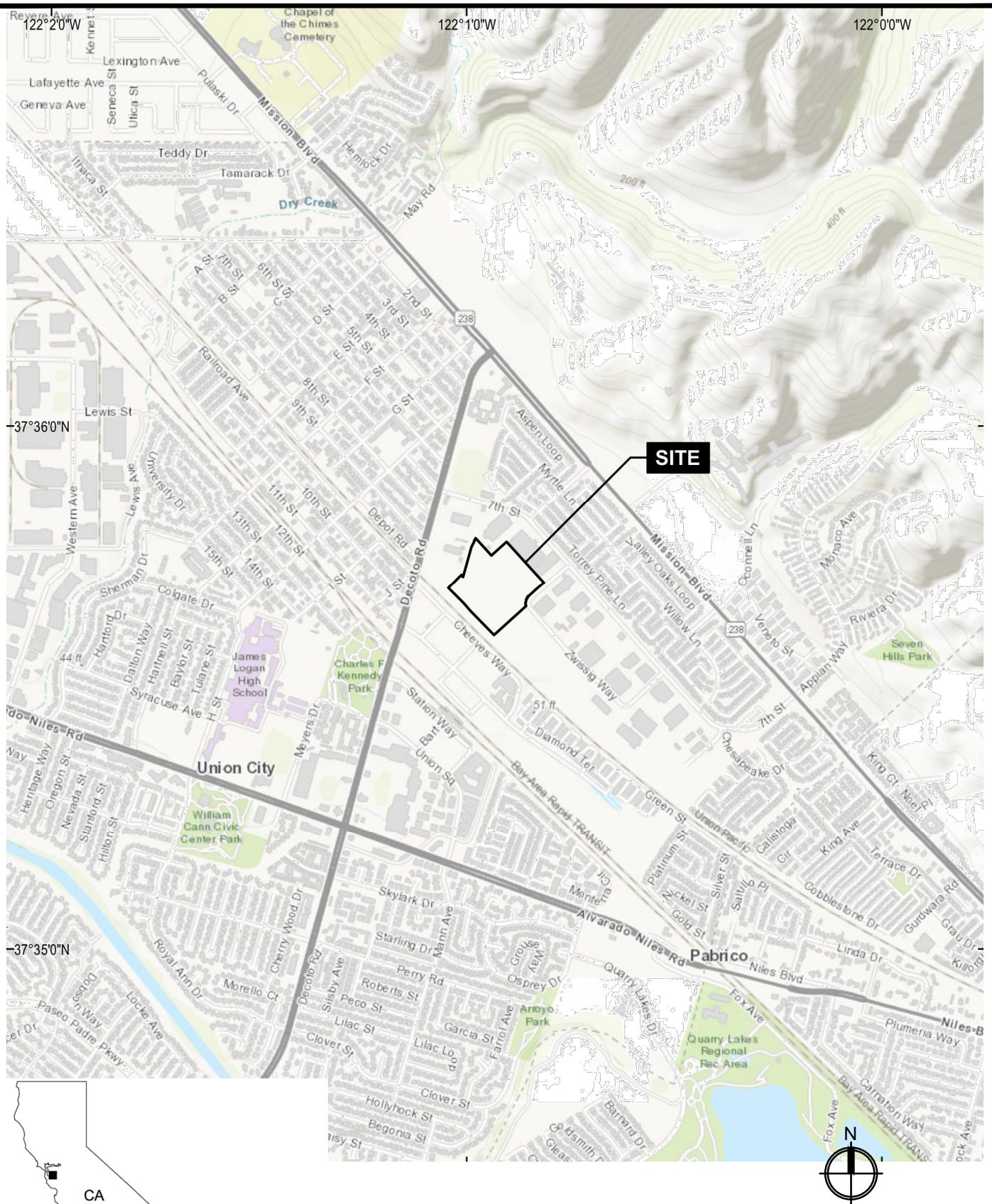
Soil sampling indicates that shallow soil is impacted with OCPs, primarily toxaphene, across all four parcels (**Figure 5**). Toxaphene impacts appear to be isolated to the top two feet of soil.

Soil vapor sampling indicates PCE and its daughter products, TCE and 1,1-DCE, are present in concentrations exceeding the residential ESLs for soil vapor intrusion in portions of parcels Shelton C and Shelton A West at depths of 5 feet and 15 feet bgs, as shown in **Figure 10** and **Figure 11**, respectively. The PCE and TCE isocontour maps indicate that chlorinated solvents in soil vapor are confined to the north and east of the Site, which corresponds to the location of the McKesson plume. Additionally, benzene was detected in concentrations exceeding the residential ESL for soil vapor along the northern edge of the Site, across an approximate 3.3-acre area.

6 REFERENCES

- California Environmental Protection Agency (Cal/EPA). 2015. *Advisory – Active Soil Gas Investigations*. Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board, San Francisco Bay Regional Water Quality Control Board. July.
- Department of Toxic Substances Control (DTSC). Human and Ecological Risk Office (HERO). 2019. *Human Health Risk Assessment (HHRA) Note. HERO HHRA Note Number: 3, DTSC-modified Screening Levels (DTSC-SLs)*. April.
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- Engeo. 2013b. *Stepout Soil Gas Assessment*. December 18.
- Engeo. 2015. *Phase II Environmental Site Assessment*. February 27.
- Omega Environmental Management, Inc. 2018. *2018 Annual and May 2018 Groundwater Quality Results, Former McKesson Facility, Union City, California*. July.
- RPS. 2019. *Work Plan for Phase II Environmental Site Assessment, Union City Properties, Shelton A, B & C and R&S Assemblage, Union City, California*. July 1.
- San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. *User's Guide: Derivation and Application of Environmental Screening Levels*. Rev. 1. January 24.

Figures

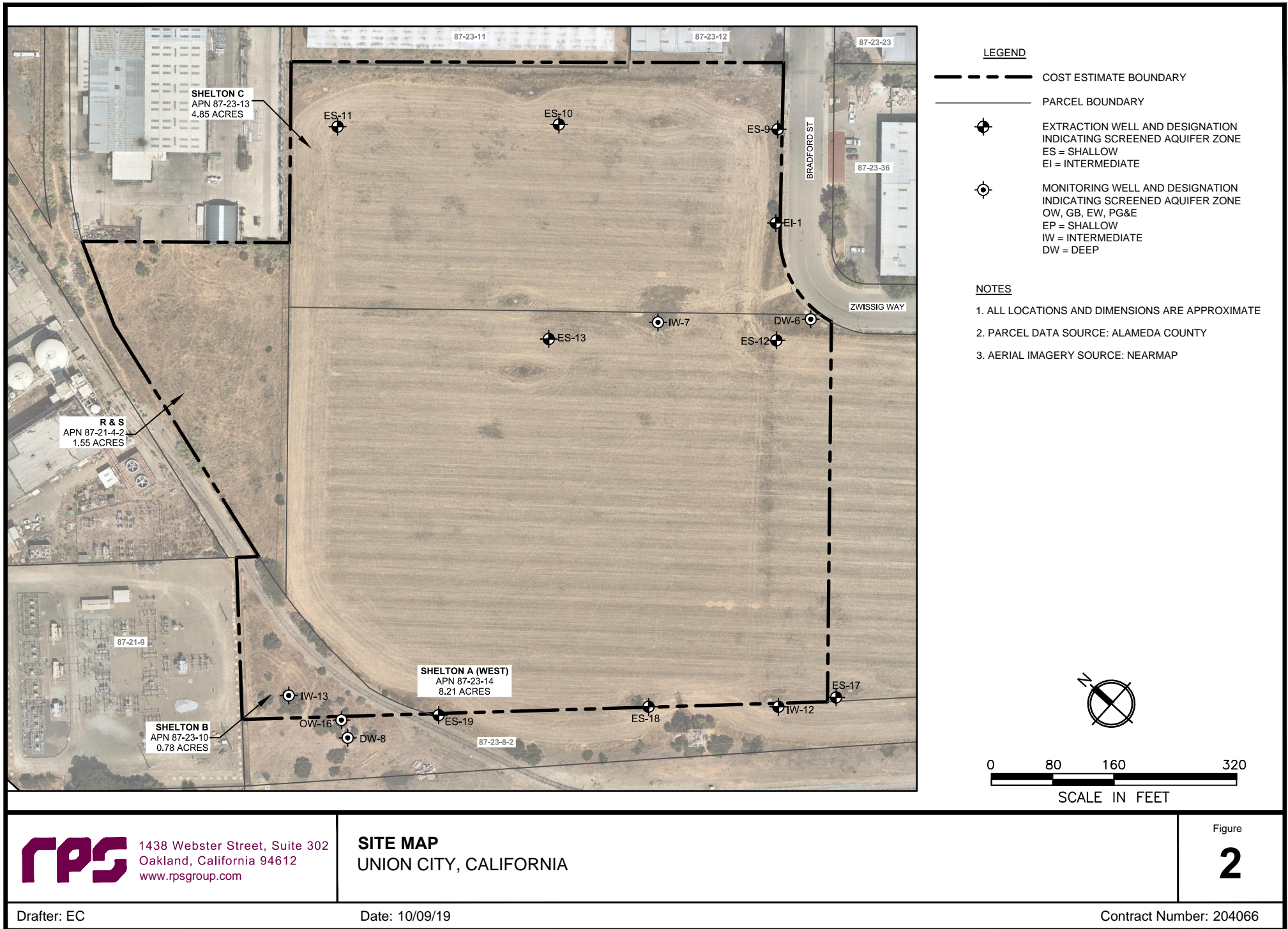


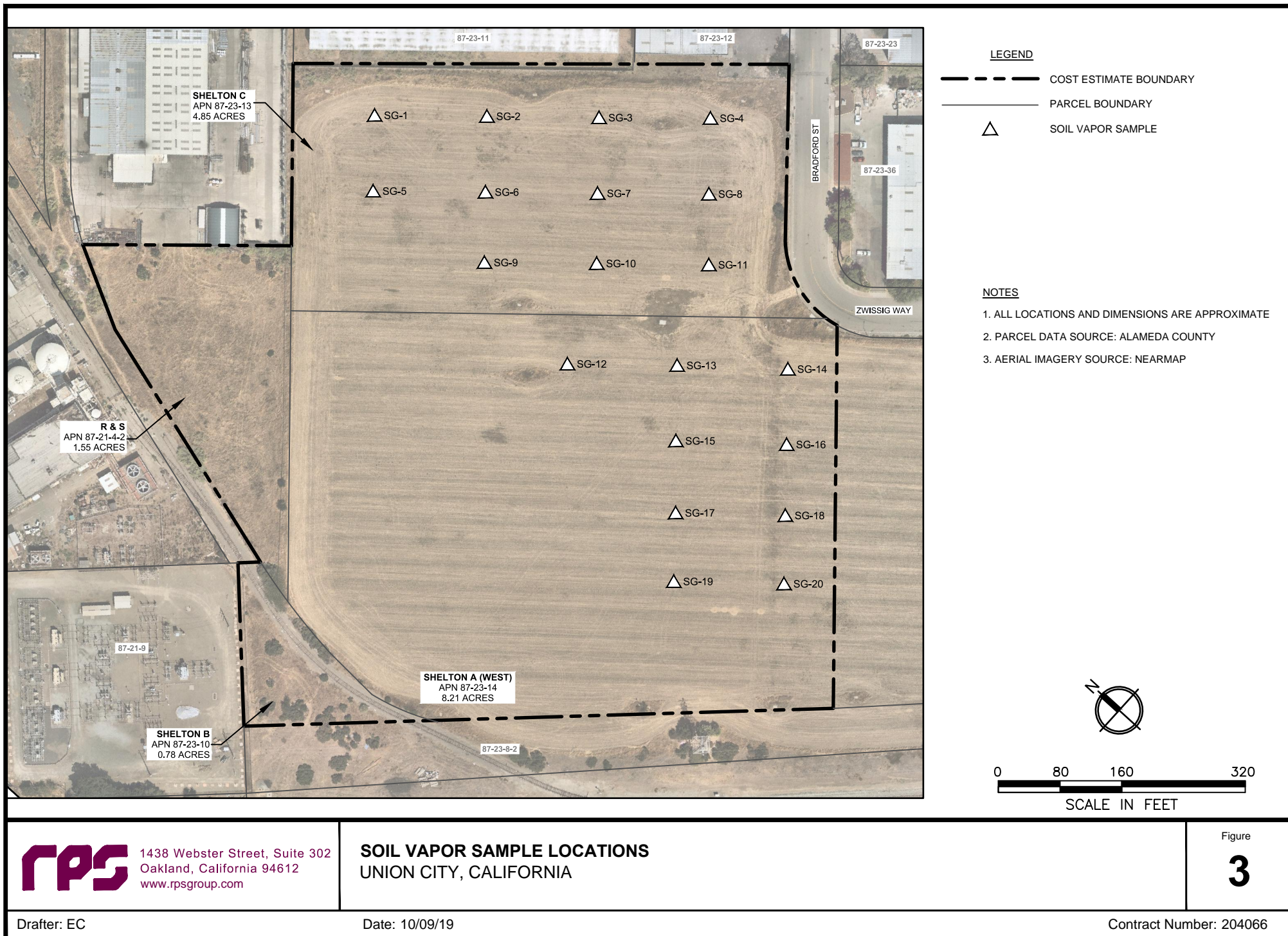
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SITE LOCATION MAP NEWARK, CALIFORNIA

Figure

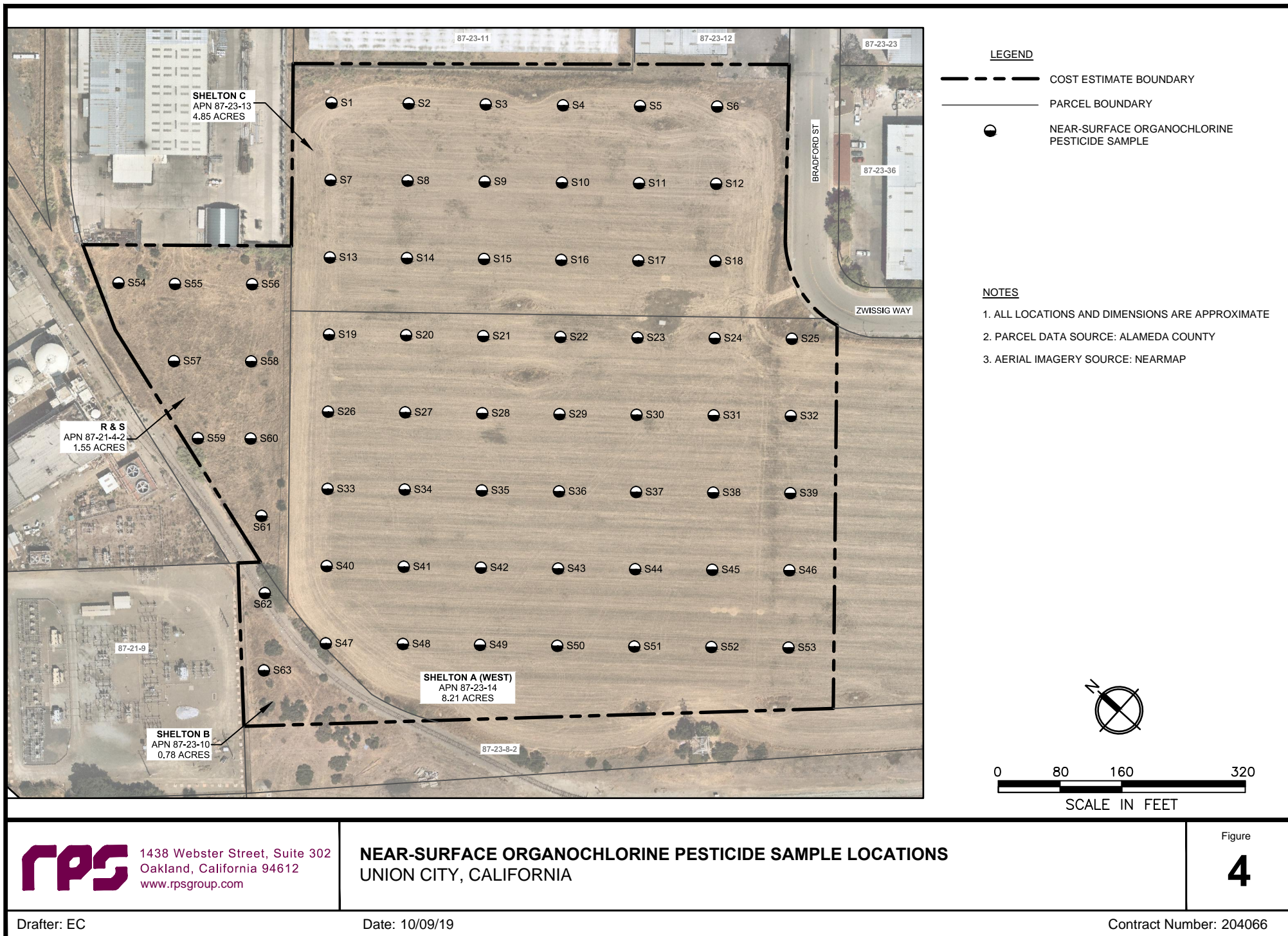
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SOIL VAPOR SAMPLE LOCATIONS UNION CITY, CALIFORNIA



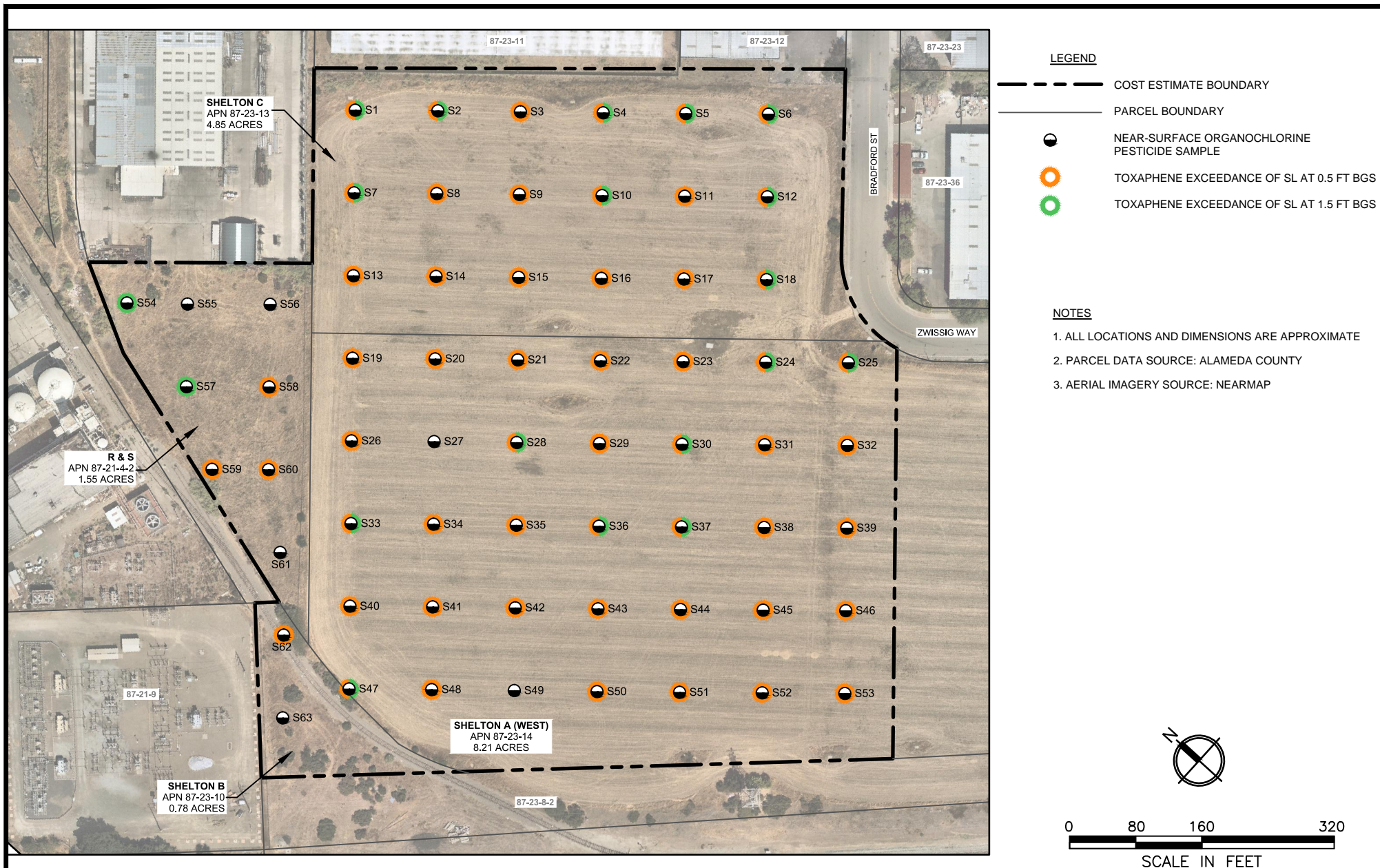
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NEAR-SURFACE ORGANOCHLORINE PESTICIDE SAMPLE LOCATIONS UNION CITY, CALIFORNIA

Drafter: EC

Date: 10/09/19

Contract Number: 204066

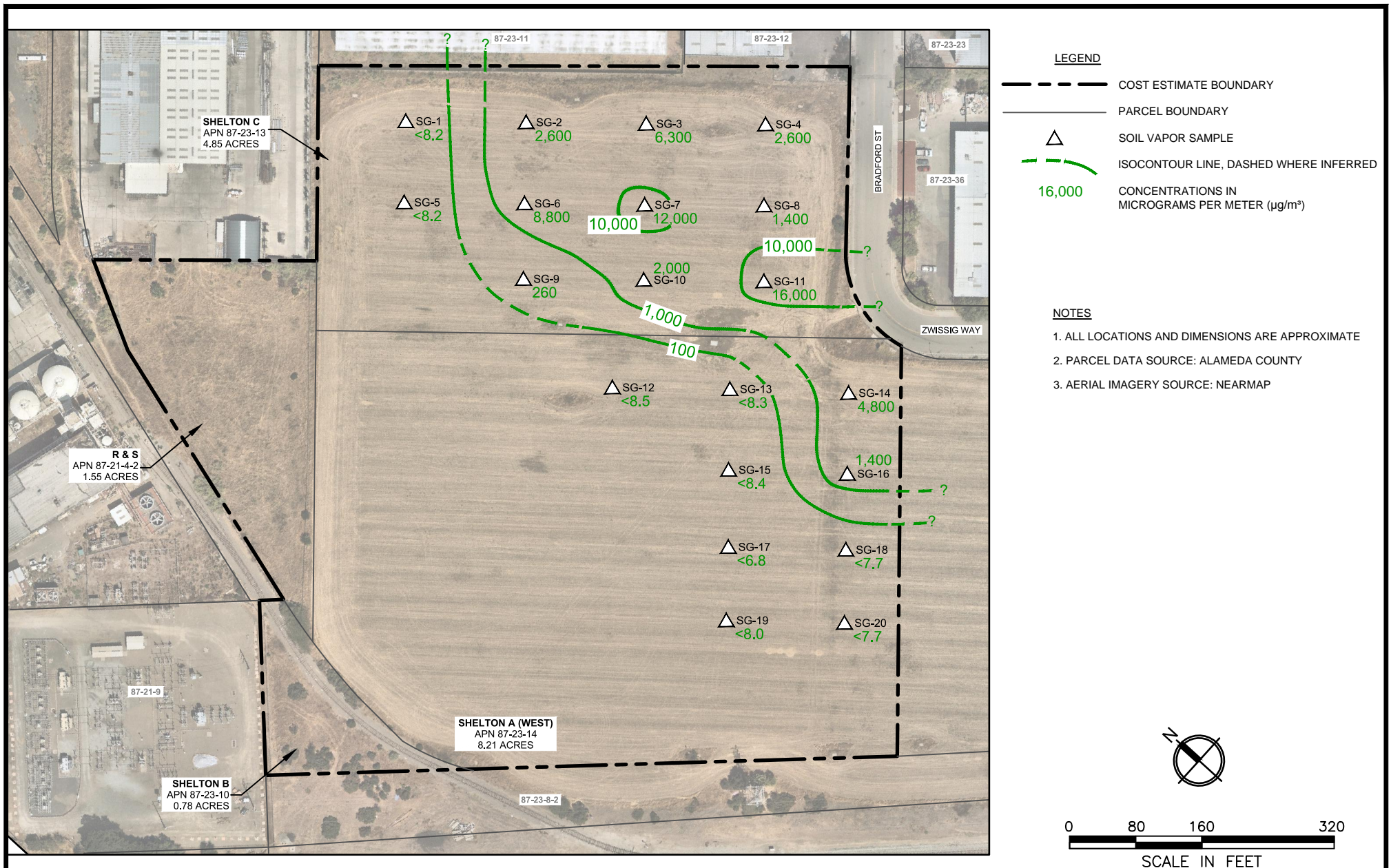


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TOXAPHENE EXCEEDANCES IN SOIL SAMPLES UNION CITY, CALIFORNIA

Figure

5

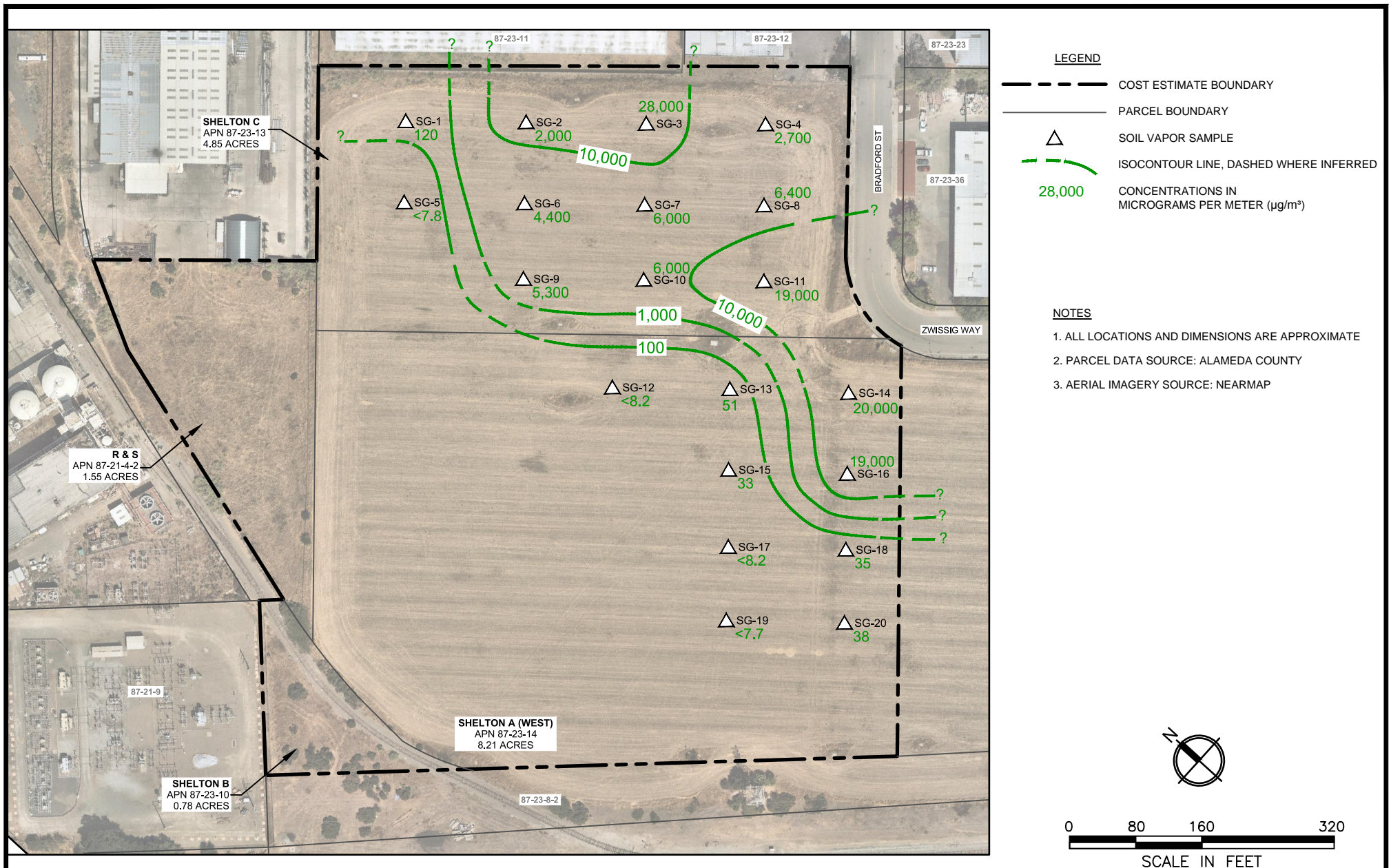


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TETRACHLOROETHYLENE ISOCONCENTRATION MAP FOR SOIL VAPOR SAMPLES COLLECTED AT 5 FEET BGS UNION CITY, CALIFORNIA

Figure

6

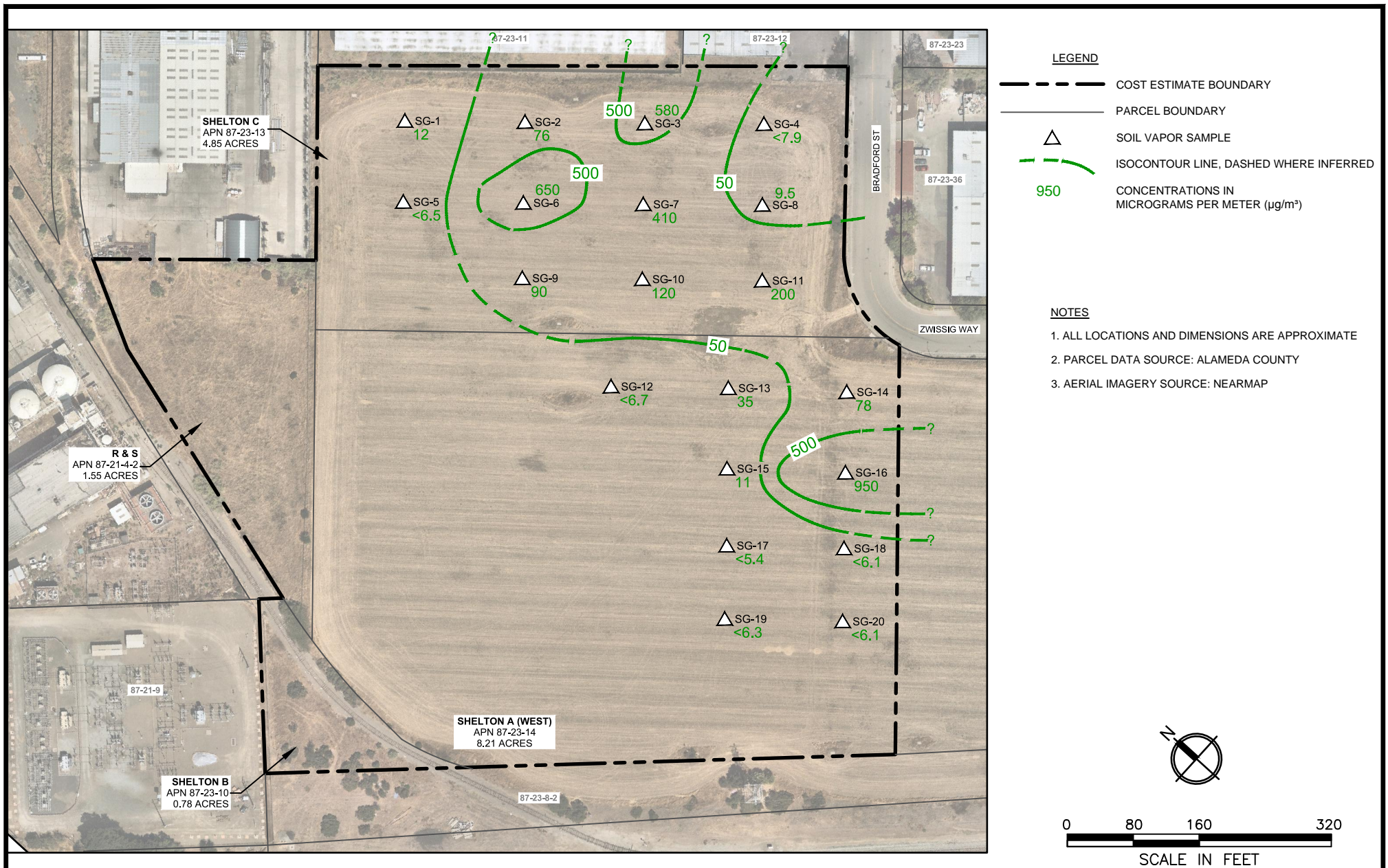


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TETRACHLOROETHYLENE ISOCONCENTRATION MAP FOR SOIL VAPOR SAMPLES COLLECTED AT 15 FEET BGS UNION CITY, CALIFORNIA

Figure

7

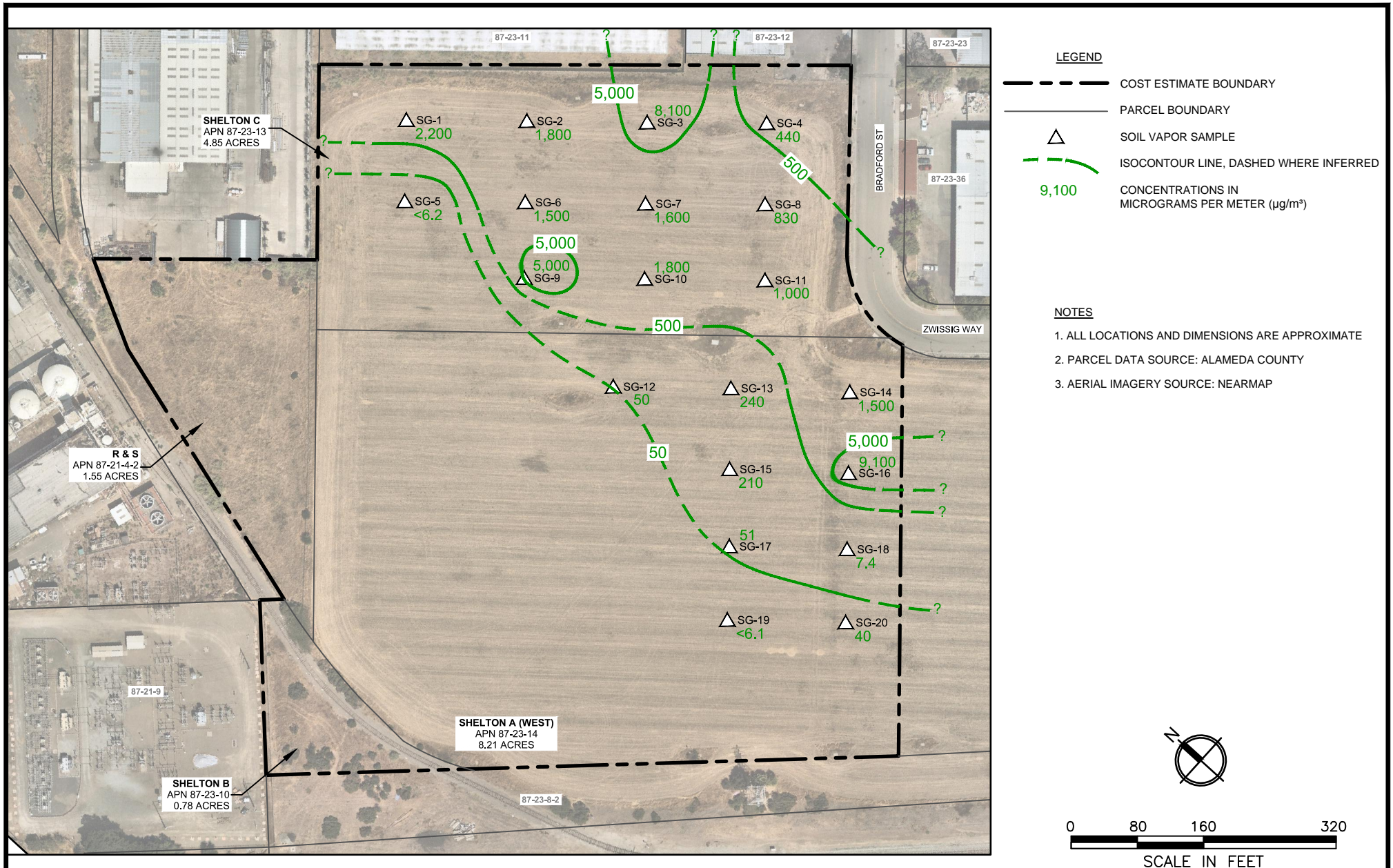


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TRICHLOROETHYLENE ISOCONCENTRATION MAP FOR SOIL VAPOR SAMPLES COLLECTED AT 5 FEET BGS UNION CITY, CALIFORNIA

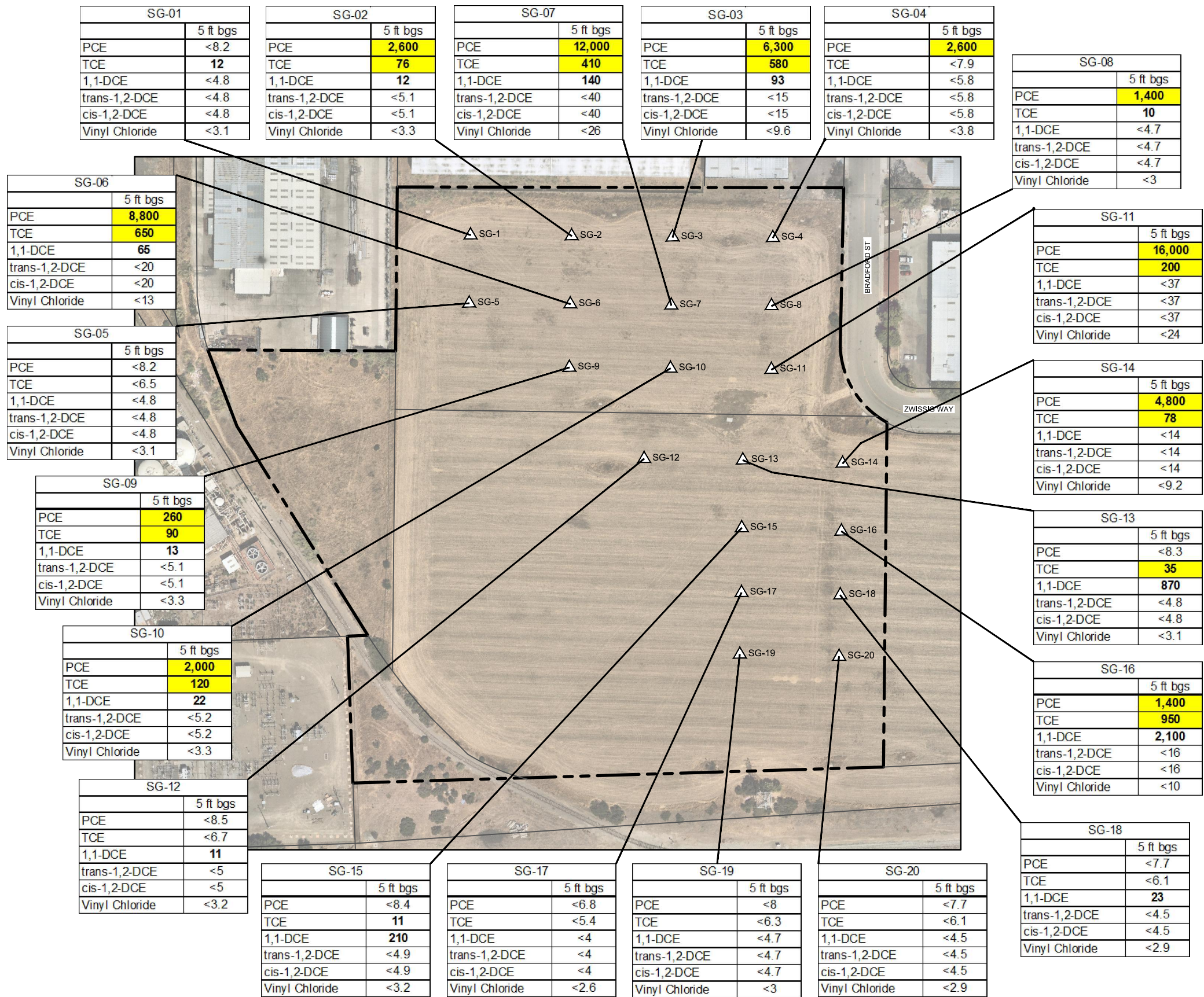
Figure

8



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TRICHLOROETHYLENE ISOCONCENTRATION MAP FOR SOIL VAPOR SAMPLES COLLECTED AT 15 FEET BGS UNION CITY, CALIFORNIA



LEGEND

--- COST ESTIMATE BOUNDARY

— PARCEL BOUNDARY

△ SOIL VAPOR SAMPLE

µg/m³ MICROGRAMS PER METER

BOLD FONT INDICATES A DETECTION ABOVE THE LABORATORY DETECTION LIMIT

SOIL VAPOR SAMPLING RESULTS THAT EXCEEDED ANY SCREENING LEVEL

< COMPOUND NOT DETECTED AT OR ABOVE THE LABORATORY REPORTING LIMIT

PCE TETRACHLOROETHYLENE (µg/m³)

TCE TRICHLOROETHYLENE (µg/m³)

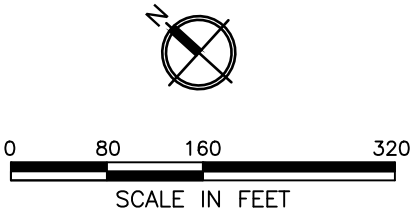
1,1-DCE 1,1-DICHLOROETHYLENE (µg/m³)

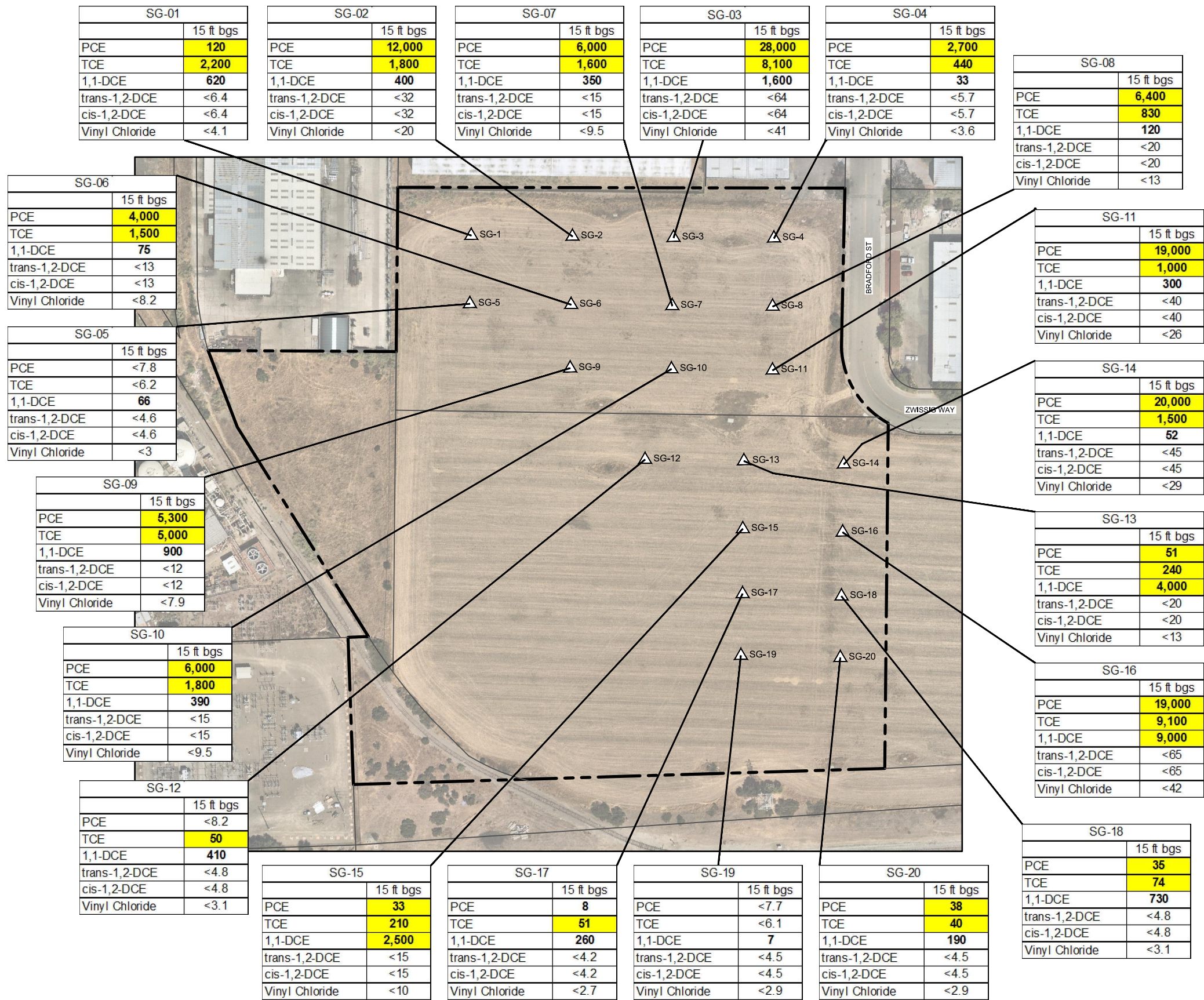
cis-1,2-DCE cis-1,2-DICHLOROETHYLENE (µg/m³)

TRANS-1,2-DCE TRANS-1,2-DICHLOROETHYLENE (µg/m³)

VC VINYL CHLORIDE (µg/m³)

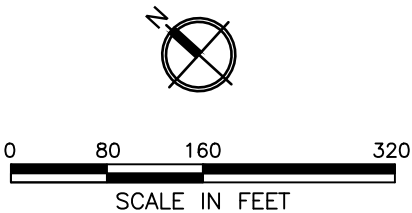
- NOTES**
1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
 2. PARCEL DATA SOURCE: ALAMEDA COUNTY
 3. AERIAL IMAGERY SOURCE: NEARMAP





- LEGEND**
- COST ESTIMATE BOUNDARY
 - PARCEL BOUNDARY
 - △ SOIL VAPOR SAMPLE
 - µg/m³ MICROGRAMS PER METER
 - BOLD** FONT INDICATES A DETECTION ABOVE THE LABORATORY DETECTION LIMIT
 - SOIL VAPOR SAMPLING RESULTS THAT EXCEEDED ANY SCREENING LEVEL
 - < COMPOUND NOT DETECTED AT OR ABOVE THE LABORATORY REPORTING LIMIT
 - PCE TETRACHLOROETHYLENE (µg/m³)
 - TCE TRICHLOROETHYLENE (µg/m³)
 - 1,1-DCE 1,1-DICHLOROETHYLENE (µg/m³)
 - cis-1,2-DCE cis-1,2-DICHLOROETHYLENE (µg/m³)
 - TRANS-1,2-DCE TRANS-1,2-DICHLOROETHYLENE (µg/m³)
 - VC VINYL CHLORIDE (µg/m³)

- NOTES**
1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
 2. PARCEL DATA SOURCE: ALAMEDA COUNTY
 3. AERIAL IMAGERY SOURCE: NEARMAP



3.4 Letter 3

Commenter: R. Morgan Gilhuly, Barg Coffin Lewis & Trapp, LLP

Date: December 18, 2020

Response 3.1

The commenter states that the Draft EIR fails to adequately describe or address the environmental impacts associated with construction of residences and commercial buildings on the portion of the project site that is above soil vapor and groundwater contamination. The commenter also notes that hazardous constituents present in soil may be disturbed and dispersed during site grading.

As noted in Mitigation Measure HAZ-2a in Section 4.7.2.4, *Impacts and Mitigation Measures*, on page 4.7-21 of the Draft EIR, prior to the earthwork and grading phase of the project, the project sponsor would engage a qualified environmental engineering firm to remove soil that is known to be affected by hazardous substances (i.e., with levels exceeding the thresholds approved for the project). In addition, the project sponsor has requested oversight from DTSC, which would approve a remedial plan that would set forth procedures for soil removal and other remediation and/or mitigation for the project site. DTSC's oversight would be provided through the state's Voluntary Oversight Program and/or the CLRRA. DTSC would be the lead oversight agency for implementation of the remedial plan. In response to this comment and to clarify the requirements of the remedial plan, the text of Mitigation Measure HAZ-2b on page 4.7-23 in Section 4.7, *Hazards and Hazardous Materials*, of the Draft EIR will be revised as follows (new text is underlined):⁷

Mitigation Measure HAZ-2b: Engineering Controls on the Project Site

Prior to the issuance of grading permits, the project sponsor shall demonstrate compliance with the recommendations in the *Step-out Soil Gas Assessment* (ENGEO 2013) to address vapor intrusion concerns. Implementation of engineering controls shall be implemented on the project site in accordance with the *Step-out Soil Gas Assessment* (ENGEO 2013) to address the presence of elevated VOCs (in areas where TCE and PCE concentrations exceeded residential screening levels). Engineering controls shall be installed to redirect and or minimize VOC concentrations. Said engineering controls shall consist of controls that allow for passive ventilation and discharge of the vapors into the atmosphere.

Specific engineering controls may include, but will not be limited to:

- Installation of subsurface migration barriers; and/or
- Inclusion of ventilated foundations for any proposed structures; and/or
- The use and implementation of an alternative method or structural design that would address soil gas releases and reduce the potential for hazardous conditions to occur.

⁷ Revisions to Mitigation Measure HAZ-2b are also included in Response 3.7. Refer to Chapter 4, *Corrections and Additions to the Draft EIR*, for the revised version of this mitigation measure that incorporates all changes from these responses.

Appropriate engineering control system(s) shall be determined with concurrence, approval, and oversight of the DTSC and RWQCB, and shall be dependent on future building placement and construction. If monitoring or extraction wells remain in place at the time that engineering controls are submitted to DTSC and RWQCB, the engineering controls shall ensure that building placement will not interfere with operation of the well facilities, or that DTSC and/or RWQCB have approved any required modifications to the well facilities.

Prior to project grading, the project sponsor shall enter into a voluntary oversight agreement (or CLRRRA agreement) with DTSC and submit for DTSC's approval a remedial plan for the evaluation and removal of known hazardous substances present in soil. The remedial plan shall specify risk-based screening levels appropriate for future residential use (in the residential areas) and for commercial use (in the commercial areas). The project sponsor shall implement the approved remedial plan under DTSC's oversight. Confirmation sampling shall document that all soil exceeding the screening levels has been successfully removed. Prior to commencement of project grading, DTSC shall have issued written concurrence that known soil contamination has been satisfactorily addressed. The project sponsor shall provide a copy of DTSC's written concurrence to the City.

This clarification does not change the analysis or conclusions provided in the Draft EIR.

DTSC is responsible for overseeing the evaluation and cleanup of contaminated properties throughout the state of California. A DTSC team, including a project manager and subject matter experts, such as geologists, toxicologists, risk assessors, and other scientists, will oversee the remedial scope of work for the project site. DTSC's Human and Ecological Risk Office (HERO) provides expertise regarding chemical toxicity and the risk imposed by chemicals on human and ecological receptors. HERO staff members develop and publish risk-based guidance and screening levels for soil, groundwater, and air, based on toxicity criteria and exposure assumptions that are scientifically rigorous and considered to be among the most conservative standards in the country. It should also be noted that ACWD has been overseeing certain remedial work at the Air Liquide parcel within the project site, and the San Francisco Bay RWQCB has been overseeing remediation associated with the McKesson site. As the commenter notes, pollutants originating from the McKesson site have affected soil vapor and groundwater at the project site. Thus, the aforementioned agencies are expected to have continued involvement in certain aspects of remedial work at the project site.

Soil, soil vapor, and groundwater at the project site have been investigated previously. The results of those investigations will be submitted to DTSC for review. Pursuant to Mitigation Measure HAZ-2b, DTSC will be consulted regarding any additional site investigations and risk evaluations needed to delineate the scope of work in the remedial plan. In addition to use of default screening levels and guidance published by HERO, certain risk-based target concentrations may be derived for use as screening levels, based on exposure assumptions and toxicity criteria approved by DTSC and sufficiently conservative for residential land use (i.e., for the residential portion of the project). Soil that exceeds the applicable screening levels would be excavated for off-site disposal at a facility that is licensed to accept such waste. Post-excavation confirmation sampling would be used to confirm that all known affected soil has been successfully removed. Compliance with Mitigation Measure HAZ-2b, as revised (the applicable Mitigation Measure HAZ-2b revisions are summarized above), would ensure that the removal of soil that is known to be contaminated would be completed prior to commencement of project grading, which would prevent any exposure to hazardous constituents that might otherwise be dispersed from the soil when disturbed. Mitigation Measure HAZ-2a

contains protocols for responding to affected soil that was unknown prior to site development and first encountered during grading or other site development activities. Compliance with Mitigation Measure HAZ-2a would ensure that potential risks associated with contamination in on-site soil would be less than significant.

Response 3.2

The commenter states that several sites in Union City have contributed to groundwater contamination in the area. One of those sites was formerly owned and operated by McKesson Corporation. Although McKesson has conducted a decades-long environmental investigation and remediation program to address contamination from the site, volatile organic compounds (VOCs) remain in groundwater and soil vapor at concentrations that may affect the proposed project.

As noted in Mitigation Measure HAZ-2a in Section 4.7.2.4, *Impacts and Mitigation Measures*, on page 4.7-21 of the Draft EIR, prior to the earthwork and grading phase of the project, the project sponsor would engage a qualified environmental engineering firm to remove soil that is known to be affected by hazardous substances (i.e., with levels exceeding the thresholds approved for the project). In addition, the revisions to Mitigation Measure HAZ-2b in Response 3.2 require the project sponsor to consult with DTSC regarding any additional site investigations and risk evaluations needed to delineate the scope of work in the site-specific remedial plan pertaining to potential soil, soil vapor, and groundwater impacts. The project sponsor will implement the approved remedial plan under DTSC oversight.

Response 3.3

The commenter states that VOCs remain in groundwater at and downgradient of the site, at concentrations in excess of standards for drinking water. As stated on page 3-13 in Chapter 3, *Project Description*, of the Draft EIR, the project site is served by the Alameda County Water District (ACWD). As described on page 3-24 of the Draft EIR, potable water for the project would be conveyed to the project site via connections to existing water mains in the vicinity of the project site. As stated on page 4.8-16 in Chapter 4.8, *Hydrology and Water Quality*, groundwater supplies would not be used during construction activities or operation.

Response 3.4

The commenter states that VOCs are also present in soil vapor, at concentrations that exceed residential and commercial screening levels published by the RWQCB. A 2019 Phase II investigation conducted on-site detected toxaphene in shallow soil, benzene in soil vapor in the northern portion of the project area, and perchloroethylene (PCE), trichloroethylene (TCE) and 1,1-dichloroethylene (DCE) in soil vapor in the northeastern portion of the project area.⁸

As noted in Mitigation Measure HAZ-2a in Section 4.7.2.4, *Impacts and Mitigation Measures*, on page 4.7-21 of the Draft EIR, prior to the earthwork and grading phase of the project, the project sponsor would engage a qualified environmental engineering firm to remove soil that is known to be affected by hazardous substances (i.e., with levels exceeding the thresholds approved for the project). In addition, the revisions to Mitigation Measure HAZ-2b in Response 3.1 require the project sponsor to consult with DTSC regarding any additional site investigations and risk evaluations needed to

⁸ RPS Group, Inc. *Union City Phase II Investigation Report: Shelton and R&S Parcels, 33945 Seventh Street, Union City, California*. October 2019.

delineate the scope of work in the site-specific remedial plan pertaining to potential soil, soil vapor and groundwater impacts. The project sponsor will implement the approved remedial plan under DTSC oversight.

Response 3.5

Because the 2019 Phase II investigation detected VOCs in soil vapor, the commenter states that vapor intrusion may occur if buildings are placed over areas where VOCs are present in groundwater and soil gas. The commenter also states that the project may exacerbate existing vapor intrusion risks in the project area.

The commenter notes that VOCs in soil vapor (soil gas) in the subsurface can migrate into overlying structures, thereby exposing future occupants to VOCs in indoor air. Off-gassing from groundwater that migrated from the McKesson site is the predominant source of VOCs in soil vapor. The evaluation and mitigation of impacts related to vapor intrusion have been the subject of considerable research by DTSC scientists and other technical experts. DTSC will be providing oversight regarding this issue for the project site. In 2011, DTSC published a comprehensive guidance document titled *Vapor Intrusion Mitigation Advisory* that described procedures for evaluating and mitigating potential vapor intrusion impacts. In 2020, DTSC published a proposed update titled *Supplemental Guidance: Screening and Evaluating Vapor Intrusion*. Although not formally enacted, the stricter standards set forth in the supplemental guidance are now being integrated into the evaluation of potential vapor intrusion risks at sites, such as the subject site, where VOCs are present in soil vapor. DTSC oversees vapor mitigation at hundreds of sites in California. Most of the vapor mitigation measures detailed by the commenter are typical for sites overseen by DTSC. Mitigation Measure HAZ-2b requires the project sponsor to conduct additional soil vapor sampling and analysis to delineate the extent of VOCs in soil vapor that exceed risk-based screening levels.

Response 3.6

The commenter states that the Draft EIR does not mention the 2019 Phase II investigation by the RPS Group, which detected PCE, 1,1-DCE, and benzene, along with VOCs and TCEs, in excess of environmental screening levels.

As stated in Response 3.1, the revisions to Mitigation Measure HAZ-2b require the project sponsor to remove soil that is known to be affected by hazardous substances (i.e., with levels exceeding the thresholds approved for the project). In addition, the revisions to Mitigation Measure HAZ-2b in Response 3.1 require the project sponsor to consult with DTSC regarding any additional site investigations and risk evaluations needed to delineate the scope of work in the site-specific remedial plan pertaining to potential soil, soil vapor, and groundwater impacts. Furthermore, prior to construction activities, confirmation sampling shall document that all soil that exceeds environmental screening levels has been successfully removed.

Response 3.7

The commenter states that the proposed mitigation is inadequate with respect to addressing potential hazards associated with vapor intrusion. Passive ventilation is not adequate for preventing the migration of VOCs into indoor air. The required mitigation should include active ventilation (if necessary). The commenter also states that the project owner has not included provisions for testing, monitoring, or maintaining the vapor intrusion measures.

The commenter is correct in stating that, based on historical soil vapor data, it is assumed that engineered controls (vapor mitigation systems) will be required to mitigate the effects of potential vapor intrusion in some areas of the project site. In response to this comment and to clarify DTSC's requirements to ensure the long-term efficacy of the vapor mitigation systems, Mitigation Measure HAZ-2b on page 4.7-23 in Section 4.7, *Hazards and Hazardous Materials*, of the Draft EIR will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):⁹

Mitigation Measure HAZ-2b: Engineering Controls on the Project Site

Prior to the issuance of grading permits, the project sponsor shall demonstrate compliance with the recommendations in the *Step-out Soil Gas Assessment* (ENGEO 2013) to address vapor intrusion concerns. Implementation of engineering controls shall be implemented on the project site in accordance with the *Step-out Soil Gas Assessment* (ENGEO 2013) to address the presence of elevated VOCs (in areas where TCE and PCE concentrations exceeded residential screening levels). Engineering controls shall be installed to redirect and or minimize VOC concentrations. Said engineering controls shall consist of controls that allow for passive ventilation and discharge of the vapors into the atmosphere.

Specific engineering controls may include, but will not be limited to:

- Installation of subsurface migration barriers; and/or
- Inclusion of ventilated foundations for any proposed structures; and/or
- The use and implementation of an alternative method or structural design that would address soil gas releases and reduce the potential for hazardous conditions to occur.

Appropriate engineering control system(s) shall be determined with concurrence, approval, and oversight of the DTSC and RWQCB, ~~and shall be dependent on future building placement and construction.~~ (as applicable) and shall be dependent on future building placement and construction. Any DTSC requirements for long-term operation, monitoring, and maintenance (OMM) of the vapor mitigation systems shall be complied with, including any requirements to secure the cost of such OMM with a financial security instrument such as a performance bond. Any land use covenant required by DTSC to ensure the long-term efficacy of the vapor mitigation systems shall be recorded in property title records by the project sponsor or successor owner. If monitoring or extraction wells remain in place at the time that engineering controls are submitted to DTSC and RWQCB, ~~the placement of such engineering controls shall ensure that building placement will either not interfere with operation of the well facilities; or that DTSC and/or RWQCB shall have approved any required modifications to the well facilities.~~

This revision does not change the analysis or conclusions provided in the Draft EIR. DTSC's written concurrence, signifying the agency's approval of the vapor mitigation design and installation, must be obtained prior to issuance of a certificate of occupancy and any long-term monitoring and maintenance requirements must be complied with. Compliance with Mitigation Measure HAZ-2b would ensure that any risk posed by residual VOCs in soil vapor would be mitigated to levels that would be less than significant.

⁹ Revisions to Mitigation Measure HAZ-2b are also included in Response 3.1. Refer to Chapter 4, *Corrections and Additions to the Draft EIR*, for the revised version of this mitigation measure that incorporates all changes from these responses.



Jared Blumenfeld
Secretary for
Environmental Protection



Department of Toxic Substances Control

Meredith Williams, Ph.D.
Director
700 Heinz Avenue
Berkeley, California 94710-2721

Letter 4



Gavin Newsom
Governor

December 21, 2020

Carmela Campbell
Economic and Community Development Director
City of Union City
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NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE STATION EAST RESIDENTIAL/MIXED USE PROJECT

Dear Ms. Campbell:

Thank you for the opportunity to comment on the Draft *Environmental Impact Report (EIR) for the Station East Residential/Mixed Use Project* (Project) SCH# 2020039032. The Project includes development of 26.5 acres for mixed residential and commercial use in the City of Union City.

As you may be aware, the California Department of Toxic Substances Control (DTSC) oversees the cleanup of sites where hazardous substances have been released pursuant to the California Health and Safety Code, Division 20, Chapter 6.8. As a Responsible Agency, DTSC is submitting comments to ensure that the environmental documentation prepared for this project under the California Environmental Quality Act (CEQA) adequately addresses activities pertaining to releases of hazardous substances. DTSC has the following comments:

1) Executive Summary

- a. Page ES1-15 – The citation of the State Water Resources Control Board's (SWRCB) Environmental Screening Levels (ESLs) is just one set of possible screening levels that apply to the site. Other screening levels may also apply, such as DTSC's Human and Ecological Risk Office - Human Health Risk Assessment Notes or USEPA's Regional Screening Levels (RSLs); clarify that.
- b. Page ES-15 – Discussion was presented that local regulatory oversight may occur by the SWRCB as the lead agency. DTSC is (or is also) performing regulatory oversight as it relates to hazardous substances at the Site; clarify that.

4.1

4.2

4.3

- c. Page ES-20 – Impact AQ-4 states that the project would not have air emissions, so mitigation would not be required. That is too prescriptive, for example during site grading, dust monitoring may be required, or contaminated soil might be encountered that would require cleanup. Therefore, air monitoring is anticipated to be required during grading operations; if applicable, clarify that.

4.4

- 2) Hazards and Hazardous Materials section- starting at Page 4.7-1 at the bottom of the page, a 2019 All Appropriate Inquiries (AAI) report is discussed. DTSC has reviewed three DRAFT AAI reports for the Project, for designated Project Area 1, Project Area 2, and Project Area 3. DTSC also provided DRAFT agreements for Project Area 1 and Project Area 3 under the California Land Use and Revitalization Act (CLRRA) to the developer since the developer is interested in immunities afforded under CLRRA as a prospective purchaser. Under CLRRA, the prospective purchase is required to update AAI reports within 180 days of acquiring the property which will be necessary for Project Area 1 and Project Area 3. However, Project Area 2 was already purchased by the developer so it does not qualify for a CLRRA agreement. For Project Area 2, DTSC provided a DRAFT Standard Voluntary Agreement for development of Removal Action Workplan (RAW) to the developer. Following are DTSC's comments related to the AAI reports for Project Areas 1-3 (the comments for Project Area 2 are also provided to the extent that the information applies to development of a RAW)
 - a. *All Appropriate Inquiries Report Project 1 (Project Area 1)*, 700 Decoto Road, Union City:

The Department of Toxic Substances Control (DTSC) received the application for a California Land Reuse and Revitalization Act of 2004 (CLRRA)¹ Agreement, submitted by The Union City Project Owner, LLC dated July 15, 2019 for the assessment and remediation of the Project 1 (Project Area 1)(Site) located at 700 Decoto Road in Union City, Alameda County, California. The Site includes the former Air Gas manufacturing plant. Based on the application, the intention is to have the Site covered by the CLRRA agreement.

4.5

In order to enter into a CLRRA Agreement, The Union City Project Owner, LLC must demonstrate that it is eligible to do so as a "prospective purchaser", in accordance with Health and Safety Code sections 25395.91(a)(2) and 25395.69. Under an executed CLRRA Agreement, The Union City Project Owner, LLC shall qualify for the immunities afforded under CLRRA and DTSC shall be reimbursed for the oversight costs incurred by DTSC.

¹CLRRA was enacted by Assembly Bill No. 389, Montanez, on September 23, 2004, and extended and amended by Senate Bill 143, Cedillo on October 11, 2009. Assembly Bill No. 389 added Chapter 6.82 (commencing with Section 25395.60) and Chapter 6.83 (commencing with Section 25395.110) to Division 20 of the Health and Safety Code; Senate Bill No. 143 amended Section 25395.91.

In order to meet the "All Appropriate Inquiries" (AAI) requirement per Health and Safety Code section 25395.65, an AAI was conducted as described in the *All Appropriate Inquiries Report Project 1 (Project Area 1)* (AAI Report), prepared by RPS Group, Inc. dated October 2019 for the Property where the Site is located. Based on DTSC comments below, may request re-issuance of the Report for DTSC review.

DTSC has reviewed the Report to evaluate compliance with their Final Rule², set forth in Part 312 of Title 40 of the Code of Federal Regulations (40 CFR Part 312). DTSC has determined that the AAI Report contains the following deficiencies:

- 1) Some information relevant to the AAI review is included in appendices including a 2017 *Phase 1 Environmental Assessment Report* and *Phase 2 Environmental Assessment* however the information wasn't consistently brought forward to be included in the AAI Report. Some of the comments below identify deficiencies in the AAI Report related to information that may be included in the appendices. Where that occurs, the information should be summarized in the AAI Report with citations to where the information originated in the appendices.
- 2) Report Page 12 section 3.3 *Interviews and Agency Records* – this section cites two potential interviews; 1) an interview by the property owner's representative, Mr. Chad Beauchamp and 2) an attempt to obtain a written questionnaire from the representative of the prospective purchaser, The Union City Project Owner LLC. However both interviews appear to be incomplete. According to 40 CFR §312.23 (b), "Interviews with owners, operators, and occupants of the subject property must be conducted for the purposes of achieving the objectives and performance factors of 40 CFR §312.20 (e) and (f) which list numerous categories of inquiries (see code) which are commonly handled through written questionnaires. If adequate information cannot be obtained by interviews or questionnaires, the Report must include narratives describing why past interviewees and current occupants aforementioned were not interviewed. If interviews cannot be obtained, the significance of this data gap should be discussed in the Report. This topic was discussed on Page 32 section 9 paragraph 4 in the report limitations section however it should be updated to address the information requested above.
- 3) Page 22 section 5.3 – The discussion of waste generation focuses on current waste generation; add information which summarizes historical waste generation information that could have caused releases or threatened releases of hazardous substances as required by 40 CFR §312.20 (e)(1)(ii) and (iii).
- 4) In order to meet the requirements of 40 CFR §312.29, a prospective purchaser "must consider whether the purchase price of the subject property reasonably reflects the fair market value of the property, if the property were not contaminated."; add that information. This information may be included in the appendices.

²See 103(35)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. Sec. 9601(35)(B))

5) Appendix A Photographs -

- a. Each photograph should have captions and where potential issues related to environmental conditions are noted, those should be discussed in the body of the report. General descriptions of equipment should be provided especially as they might relate to the use of hazardous substances and identify contents of tanks.
- b. The photographs appear to cover the whole Site, only photographs of Area 1 of the site should be included.
- c. Page 11 – containers suspected of containing hazardous substances should be discussed
- d. Page 24 – cooling towers are associated with the potential use of corrosion inhibitors which may contain hexavalent chromium
- e. Page 64 – heating and cooling systems for the building should be discussed

6) An update to AAI Report is needed - According to 40 CFR §312.20, activities completed related to interviews, searches for environmental liens, reviews of governmental records, visual inspections of the facility and adjoining properties must be completed within 180 days prior to the date of acquisition of the property by the prospective purchaser. The update should discuss whether or not the previously collected information needs to be updated to include relevant changes in the condition of the property. However, this issue appears to be moot since the AAI report was prepared in October 2019 so it should be re-issued.

b. *All Appropriate Inquiries Report Project 2 (Project Area 2)*, 700 Decoto Road, Union City:

The Department of Toxic Substances Control (DTSC) received the application for a California Land Reuse and Revitalization Act of 2004 (CLRRA)³ Agreement, submitted by The Union City Project Owner, LLC dated July 15, 2019 for the assessment and remediation of the Project 2 (Project Area 2)(Site) located at 700 Decoto Road in Union City, Alameda County, California. The Site includes the former Air Gas manufacturing plant. Based on the application, the intention is to have the Site covered by the CLRRA agreement.

In order to enter into a CLRRA Agreement, The Union City Project Owner, LLC must demonstrate that it is eligible to do so as a “prospective purchaser”, in accordance with Health and Safety Code sections 25395.91(a)(2) and 25395.69. Under an executed CLRRA Agreement, The Union City Project Owner, LLC shall qualify for the immunities afforded under CLRRA and DTSC shall be reimbursed for the oversight costs incurred by DTSC.

³CLRRA was enacted by Assembly Bill No. 389, Montanez, on September 23, 2004, and extended and amended by Senate Bill 143, Cedillo on October 11, 2009. Assembly Bill No. 389 added Chapter 6.82 (commencing with Section 25395.60) and Chapter 6.83 (commencing with Section 25395.110) to Division 20 of the Health and Safety Code; Senate Bill No. 143 amended Section 25395.91.

In order to meet the "All Appropriate Inquiries" (AAI) requirement per Health and Safety Code section 25395.65, an AAI was conducted as described in the *All Appropriate Inquiries Report Project 2 (Project Area 2)* (Report), prepared by RPS Group, Inc. dated October 2019 for the Property where the Site is located. Based on DTSC comments below, may request appropriately updating the information for incorporation into a cleanup plan (RAW) for DTSC review.

DTSC has reviewed the Report to evaluate compliance with the AAI Final Rule⁴, set forth in Part 312 of Title 40 of the Code of Federal Regulations (40 CFR Part 312), and has determined that the Report contains the following deficiencies:

4.11
con't

- 1) Report Page 12 section 3.3 *Interviews and Agency Records* – this section cites an interview by the property owner representative, Mr. Chad Beauchamp however the findings of the interview or a questionnaire were not summarized or presented in a questionnaire. The Report states that an attempt to obtain a written questionnaire from the representative of the prospective purchaser, The Union City Project Owner LLC. However, the information is incomplete. According to 40 CFR §312.23(b), "Interviews with owners, operators, and occupants of the subject property must be conducted for the purposes of achieving the objectives and performance factors of 40 CFR §312.20 (e) and (f) which list numerous categories of inquiries (see code) which are commonly handled through written questionnaires. If adequate information cannot be obtained by interviews or questionnaires, the Report must include narratives describing why past interviewees and current occupants aforementioned were not interviewed. If interviews cannot be obtained, the significance of this data gap should be discussed in the Report.

4.12

- 2) Page 22 section 5.3 – The discussion of waste generation focuses on current waste generation; based on the database searches, add information which summarizes historical waste generation information that could have caused releases or threatened releases of hazardous substances as required by 40 CFR §312.20 (e)(1)(ii) and (iii).

4.13

- 3) In order to meet the requirements of 40 CFR §312.29, a prospective purchaser "must consider whether the purchase price of the subject property reasonably reflects the fair market value of the property, if the property were not contaminated."; add that information.

4.14

- 4) Update to AAI Report is Needed - According to 40 CFR §312.20, activities completed related to interviews, searches for environmental liens, reviews of governmental records, visual inspections of the facility and adjoining properties must be completed within 180 days prior to the date of acquisition of the property by the prospective purchaser. The update should discuss whether the previously collected information needs to be updated to include relevant changes in the

⁴See 103(35)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. Sec. 9601(35)(B))

4.14
con't

condition of the property. However, this issue appears to be moot since the AAI report was prepared in November 2019 so it should be re-issued.

c. *All Appropriate Inquiries Report Project 3 (Project Area 3)*, Located south of 7th Street, east of Decoto Road, and west of Bradford Way Union City:

The Department of Toxic Substances Control (DTSC) received the application for a California Land Reuse and Revitalization Act of 2004 (CLRRA)⁵ Agreement, submitted by The Union City Project Owner, LLC dated July 15, 2019 for the assessment and remediation of the Project 3 (Project Area 3) (Site) located south of 7th Street, east of Decoto Road, and west of Bradford Way and identified by the following Alameda County APNs: 87-21-5-2, 87-21-13-2, 87-21-4-2, 87-23-10, 87-23-13, and 87-23-14 in Union City, Alameda County, California. The Site includes the former Air Gas manufacturing plant. Based on the application, the intention is to have the Site covered by the CLRRA agreement.

In order to enter into a CLRRA Agreement, The Union City Project Owner, LLC must demonstrate that it is eligible to do so as a "prospective purchaser", in accordance with Health and Safety Code sections 25395.91(a)(2) and 25395.69. Under an executed CLRRA Agreement, The Union City Project Owner, LLC shall qualify for the immunities afforded under CLRRA and DTSC shall be reimbursed for the oversight costs incurred by DTSC.

4.15

In order to meet the "All Appropriate Inquiries" (AAI) requirement per Health and Safety Code section 25395.65, an AAI was conducted as described in the *All Appropriate Inquiries Report Project 3 (Project Area 3)* (Report), prepared by RPS Group, Inc. dated October 2019 for the Property where the Site is located. Based on DTSC comments below, DTSC may request reissuance of the Report for DTSC review.

DTSC has reviewed the Report to evaluate compliance with the AAI Final Rule⁶, set forth in Part 312 of Title 40 of the Code of Federal Regulations (40 CFR Part 312), and has determined that the Report contains the following deficiencies:

- 1) Report Page 13 section 3.3 *Interviews and Agency Records* – this section cites an interview by the property owner representative, Mr. Chad Beauchamp and states that the owners of other parcels were not available at the time of the site inspection. However, that information is inadequate. According to 40 CFR

⁵CLRRA was enacted by Assembly Bill No. 389, Montanez, on September 23, 2004, and extended and amended by Senate Bill 143, Cedillo on October 11, 2009. Assembly Bill No. 389 added Chapter 6.82 (commencing with Section 25395.60) and Chapter 6.83 (commencing with Section 25395.110) to Division 20 of the Health and Safety Code; Senate Bill No. 143 amended Section 25395.91.

⁶See 103(35)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. Sec. 9601(35)(B))

- 4.15
con't
- §312.23(b), "Interviews with owners, operators, and occupants of the subject property must be conducted for the purposes of achieving the objectives and performance factors of 40 CFR §312.20 (e) and (f) which list numerous categories of inquiries (see code) which are commonly handled through written questionnaires. If adequate information cannot be obtained by interviews or questionnaires, the Report must include narratives describing why past interviewees and current occupants aforementioned were not interviewed. If interviews cannot be obtained, the significance of this data gap should be discussed in the Report.
- 4.16
- 2) Page 24 section 5.3 – The discussion of waste generation focuses on current waste generation; based on the database searches, add information which summarizes historical waste generation information that could have caused releases or threatened releases of hazardous substances as required by 40 CFR §312.20 (e)(1)(ii)and (iii).
- 3) In order to meet the requirements of 40 CFR §312.29, a prospective purchaser "must consider whether the purchase price of the subject property reasonably reflects the fair market value of the property, if the property were not contaminated."; add that information.
- 4.17
- 4) Update to AAI Report is Needed - According to 40 CFR §312.20, activities completed related to interviews, searches for environmental liens, reviews of governmental records, visual inspections of the facility and adjoining properties must be completed within 180 days prior to the data of acquisition of the property by the prospective purchaser. The update should discuss whether or not the previously collected information needs to be updated to include relevant changes in the condition of the property. However, this issue appears to be moot since the AAI report was prepared in November 2019 so it should be re-issued.
- 4.18
- 3) Based on the historical usage of the properties and their possible conversion to residential use, DTSC recommends that soil sampling be conducted to determine whether hazardous substances are present at levels which would need to be addressed. If hazardous substances have been released, they will need to be addressed as part of this project. The remediation activities would then need to be addressed in the California Environmental Quality Act (CEQA) compliance document.
- 4.19
- 4) If the remediation activities include the need for soil excavation, the CEQA document should include: (1) an assessment of air impacts and health impacts associated with the excavation activities; (2) identification of any applicable local standards which may be exceeded by the excavation activities, including dust levels and noise; (3) transportation impacts from the removal or remedial activities; and (4) risk of upset should be there an accident at the site.

Ms. Carmela Campbell

December 21, 2020

Page 8 of 8

If you have any questions or would like to schedule a meeting, please contact me at thomas.price@dtsc.ca.gov. Thank you in advance for your cooperation in this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Price", with a long horizontal flourish extending to the right.

Tom Price – Project Manager
Site Mitigation and Restoration Program
Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, CA 94710

cc:

Governor's Office of Planning and Research
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3.5 Letter 4

Commenter: Tom Price, Project Manager, Site Mitigation and Restoration Program, Department of Toxic Substances Control

Date: December 21, 2020

Response 4.1

The commenter states that the State Water Resources Control Board's environmental screening levels represent just one set of possible screening levels that would be applicable at the site. Other screening levels may also apply. In response to this comment, the first paragraph of Mitigation Measure HAZ-2a on page 4.7-21 in Section 4.7, *Hazards and Hazardous Materials*, of the Draft EIR will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):¹⁰

Mitigation Measure HAZ-2a: Site Management Plan

Prior to issuance of a grading permit, the project sponsor shall retain the services of a qualified environmental engineering firm to prepare and implement, during site preparation and grading activities, a Site Management Plan (SMP). The SMP shall be designed to protect human health and the environment and include protocols, measures, and techniques for the proper handling, management, and disposition of affected soils found on the site and any areas of off-site work during site preparation and grading activities. The SMP shall also be designed to protect workers and off-site receptors during site activities and ensure the proper characterization, management, and/or disposal of contaminated environmental media that is above exceed applicable environmental screening levels (ESLs) established by the RWQCB, regional screening levels established by EPA, or other screening thresholds approved for the project. The SMP shall be prepared by a commercial environmental engineering firm with demonstrated expertise and experience in the preparation of SMPs and be stamped by an appropriately licensed professional. The SMP shall be submitted for City and outside agency review in conformance with DIPSA Specific Plan, Toxic and Hazardous Substances Policy 5, and implemented throughout all ground-disturbing work.

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 4.2

The commenter states that DTSC (potentially along with the RWQCB) is performing regulatory oversight as it relates to hazardous substances at the project site.

As discussed in Response 3.2, the project sponsor has applied for oversight by DTSC for site remediation through DTSC's Voluntary Oversight Program and/or CLRRRA. Although DTSC is likely to be the lead oversight agency for remedial work, ACWD has been overseeing certain remedial work at the Air Liquide parcel within the project site, and the San Francisco Bay RWQCB has been overseeing remediation associated with the McKesson site. Thus, those agencies are expected to have continued involvement in certain aspects of remedial work for the project site.

¹⁰ Revisions to Mitigation Measure HAZ-2a are also included in Responses 2.4, 2.8, 2.9, and 4.3. Refer to Chapter 4, *Corrections and Additions to the Draft EIR*, for the revised version of this mitigation measure that incorporates all changes from these responses.

Response 4.3

The commenter states that the discussion under Impact AQ-4 is too prescriptive. Air monitoring could be required during grading operations. In response to this comment, and to reflect the potential applicability of BAAQMD rules or other agency rules for monitoring and mitigating impacts concerning fugitive dust and VOCs emitted to the air during earthwork, the first paragraph of Mitigation Measure HAZ-2a on page 4.7-21 in Section 4.7, *Hazards and Hazardous Materials*, of the Draft EIR will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):¹¹

Mitigation Measure HAZ-2a: Site Management Plan

Prior to issuance of a grading permit, the project sponsor shall retain the services of a qualified environmental engineering firm to prepare and implement, during site preparation and grading activities, a Site Management Plan (SMP). The SMP shall be designed to protect human health and the environment and include protocols, measures, and techniques for the proper handling, management, and disposition of affected soils found on the site and any areas of off-site work during site preparation and grading activities. The SMP shall also be designed to protect workers and off-site receptors during site activities and ensure the proper characterization, management, and/or disposal of contaminated environmental media that is above applicable Environmental Screening Levels (ESLs). The environmental engineering firm shall determine the applicability of Bay Area Air Quality Management District (or other agency) rules for fugitive dust control and/or VOC emissions during earthwork, and the SMP shall provide compliance protocols to be adhered to, including air monitoring protocols, if required. The SMP shall be prepared by a commercial environmental engineering firm with demonstrated expertise and experience in the preparation of SMPs and be stamped by an appropriately licensed professional. The SMP shall be submitted for City and outside agency review in conformance with DIPSA Specific Plan, Toxic and Hazardous Substances Policy 5, and implemented throughout all ground-disturbing work.

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 4.4

The commenter states that DTSC has reviewed three draft All Appropriate Inquires (AAI) reports for the project (divided into PAs 1 through 3). The commenter also states that, under the CLRRRA, a prospective purchaser is required to update AAI reports within 180 days of acquiring a property, which will be necessary for PA 1 and PA 3. PA 2 did not qualify for a CLRRRA agreement. The commenter included comments related to the AAI reports for PAs 1 through 3, below. The response here under Response 4.4 and Responses 4.5 through 4.19 are all related to the aforementioned AAIs.

As discussed in Response 3.2, the project sponsor has submitted an application for DTSC oversight under the CLRRRA, a statutory program that grants certain immunity protections to eligible purchasers of eligible sites. As noted by the commenter, CLRRRA applicants submit an AAI report, among other documents, to establish eligibility for CLRRRA. Purchasers who do not meet the eligibility requirements for the CLRRRA may obtain DTSC oversight through the Voluntary Oversight Program.

¹¹ Revisions to Mitigation Measure HAZ-2a are also included in Responses 2.4, 2.8, 2.9, and 4.1. Refer to Chapter 4, *Corrections and Additions to the Draft EIR*, for the revised version of this mitigation measure that incorporates all changes from these responses.

The CEQA process, including publication of an EIR, is focused on informing decision-makers and the public about the potential environmental impacts of a proposed project and reducing the impacts to the extent feasible. The majority of comments submitted in DTSC's comment letter are not related to CEQA compliance but, instead, pertain to CLRRRA requirements. Because the project sponsor and DTSC are still in discussions regarding whether oversight will be through CLRRRA or the Voluntary Oversight Program, the proper forum for responding to issues raised by the commenter regarding AAI reports is a separate communication between DTSC and the project sponsor. The revisions to Mitigation Measure HAZ-2b in Response 3.1 require the project sponsor to consult with DTSC regarding any additional site investigations and risk evaluations needed to delineate the scope of work in the site-specific remedial plan pertaining to potential soil, soil vapor and groundwater impacts. The project sponsor will implement the approved remedial plan under DTSC oversight.

Response 4.5

Comments 4.5 through 4.10 are related to the contents in the AAI report for PA 1 (700 Decoto Road, Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.6

Comments 4.5 through 4.10 are related to the contents in the AAI report for PA 1 (700 Decoto Road, Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.7

Comments 4.5 through 4.10 are related to the contents in the AAI report for PA 1 (700 Decoto Road, Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.8

Comments 4.5 through 4.10 are related to the contents in the AAI report for PA 1 (700 Decoto Road, Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.9

Comments 4.5 through 4.10 are related to the contents in the AAI report for PA 1 (700 Decoto Road, Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.10

Comments 4.5 through 4.10 are related to the contents in the AAI report for PA 1 (700 Decoto Road, Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.11

Comments 4.11 through 4.14 are related to the contents in the AAI report for PA 2 (700 Decoto Road, Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.12

Comments 4.11 through 4.14 are related to the contents in the AAI report for PA 2 (700 Decoto Road, Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.13

Comments 4.11 through 4.14 are related to the contents in the AAI report for PA 2 (700 Decoto Road, Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.14

Comments 4.11 through 4.14 are related to the contents in the AAI report for PA 2 (700 Decoto Road, Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.15

Comments 4.15 through 4.19 are related to the contents in the AAI report PA 3 (located south of 7th Street, east of Decoto Road, and west of Bradford Way in Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.16

Comments 4.15 through 4.19 are related to the contents in the AAI report PA 3 (located south of 7th Street, east of Decoto Road, and west of Bradford Way in Union City). As previously mentioned under Response 4.4, the more appropriate forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.17

Comments 4.15 through 4.19 are related to the contents in the AAI report PA 3 (located south of 7th Street, east of Decoto Road, and west of Bradford Way in Union City). As previously mentioned under Response 4.4, the forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.18

Comments 4.15 through 4.19 are related to the contents in the AAI report PA 3 (located south of 7th Street, east of Decoto Road, and west of Bradford Way in Union City). As previously mentioned under Response 4.4, the forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.

Response 4.19

Comments 4.15 through 4.19 are related to the contents in the AAI report PA 3 (located south of 7th Street, east of Decoto Road, and west of Bradford Way in Union City). As previously mentioned under Response 4.4, the forum for responding to the issues raised by the commenter regarding the AAI report is a separate communication between DTSC and the project sponsor.



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Letter 5

December 21, 2020

Via Email

Carmela Campbell
City of Union City
Economic & Community Development
Department
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Telephone: (510) 675-5316
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Re: Draft Environmental Impact Report for the Station East Residential/Mixed Use Project (SCH No. 2020039032)

Dear Ms. Campbell:

I am writing on behalf of Laborers International Union of North America, Local Union No. 304 and its members living and working in and around Union City (collectively "LIUNA") regarding the Draft Environmental Impact Report ("DEIR") prepared for the Station East Residential/Mixed Use Project, located in Union City, California (SCH No. 2020039032) ("Project"). After reviewing the DEIR, together with our consultants, it is clear that the document fails to comply with the California Environmental Quality Act ("CEQA"), and fails to adequately analyze and mitigate the Project's significant environmental impacts.

Certified Industrial Hygienist, Francis "Bud" Offermann, PE, CIH, has conducted a review of the Project, the EIR and relevant appendices regarding the Project's indoor air emissions. Mr. Offerman concludes that it is likely that the Project will expose future residents of the Project as well as employees of the commercial spaces to significant impacts related to indoor air quality, and in particular, emissions of the cancer-causing chemical formaldehyde. This impact has not been addressed in the DEIR. Mr. Offermann is one of the world's leading experts on indoor air quality and has published extensively on the topic. Mr. Offerman's expert comments and CV are attached hereto as Exhibit A.

Ecologist Shawn Smallwood, Ph.D also reviewed the Project and DEIR, and visited the Project site to make observations about biological resources. Dr. Smallwood concluded that the Project will have significant impacts on biological resources that have not been adequately analyzed or mitigated. Dr. Smallwood's comments and CV are attached hereto as Exhibit B.

In addition, environmental consulting firm Soil/Water/Air Protection Enterprise

(“SWAPE”) has reviewed the Project and the DEIR, and concludes that the Project will have significant air quality and greenhouse gas impacts that are not disclosed. SWAPE’s expert comments, as well as the CVs of the SWAPE’s consultants are attached hereto as Exhibit C.

A revised EIR should be prepared prior to Project approval to analyze all impacts and require implementation of all feasible mitigation measures, as described more fully below.

I. PROJECT DESCRIPTION

The Project is a mixed-use development on a 26.5-acre site located between 7th Street and the Niles subdivision Union Pacific Railroad (“UPRR”) tracks in the city of Union City. The Project proposes development of up to 1.8 million square feet, including up to 974 new residential units (apartments, condominiums, and townhome style condominiums) and approximately 30,800 square feet of commercial space. The Project site would include 11 planning areas with 33 residential buildings and one community building. Most of the new buildings would be between three and five stories tall. The Project would include three community parks, one tot lot, and one outdoor amphitheater throughout the site. The Project would include 1,791 parking spaces for vehicles, and 458 parking spaces for bicycles.

The site is currently occupied by existing vacant industrial uses, surface parking lots, asphalt or concrete storage lots, a roadway, railroad spur improvements, and vacant unpaved areas, including agricultural, annual grassland, landscaped, and ruderal areas. The Project includes demolition of the existing buildings and parking lots.

II. LEGAL BACKGROUND

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report (“EIR”) (except in certain limited circumstances). See, e.g., Pub. Res. Code § 21100.) The EIR is the very heart of CEQA. *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652. “The ‘foremost principle’ in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.” *Communities for a Better Env’t v. Cal. Resources Agency* (2002) 103 Cal. App. 4th 98, 109.

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. 14 Cal. Code Regs. (“CEQA Guidelines”) § 15002(a)(1). “Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR ‘protects not only the environment but also informed self-government.’” *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564. The EIR has been described as “an environmental ‘alarm bell’ whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.” *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm’rs.* (2001) 91 Cal. App. 4th 1344, 1354 (“Berkeley Jets”); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

Second, CEQA requires public agencies to avoid or reduce environmental damage when “feasible” by requiring “environmentally superior” alternatives and all feasible mitigation measures. CEQA Guidelines § 15002(a)(2) and (3); see also, *Berkeley Jets*, *supra*, 91 Cal. App. 4th at pp. 1344, 1354; *Citizens of Goleta Valley*, 52 Cal.3d at 564. The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to “identify ways that environmental damage can be avoided or significantly reduced.” CEQA Guidelines §15002(a)(2). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that any unavoidable significant effects on the environment are “acceptable due to overriding concerns.” Pub. Res. Code § 21081; 14 Cal.Code Regs. § 15092(b)(2)(A) & (B). The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 732.

While the courts review an EIR using an “abuse of discretion” standard, “the reviewing court is not to ‘uncritically rely on every study or analysis presented by a project proponent in support of its position. A ‘clearly inadequate or unsupported study is entitled to no judicial deference.’” *Berkeley Jets*, 91 Cal. App. 4th at p. 1355 (quoting *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 391 409, fn. 12). As the court stated in *Berkeley Jets*, “A prejudicial abuse of discretion occurs ‘if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process.’” *Id.* More recently, the California Supreme Court has emphasized that:

When reviewing whether a discussion is sufficient to satisfy CEQA, a court must be satisfied that the EIR (1) includes sufficient detail to enable those who did not participate in its preparation to understand and to consider meaningfully the issues the proposed project raises [citation omitted], and (2) makes a reasonable effort to substantively connect a project's air quality impacts to likely health consequences.

Sierra Club v. Cty. of Fresno (2018) 6 Cal.5th 502, 510 (2018) (citing *Laurel Heights Improvement Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 405). “Whether or not the alleged inadequacy is the complete omission of a required discussion or a patently inadequate one-paragraph discussion devoid of analysis, the reviewing court must decide whether the EIR serves its purpose as an informational document.” *Sierra Club v. Cty. of Fresno*, 6 Cal.5th at 516. Although an agency has discretion to decide the manner of discussing potentially significant effects in an EIR, “a reviewing court must determine whether the discussion of a potentially significant effect is sufficient or insufficient, i.e., whether the EIR comports with its intended function of including ‘detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.’” *Id.* (citing *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1197). As the Court emphasized:

[W]hether a description of an environmental impact is insufficient because it lacks analysis or omits the magnitude of the impact is not a substantial evidence question. A conclusory discussion of an environmental impact that an EIR deems significant can be determined by a court to be inadequate as an informational document without reference to substantial evidence.

Sierra Club v. Cty. of Fresno, 6 Cal.5th at 514.

III. ANALYSIS

A. THERE IS SUBSTANTIAL EVIDENCE THAT THE PROJECT WILL HAVE SIGNIFICANT INDOOR AIR QUALITY IMPACTS.

Certified Industrial Hygienist, Francis “Bud” Offermann, PE, CIH, has conducted a review of the proposed Project and relevant documents regarding the Project’s indoor air emissions. Indoor Environmental Engineering Comments (November 28, 2020) (Exhibit A). Mr. Offermann concludes that it is likely that the Project will expose residents of the Project to significant impacts related to indoor air quality, and in particular, emissions of the cancer-causing chemical formaldehyde. Mr. Offermann is a leading expert on indoor air quality and has published extensively on the topic. *See* attached CV.

Mr. Offermann explains that many composite wood products used in modern apartment home construction contain formaldehyde-based glues which off-gas formaldehyde over a very long time period. He states, “The primary source of formaldehyde indoors is composite wood products manufactured with urea-formaldehyde resins, such as plywood, medium density fiberboard, and particleboard. These materials are commonly used in building construction for flooring, cabinetry, baseboards, window shades, interior doors, and window and door trims.” Offermann, p. 3.

Formaldehyde is a known human carcinogen and a toxic air contaminant (“TAC”). Mr. Offermann states that there is a fair argument that future residents of the Project will be exposed to a cancer risk from formaldehyde of approximately 120 per million, assuming all materials are compliant with the California Air Resources Board’s formaldehyde airborne toxics control measure. *Id.*, p. 3. This is 12 times the Bay Area Air Quality Management District’s (“BAAQMD”) CEQA significance threshold for airborne cancer risk for TACs of 10 new cases of cancer per million people. Mr. Offermann concludes that these significant environmental impacts must be analyzed in the EIR and mitigation measures should be imposed to reduce the risk of formaldehyde exposure. *Id.*, p. 4-5.

In addition, employees of the Project’s commercial spaces are expected to have significant exposure to formaldehyde from building materials and furnishings commonly found in offices. Offermann, p. 4. Mr. Offermann calculates that employees are expected to have an increased cancer risk of 17.7 per million, which exceeds the 10 per million threshold of significance. *Id.*

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Mr. Offermann also notes that the high cancer risk that may be posed by the Project's indoor air emissions likely will be exacerbated by the additional cancer risk that exists as a result of the Project's location near roadways with moderate to high traffic (i.e. Decoto Road, Cheeves Way, Station Way, Mission Boulevard, etc.) and the high levels of PM 2.5 already present in the ambient air. Offermann, pp. 9-11. The San Francisco Bay Area Air Basin is already in State and Federal non-attainment for PM 2.5. *Id.* at 11. No analysis has been conducted of the significant cumulative health impacts that will result to future residents of the Project.

Mr. Offermann identifies mitigation measures that are available to reduce these significant health risks, including the preferred mitigation measure that would require the applicant use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins in the buildings' interiors. *Id.* at 11-13. Proposed mitigation also includes the installation of air filters and outdoor air ventilation. *Id.*

The City has a duty to investigate issues relating to a project's potential environmental impacts, especially those issues raised by an expert's comments. *See Cty. Sanitation Dist. No. 2 v. Cty. of Kern*, (2005) 127 Cal.App.4th 1544, 1597-98 ("under CEQA, the lead agency bears a burden to investigate potential environmental impacts"). In addition to assessing the Project's potential health impacts to residents, Mr. Offermann identifies the investigatory path that the City should be following in developing an EIR to more precisely evaluate the Projects' future formaldehyde emissions and establishing mitigation measures that reduce the cancer risk below the BAAQMD level. *Id.*, pp. 5-10. Such an analysis would be similar in form to the air quality modeling and traffic modeling typically conducted as part of a CEQA review.

The failure to address the project's formaldehyde emissions is contrary to the California Supreme Court's decision in *California Building Industry Ass'n v. Bay Area Air Quality Mgmt. Dist.* (2015) 62 Cal.4th 369, 386 ("CBIA"). At issue in *CBIA* was whether the Air District could enact CEQA guidelines that advised lead agencies that they must analyze the impacts of adjacent environmental conditions on a project. The Supreme Court held that CEQA does not generally require lead agencies to consider the environment's effects on a project. *CBIA*, 62 Cal.4th at 800-801. However, to the extent a project may exacerbate existing adverse environmental conditions at or near a project site, those would still have to be considered pursuant to CEQA. *Id.* at 801 ("CEQA calls upon an agency to evaluate existing conditions in order to assess whether a project could exacerbate hazards that are already present"). In so holding, the Court expressly held that CEQA's statutory language required lead agencies to disclose and analyze "impacts on **a project's users or residents** that arise **from the project's effects** on the environment." *Id.* at 800 (emphasis added).

The carcinogenic formaldehyde emissions identified by Mr. Offermann are not an existing environmental condition. Those emissions to the air will be from the Project. Future residents and employees will be users of the Project. Currently, there is presumably little if any formaldehyde emissions at the site. Once the project is built, emissions will begin at levels that pose significant health risks. Rather than excusing the City from addressing the impacts of

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carcinogens emitted into the indoor air from the project, the Supreme Court in *CBIA* expressly finds that this type of effect by the project on the environment and a “project’s users and residents” must be addressed in the CEQA process.

The Supreme Court’s reasoning is well-grounded in CEQA’s statutory language. CEQA expressly includes a project’s effects on human beings as an effect on the environment that must be addressed in an environmental review. “Section 21083(b)(3)’s express language, for example, requires a finding of a ‘significant effect on the environment’ (§ 21083(b)) whenever the ‘environmental effects of a project will cause substantial adverse effects *on human beings*, either directly or indirectly.’” *CBIA*, 62 Cal.4th at 800 (emphasis in original). Likewise, “the Legislature has made clear—in declarations accompanying CEQA’s enactment—that public health and safety are of great importance in the statutory scheme.” *Id.*, citing e.g., §§ 21000, subds. (b), (c), (d), (g), 21001, subds. (b), (d). It goes without saying that the hundreds of future residents of the Project are human beings and the health and safety of those individuals is as important to CEQA’s safeguards as nearby residents currently living and working near the project site.

Mr. Offermann’s expert comments constitute substantial evidence of a fair argument of a significant environmental impact to future users of the project, but this potentially significant impact is not analyzed in the EIR. A revised EIR must be prepared to disclose and mitigate those impacts.

B. THE PROJECT WILL HAVE SIGNIFICANT IMPACTS ON BIOLOGICAL RESOURCES THAT THE DEIR FAILS TO ADEQUATELY ANALYZE AND MITIGATE.

1. The EIR fails to establish a baseline for special status species at the Project site.

Establishing an accurate baseline is the sine qua non to adequately analyzing and mitigating the significant environmental impacts of the Project. (See CEQA Guidelines, § 15125(a); *Save Our Peninsula*, 87 Cal.App.4th at 121-123.) Unfortunately, the EIR’s failure to investigate and identify the occurrences of sensitive biological resources at the Project site results in a skewed baseline. Such a skewed baseline ultimately “mislead(s) the public” by engendering inaccurate analyses of environmental impacts, mitigation measures and cumulative impacts for biological resources. (See *San Joaquin Raptor Rescue Center*, 149 Cal.App.4th at 656; *Woodward Park Homeowners*, 150 Cal.App.4th at 708-711.)

Not a single survey was conducted to determine the presence or absence of special status species. Dr. Smallwood points out the absence of any detection level surveys that would provide actual evidence of the presence or absence of species at the Project site. Smallwood, p. 11. Based on his expert opinion and his observations at the Project site, there has been no effort to detect whether or not numerous sensitive species are in harm’s way from the Project. “Without detection surveys, absence determinations are unfounded and the DEIR insufficiently

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informative.” *Id.* Without any surveys of the site for special status speices, the EIR has not established a baseline supported by substantial evidence.

Aside from the lack of surveys for special status species, Dr. Smallwood concludes that the biological analysis conducted as part of the EIR is incomplete and inadequate for a number of other reasons. First, the EIR made no use of eBird, iNaturalist, or any resources other than the California Natural Diversity Data Base in making its determinations regarding species’ likely use of the Project Site. *Id.* at 6. These data bases are regularly used by experts to inform them of sightings of wildlife in a particular area. Dr. Smallwood did check these databases and included a list of the special status species of vertebrate wildlife seen and reported in the Project area. *Id.* The list includes 52 special-status species of birds and 9 species of bats for 61 special-status species of wildlife. *Id.* The EIR only addresses 11 of these species, which amounts to only 18% of the species that have been sighted and reported near the Project site. In addition, the City concluded that 2 have no potential to occur, even though there are records of them occurring very close to the Project site. *Id.* Based on these facts, Dr. Smallwood concluded that the City’s “assessment of species occurrence likelihoods is grossly deficient. The EIR should be revised.” *Id.*

Second, for those species that the City did evaluate for potential to occur, the conclusions reached are not supported by substantial evidence. For example, the EIR concludes that, because of the disturbed nature of the site, special status species are “not anticipated to occur, with the exception of roosting bats, and migratory nesting birds.” DEIR, 4.2-15. It also concludes that because nesting habitat is unavailable, “golden eagle, peregrine falcon, northern harrier, and tricolored blackbird would not be affected.” *Id.* But Dr. Smallwood explains that this justification for dismissing the occurrence likelihood of these species is unfounded. He explains, “Special-status species have often been detected in disturbed environments; after all, just about every place on Earth has been disturbed by anthropogenic activity to some level. If special-status species did not make use of disturbed environments, how could they persist?” Smallwood, p. 6.

Moreover, the City’s claim that lack of nesting habitat makes unlikely to occurrence of special status species fails to acknowledge foraging habitat. Smallwood, p. 10. Dr. Smallwood explains, “All of a species’ habitat is of critical importance to the species regardless of where breeding sites are located. After all, no matter where a species breeds, the species cannot breed successfully without having found safe stop-over habitat during migration and sufficient forage preceding and during the breeding season.” *Id.*

Dr. Smallwood visited the site on December 5, 2020. Smallwood, p. 1. In total, Dr. Smallwood observed 21 species during his brief site visit. *Id.* at 1-5. In fact, just after arriving at the Project site, Dr. Smallwood observed a peregrine falcon, which is listed as an endangered species under the California Endangered Species Act. *Id.* at 1. Photograph 1, below is the Peregrine falcon observed by Dr. Smallwood. *Id.* at 2. His findings demonstrate the inadequacy of the supposed analysis that was done in support of the EIR.

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Photo 1. *Peregrine falcon, a California Endangered species, on a transmission tower on the west side of the project site, 5 December 2020. Photograph taken by Shawn Smallwood.*



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By failing to conduct any surveys and disregarding the absence of key species from the project site, ignoring numerous other species likely to be present, the EIR fails to establish and otherwise skews the entire biological resources baseline for the Project. This entire section should be redone, starting with properly timed, truly focused, detection surveys of the entire site and a complete list of special status bird species that may be adversely affected by the Project.

2. The DEIR's conclusion that the Project will not impact wildlife movement is not supported by substantial evidence.

The DEIR improperly dismisses the Project's potential on wildlife movement because the site is "not within or adjacent to any known regional wildlife movement corridors" and "no natural corridors connect to the site." EIR, 2.4-20. This conclusion is based on the improper assumption that interference with wildlife movement depends on whether it occurs within a movement corridor.

5.4

In looking only for impacts to wildlife corridors, the City relies on a false CEQA standard. A project will have a significant biological impact if it would "[i]nterfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites." CEQA Guidelines, App. G. As Dr. Smallwood explains:

A site such as the proposed project site is critically important for wildlife movement because it composes an increasingly diminishing expanse of open space within a growing expanse of anthropogenic uses, forcing more species of volant wildlife to use the site as

stopover and staging habitat during migration, dispersal, and home range patrol (Warnock 2010, Taylor et al. 2011, Runge et al. 2014). The project would cut wildlife off from stopover and staging habitat, forcing volant wildlife to travel even farther between remaining patches of stopover habitat

Smallwood, p. 13.

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Moreover, even if the DEIR could rely on the presence of a movement corridor as the determining factor, the DEIR's conclusion would still be wrong because the Project site is located within the most prominent migratory route of western North America, known as the Pacific Flyway. Smallwood, p. 12. "Millions of birds migrate along the Pacific Flyway, many of them right over and across the project site." *Id.*

Because of its reliance on a false CEQA standard for determining impacts on wildlife movement, the EIR contains no evidence to support the conclusion that the Project will not have a significant impact on wildlife movement. In contrast, Dr. Smallwood determined that the Project will interfere with wildlife movement in the region. *Id.* at 13.

3. The Project will have a significant impact on wildlife from vehicle collisions because of increased traffic generated by the Project.

Dr. Smallwood is clear: "the project-generated traffic would cause substantial, significant impacts to wildlife." Smallwood, p. 14. According to the DEIR, the Project will generate an average of 8,080 new daily vehicle trips. DEIR, 4.14-28. Yet neither the DEIR does not analyze the impacts on wildlife that will be caused by this massive increase in traffic on roadways servicing the Project. Vehicle collisions have the potential to impact dozens of special-status species that occur at or near the Project site. "This type of impact extends far beyond the structural footprint of the project, affecting species that more often occur elsewhere than at the project site." Smallwood, p. 13.

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Vehicle collisions with special-status species is not a minor issue, but rather results in the death of millions of species each year. Dr. Smallwood explains:

In Canada, 3,562 birds were estimated killed per 100 km of road per year (Bishop and Brogan 2013), and the US estimate of avian mortality on roads is 2,200 to 8,405 deaths per 100 km per year, or 89 million to 340 million total per year (Loss et al. 2014). Local impacts can be more intense than nationally.

In a recent study of traffic-caused wildlife mortality, investigators found 1,275 carcasses of 49 species of mammals, birds, amphibians and reptiles over 15 months of searches along a 2.5 mile stretch of Vasco Road in Contra Costa County, California (Mendelsohn et al. 2009). Using carcass detection trials performed on land immediately adjacent to the traffic mortality study (Brown et al. 2016) to adjust the found fatalities for the proportion of fatalities not found due to scavenger removal and searcher error, the estimated traffic-caused fatalities was 12,187. This fatality estimate translates to a rate of 3,900 wild

animals per mile per year. In terms comparable to the national estimates, the estimates from the Mendelsohn et al. (2009) study would translate to 243,740 animals killed per 100 km of road per year, or 29 times that of Loss et al.'s (2014) upper bound estimate and 68 times the Canadian estimate. An analysis is needed of whether increased traffic generated by the project would similarly result in local impacts on wildlife.

Smallwood, p. 13.

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Based on a number of studies, and the 8,080 new daily trips caused by the Project, Dr. Smallwood predicts that approximately 208 birds will be killed by front-end blunt force collision with Project-related vehicles each year. *Id.* at 14. Many more deaths and injuries to vertebrate wildlife will also be caused by crushing under tires, broadside impacts to flying birds, and turbulence-induced injuries and deaths above, to the side, and in the wake of traveling trucks. *Id.*

Dr. Smallwood's expert comments constitute substantial evidence that the Project may have a significant impact on biological resources as a result of vehicle collisions stemming from Project-generated traffic. Since this impact was not analyzed in the EIR, a revised EIR is required to analyze and mitigate this significant impact.

4. The EIR fails to analyze the Project's impact on lost breeding capacity.

5.6
The DEIR does not analyze the lost breeding capacity of birds that would result from the removal of 68 existing trees. Smallwood, p. 12. While habitat loss results in the immediate decline in birds and other animals, it also results in a permeant loss of productive capacity. *Id.*, Dr. Smallwood cites two studies show that total bird nesting densities were between 32.8 and 35.8 nests per acre, for an average of 34.3 nests per acre. *Id.* Given that the Project site supports 68 trees, but no wetlands and only small patches of grasslands, Dr. Smallwood estimates the site's breeding capacity at a third of what was reported in the two cited studies, or about 11.4 nest sites per acre. *Id.*

When multiplied by the Project's 26.5 acres of habitat that would be lost, Dr. Smallwood predicts a loss of 302 bird nests per year. *Id.* This loss would repeat each year. *Id.* Based on an average of 2.9 fledglings per nest, the Project would prevent generating 876 new birds per year. *Id.* Dr. Smallwood concludes that this loss would be substantial and would qualify as a significant impact that was not addressed in the EIR. An revised EIR is required to fully analyze the Project's impact on lost breeding capacity, and to mitigate that impact.

5. The Project will have a significant impact on birds from window collisions, which the EIR fails to address.

5.7
According to Dr. Smallwood, the Project will have a significant impact on birds as a result of window collisions. The City has not analyzed or mitigated these potential impacts to special-species birds.

The DEIR does not include any figures on how much glass would be used on the

Project's building facades, which is important in analyzing impacts to wildlife from window collisions. Renderings of the Project that are available only include a portions of the Project. Of the renderings that were available, glass windows is a prominent feature. Smallwood, p. 15. However, since the renderings only gave a partial picture of the extent of glass use, Dr. Smallwood relied on an average extent of glass per square foot of mixed-use floorspace at Bay Area projects, as described in their CEQA review documents. *Id.* Using this average, Dr. Smallwood calculated that the Project would use at least 26,119 square meters of glass on the building facades. *Id.* "This glass would kill many birds." *Id.*

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Dr. Smallwood reviewed a number of studies in order to calculate the number of bird collisions that would occur annually as a result of the Project. Smallwood, p. 15-16. According to his calculations, each m² of glass would result in 0.077 bird deaths per year. *Id.* Based on the estimated 26,119 m² of glass windows and the 0.077 bird deaths per m² of glass windows, Dr. Smallwood estimates that the project could result in 1,909 bird deaths per year. *Id.* This death rate would continue every year until the structure were either renovated to reduce bird collisions, or until the buildings were demolished. *Id.* at 16. Dr. Smallwood points out that "The vast majority of these deaths would be of birds protected under the Migratory Bird Treaty Act and under the recently revised California Fish and Game Code section 3513, thus causing significant unmitigated impacts." *Id.* These bird deaths constitute a significant impact that must be analyzed *Id.*

6. The DEIR fails to analyze the impacts of house cats on wildlife.

5.8
The residential component of the Project will likely introduce house cats to the Project site, yet the EIR does not address this issue. Smallwood, p. 16. Dr. Smallwood explains that house cats are one of the largest sources of avian mortality in North America. *Id.* In addition, cats contribute to downstream loading of *Toxoplasma gondii*, which is a "parasite that can infect virtually all warm-blooded animals, but the only known definitive hosts are cats." *Id.* The DEIR must analyze this potentially significant impact.

7. The DEIR's analysis of the Project's cumulative impacts on biological resources violates CEQA.

The EIR concludes that the Project would not result in cumulatively significant impacts to biological resources. DEIR, 4.2-22. This conclusion is based on improper reasoning, and an analysis that is not in compliance with CEQA.

5.9
The EIR must discuss cumulative impacts, and mitigate significant cumulative impacts. 14 CCR § 15130(a). This requirement flows from CEQA section 21083, which requires a finding that a project may have a significant effect on the environment if "the possible effects of a project are individually limited but cumulatively considerable. . . . 'Cumulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." A legally adequate cumulative impacts analysis views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable

probable future projects whose impacts might compound or interrelate with those of the project at hand.

While acknowledging Project-related biological impacts, the EIR's analysis of fails to analyze the Project's potentially significant cumulative biological impacts. Instead, the DEIR concludes, without evidence, that:

With implementation of Mitigation Measures BIO-1a, BIO-1b, and BIO-C, the project's contribution to cumulative biological resources impacts would be less than cumulatively considerable. Therefore, the cumulative impact would be *less than significant with mitigation*.

DEIR, 4.2-22.

This cumulative impact analysis is based on flawed logic. The conclusion that the Project will have no cumulative impact because each individual impact has been reduced to a less-than-significant level relies on the exact argument CEQA's cumulative impact analysis is meant to protect against. Dr. Smallwood points out that: This conclusion implies that cumulative impacts are merely residual impacts of mitigation that was incompletely effective. If cumulative effects were indeed merely residual impacts of inadequate mitigation, then CEQA would require an inadequate mitigation analysis instead of a cumulative impacts analysis. ." Smallwood, p. 16. The entire purpose of the cumulative impact analysis is to prevent the situation where mitigation occurs to address project-specific impacts, without looking at the bigger picture. This argument, applied over and over again, has resulted in major environmental damage, and is a major reason why CEQA was enacted. As the court stated in *CBE v. CRA*, 103 Cal. App. 4th at 114:

Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact.

A new cumulative impacts analysis is needed for the Project that complies with CEQA's requirement to look at the Project's environmental impact, combined with the impacts of other past, current, and probable future projects. A revised EIR must be prepared to fully analyze the Project's cumulative impacts.

8. The DEIR's mitigation measures for biological resources are inadequate.

Dr. Smallwood points out that numerous mitigation measures meant to reduce impacts to biological resources are inadequate. First, Mitigation Measure BIO-1a proposes preconstruction surveys for burrowing owls as a measure to mitigate impacts on burrowing owls. However, "doing so without first performing detection surveys would be inconsistent with CDFW's (2012) survey guidelines." Smallwood, p. 16. Detection surveys are needed to inform decisions about

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project impacts and appropriate mitigation measures. *Id.* “Without detection surveys, an absence determination following a preconstruction survey would lack foundation and would risk unmitigated harm to burrowing owls.” *Id.* Therefore, without more, preconstruction surveys are not adequate to mitigate impacts on burrowing owls to a less than significant level. This same reasoning applies to Mitigation measure Bio-1b, which calls for preconstruction bat surveys and nesting bird surveys. *Id.* at 17. Detection surveys should be conducted now, which then form the basis of impact determinations and mitigation measures.

Moreover, while preconstruction surveys do need to be performed, preconstruction surveys are not intended to reduce project impacts, let alone reduce them to less than significant levels. Preconstruction surveys do nothing to replace the ecological space lost by Project construction that wildlife uses for breeding, foraging, and stopovers. Without a discussion of how the Project’s significant impacts will be mitigated beyond just conducting take-avoidance preconstruction surveys, the Project’s biological impacts have not been mitigated.

C. THE DEIR FAILS TO ADEQUATELY ANALYZE AND MITIGATE AIR QUALITY IMPACTS.

1. The DEIR relies on an unsubstantiated input parameters to estimate project emissions.

5.11

To calculate the Project’s expected emissions during operation and construction, the EIR Relies on the California Emissions Estimator Model Version CalEEMod.2016.3.2 (“CalEEMod”). This model relies on recommended default values for on-site specific information related to a number of factors. SWAPE reviewed the Project’s CalEEMod output files and found that the values input into the model were unsubstantiated or inconsistent with information provided in the DEIR. SWAPE explains each of these in its letter. *See* SWAPE pp. 1- This results in an underestimation of the Project’s emissions. As a result, the Project may have a significant air quality impacts and an EIR is required to properly analyze these potential impacts.

2. There is substantial evidence that the Project may have a significant air quality impact.

5.12

SWAPE prepared an updated version of the CalEEMod model using the corrected input parameters. SWAPE, p. 11. The updated model indicates that the Project’s Phase 1 construction-related emissions of ROG/VOC and NOx exceed the Bay Area Air Quality Management District’s (“BAAQMD”) threshold of significance. *Id.* SWAPE determined ROG emissions would be 927.6 lbs/day and NOx emissions would be 80.63 lbs/day, both of which exceed the 54 lbs/day threshold of significance. *Id.* at 12. Similarly, the Project’s Phase 2 construction-related emissions of ROG/VOC will be 374.35 lbs/day, which also exceeds the 54 lbs/day threshold. *Id.* Project operations will also emit pollutants at levels that exceed the BAAQMD’s threshold of significance. For both Phase 1 and complete operation, emissions of ROG/VOC, NOx, PM10, and PM2.5 will all exceed the threshold of significance. *Id.* The EIR must be revised to disclose and mitigate these significant impacts.

3. There is substantial evidence that the Project may have a significant health risk impact.

The DEIR concluded that the Project would result in a less-than-significant health risk impact from diesel particulate matter emissions. SWAPE explains that this determination is incorrect. First, the Health Risk Assessment (“HRA”) prepared by the City relied on the unsubstantiated an inaccurate input parameters discussed by SWAPE.

Second, the DEIR’s HRA fails to analyze the cancer risk posed to existing, off-site receptors as a result of Project operation. SWAPE, p. 14. Instead, the HRA conducted by the City includes only an analysis for on-site receptors as a result of a stationary source. This method was incorrect. SWAPE explains that this is incorrect because it fails to account for the 8,080 daily vehicle trips generated by Project operation, which will result in additional exhaust, which would cause exposure to nearby sensitive receptors to emissions (p. 4.14-28). *Id.* “By failing to prepare an HRA for Project operation, the FEIR is inconsistent with recommendations set forth by the Office of Environmental Health and Hazard Assessment’s (“OEHHA”) most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*, as relied upon by the FEIR (p. 4.1-20)” SWAPE, p. 14.

SWAPE conducted a screening-level HRA in order to demonstrate the potential risk posed by Project construction and operation to nearby sensitive receptors. SWAPE, pp. 15-18. SWAPE’s HRA corrected the errors in the CalEEMod model described above. Based on the HRA, SWAPE concludes that the Project’s construction and operational diesel particulate matter emissions may result in a significant health risk impacts that was not analyzed or mitigated in the EIR. *Id.*

According to the HRA, the Project will result in an excess cancer risk to children of 22 in one million. SWAPE, p. 17. The excess cancer risk over the course of a residential lifetime (30 years) would be 35.04 in one million. *Id.* Both exceed the BAAQMD threshold of significance of 10 excess cancers per one million people. Accordingly, each of these risks is a significant impact that must be analyzed in the EIR.

D. CONTRARY TO THE EIR’S CONCLUSION, THE PROJECT WILL HAVE A SIGNIFICANT GREENHOUSE GAS IMPACT.

1. The IS/MND’s GHG analysis violates CEQA.

The DEIR’s justifications and conclusion that the Project’s GHG impacts are less-than-significant violate CEQA for a number of reasons. The EIR first improperly concludes that the Project will not have a significant greenhouse gas (“GHG”) impact because the Project will be consistent with AB 32, SB32, SB 375, EO-S-3005, EO B-55-18, Plan Bay Area, Title 24, California’s SLCP Reduction Strategy, LCFS, and the City’s own General Plan. EIR (collectively, “GHG laws and policies”). The EIR’s

reasoning is flawed because none of these GHG laws and policies meet the criteria for an officially adopted GHG reduction program, commonly referred to as a Climate Action Plan (“CAP”), for use as a threshold of significance for GHG emissions. SWAPE, p. 19.

As CEQA Guideline section 15064.4(b)(3) makes clear, a qualified CAP “must be adopted by the relevant public agency through a public review process,” and, as explained by CEQA Guideline section 15183.5(b)(1), the CAP should include:

- (1) **Inventory:** Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities (e.g., projects) within a defined geographic area (e.g., lead agency jurisdiction);
- (2) **Establish GHG Reduction Goal:** Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
- (3) **Analyze Project Types:** Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;
- (4) **Craft Performance Based Mitigation Measures:** Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
- (5) **Monitoring:** Establish a mechanism to monitor the CAP progress toward achieving said level and to require amendment if the plan is not achieving specified levels; and

As SWAPE explains, “[c]ollectiveley, the above-listed features tie qualitative measures to quantitative results, which in turn become binding via proper monitoring and enforcement by the jurisdiction—all resulting in real GHG reductions for the jurisdiction as a whole, and substantial evidence demonstrating that a project’s incremental contribution is not cumulatively considerable.” *Id.* at 20. None of the GHG laws and policies referenced in the EIR meet these requirements. As a result, compliance with the GHG laws and policies does not, on its own, demonstrate that the Project will not have a significant GHG impact. *Id.*

The City also relies on the Project’s consistency with the City’s CAP in order to find the Project’s GHG impact to be less than significant. EIR, 4.6-23 to 24. But this justification also fails because, although it is a valid CAP under CEQA, the City’s CAP does not address post-2020 emissions. EIR, 4.6-24. Since the Project will not be operational until after 2020, the CAP has no bearing on the significance of the Project’s emissions beyond 2020. *Id.* at 20-21.

2. The Project will have a significant GHG impact.

The DEIR estimates that the Project would generate approximately 12,205 MT CO₂e/year. EIR, 4.6-19, Table 4.6-4. However, after quantifying the Project’s annual GHG emissions, the EIR never compares the estimated emissions to a quantitative threshold of

significance. Instead, the EIR relies on the City's outdated CAP and the GHG laws and regulations discussed above.

The EIR's GHG analysis cites to AEP's *Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*. This document includes a "2030 Land Use Efficiency Threshold" of 2.6 MT CO₂e/SP/year for project with a horizon year beyond 2020. *Id.* at 21. The AEP guidance explains:

Once the state has a full plan for 2030 (which is expected in 2017), and then a project with a horizon between 2021 and 2030 should be evaluated based on a threshold using the 2030 target. A more conservative approach would be to apply a 2030 threshold based on SB 32 for any project with a horizon between 2021 and 2030 regardless of the status of the Scoping Plan Update.

When compared to this threshold, even relying on the EIR's own unsubstantiated input parameters, the Project would result in a significant GHG impact. SWAPE, p. 22. SWAPE divided the Project's total GHG emissions of 12,205 MT CO₂e/year by a service population of 2,520 people (2,445 residents and 75 employees), which amounts to 4.84 MT CO₂e/SP/year. *Id.*

DEIR Service Population Efficiency	
Project Phase	Proposed Project (MT CO ₂ e/year)
Total	12,205
Service Population	2,520
Service Population Efficiency	4.84
Threshold	2.6
Exceed?	Yes

This exceeds the recommended 2030 Land Use Efficiency Threshold" of 2.6 MT CO₂e/SP/year. As a result, SWAPE concludes that the Project will have a significant GHG impact. This impact must be disclosed, analyzed, and mitigated in a revised EIR. SWAPE's comments include a number of feasible mitigation measures that could reduce the Project's GHG emissions that should be considered.

IV. CONCLUSION

For the foregoing reasons, LIUNA requests the City decline to recommend approval of the Project and instead require preparation of a revised EIR that conforms with CEQA, as described above.

Sincerely,



Rebecca L. Davis

3.6 Letter 5¹²

Commenter: Rebecca L. Davis, Lozeau Drury, LLP

Date: December 21, 2020

Response 5.1

The comment letter and supporting memorandum from Mr. Francis Offermann claims that the project will expose future residents at the site to significant impacts related to indoor air quality, particularly emissions of the cancer-causing chemical formaldehyde. Formaldehyde in building materials is regulated by the California Air Resources Board (CARB) through its Phase II Airborne Toxic Control Measures (ATCMs). In its 2007 rulemaking, CARB noted that Phase II ATCMs would reduce risks, but that cancer risk would still be well over 10 per million, even after implementation of the ATCMs. CARB has since determined an acceptable level of exposure through its Phase II ATCMs. CARB's program is the certified functional equivalent of CEQA.

The assertion of a significant impact from project operations because of the use of particular construction materials is incorrect. The project would comply with CALGreen (California Code of Regulations [CCR], Part 11)—specifically, Section 4.504.5, Composite Wood Products, which specifies that products such as hardwood, plywood, particleboard, and medium-density fiberboard must meet the requirements for formaldehyde specified in CARB's ATCMs (17 CCR 93120 et seq.). The 2019 CALGreen building code does not allow formaldehyde-based resins or ultra-low-emitting formaldehyde resins to be added and requires documentation of compliance with CARB's ATCMs. This impact would be less than significant. No mitigation is required.

Response 5.2

The commenter states that the EIR fails to establish baseline conditions for special-status species. Specifically, the commenter states that the inclusion of species for analysis was done without conducting presence/absence surveys, adding that the analysis is inadequate for not searching the eBird and/or iNaturalist databases and not including any special-status species from those lists. The commenter alluded to the EIR relying on the California Natural Diversity Database (CNDDB) for making determinations "regarding species' likely use of the project site."

Section 4.2.1.1 of the Draft EIR details the steps taken to establish the project site's baseline conditions. This includes descriptions of land cover types, which were informed by an April 15, 2019, site visit by a qualified biologist to assess land cover and habitat types. The section also notes that baseline conditions were established through queries of several databases to determine if any special-status species have the potential to exist in the project vicinity. The databases reviewed included the California Department of Fish and Wildlife (CDFW) CNDDB, the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation database, and the California Native Plant Society Inventory of Rare and Endangered Vascular Plants of California.

As discussed in Draft EIR Sections 3.3.3 and 4.2.1.1, land uses within the project site consist of industrial buildings, surface parking, asphalt or concrete storage lots, a roadway, railroad spur, and

¹² Due to the length of Letter 5, the portion of the letter with issues that have been assigned a number is included on the preceding pages. The remainder of Letter 5, which includes Exhibits A, B, and C, is included at the end of this chapter.

an agricultural field. As described in Section 3.3.2 and visible in Figure 3-2 of the Draft EIR, land uses surrounding the project site include industrial, agricultural, mixed-use commercial, and residential uses.

As stated on page 4.2-7, Appendix 4.2-2 lists the special-status plant and wildlife species with the potential to occur on the project site, along with a discussion of their geographic distribution and general habitats; the rationale behind the determination of potential to occur is also included. To determine the potential to occur, existing conditions at the project site, including habitat conditions; existing conditions surrounding the project site; information gathered from online database queries, including the locations of occurrences; information gathered from the project site survey; and known species information (e.g., distribution and habitat) were considered.

Considering the disturbed nature of the site, which, according to a review of aerial imagery (i.e., Google Earth), has been in industrial and agricultural use since at least 1993, and the fact the site is surrounded predominantly by industrial and residential development, the assessment of baseline conditions presented in the Draft EIR was adequate for analyzing impacts on biological resources. There is no requirement under CEQA to conduct presence/absence surveys to assess a project's effects on biological resources, although such surveys do support an analysis when a project has the potential to result in significant impacts on biological resources. However, considering the current and historic land uses and land cover types within the project site, the assessment of habitat suitability for special-status species presented both in Appendix 4.2-2 and Section 4.2 of the Draft EIR was reasonably adequate for assessing impacts on the special-status species considered.

Regarding the comment regarding not searching the user-generated eBird and iNaturalist databases when determining species for analysis, although these can be informative sources and are periodically used in environmental analyses, there is no requirement to search the databases to conduct a reasonably adequate analysis for an EIR, especially considering the existing conditions. However, Appendix 4.2-2 has been revised to include the 13 additional special-status species that appear in Mr. Smallwood's letter, as well as CDFW's November 2020 Special Animals List, and have known ranges that overlap the study area, according to range maps in CDFW's California Wildlife Habitat Relationships.¹³ Those species from CDFW's Special Animals List designated as species of special concern that have known ranges that overlap the study area were not included in the Draft EIR due to an error in editing. Eleven of the species in Mr. Smallwood's letter, which is attached to the Lozeau Drury comment letter, do not occur on CDFW's Special Animals List and thus were not included, along with several other species that do not have overlapping ranges, as defined by CDFW.

The 13 species added to Appendix 4.2-2 were eliminated from consideration because of their "low" potential for occurrence on the project site; therefore, the effects analysis in Section 4.2.2 and the impacts and mitigation measures in Section 4.2.2.4 do not require revision. In response to this comment, Table 1 in Appendix 4.2-2 of the Draft EIR will be revised as shown on the following pages (new text is underlined). This revision does not change the analysis or conclusions provided in the Draft EIR.

¹³ California Department of Fish and Wildlife. n.d. *California Wildlife Habitat Relationship, Life History, and Range*. Available: <https://wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. Accessed January 20, 2021.

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
Birds					
<u>American white pelican</u> <u><i>Pelecanus erythrorhynchos</i></u>	<u>-/-/SSC</u>	<u>In California, breeds in northeast part of the state.</u> <u>Confined mainly to the Klamath Basin in the northeast part of the state where they currently breed regularly at Sheepy Lake; the Lower Klamath National Wildlife Refuge, Siskiyou County; and Clear Lake National Wildlife Refuge, Modoc County.</u> <u>Winters mainly along coast; in shallow, protected bays and estuaries; and in large lakes in warm climates.</u>	<u>Breeds on isolated islands in freshwater lakes; forages in shallow water in inland marshes, along lake or river edges, and in wetlands, commonly 30 miles or more from the nesting islands.</u> <u>Associated with aquatic habitat.</u>	<u>Low</u>	<u>Project site is outside the known nesting range for the species. No nesting habitat (i.e., islands) or foraging habitat (i.e., aquatic areas) present on-site. No CNDDDB records within 5 miles of the project.</u>
<u>Bald eagle</u> <u><i>Haliaeetus leucocephalus</i></u>	<u>-/-/SSC</u>	<u>Breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity Counties.</u> <u>Large wintering population in Klamath Basin and select locations in Southern California.</u>	<u>Associated with aquatic habitats (i.e., coastal areas, rivers, lakes, reservoirs).</u> <u>Uses large bodies of water or flowing rivers with adjacent snags and perches for foraging. Nests in large trees with open branches near permanent water sources.</u>	<u>Low</u>	<u>No nesting habitat (i.e., large trees near water sources) or foraging habitat (i.e., aquatic areas) present on-site. No CNDDDB records within 5 miles of the project.</u>
<u>Loggerhead shrike (nesting)</u> <u><i>Lanius ludovicianus</i></u>	<u>-/-/SSC</u>	<u>Occurs year-round throughout California, except for the heavily forested higher mountains in the northwest and the higher areas in the deserts. The</u>	<u>Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches; occurs only rarely in heavily urbanized areas but often found in open</u>	<u>Low</u>	<u>Although suitable nesting (i.e., trees) and foraging habitats (i.e., grasslands and agricultural fields) are present on-site, the species is not anticipated</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
		<u>breeding range spans much of lowland California; the winter range includes most lowland areas south of Glenn County.</u>	<u>cropland.¹⁴ Nests in isolated shrubs and trees as well as the woodland/scrub edges of open habitats; forages in grasslands, agricultural fields, and low scrub habitats.</u>		<u>because the project site is within a heavily urbanized area that lacks a connection to natural corridors and open spaces. Also, high-quality nesting and foraging habitats are available less than 1 mile to the east. No CNDDB records within 5 miles of the project.</u>
<u>Long-eared owl</u> <u><i>Asio otus</i></u>	<u>-/-/SSC</u>	<u>Permanent resident east of the Cascade Range from Placer County north to the Oregon border and east of the Sierra Nevada from Alpine County to Inyo County. Scattered breeding populations along the coast and in southeastern California. Winters throughout the Central Valley and southeastern California.</u>	<u>Nests in abandoned nests of crows, hawks, or magpies, usually in dense riparian stands of willows, cottonwoods, live oaks, or conifers that are open or adjacent to grasslands, meadows, or shrub lands; key habitat components are a dense cover, suitable nest platforms, and open foraging areas.</u>	<u>Low</u>	<u>No suitable nesting habitat (i.e., dense stands of trees) with nearby high-quality foraging habitat (i.e., open grasslands, meadows, or shrub lands) is present within the project site. Grassland on-site is marginal habitat because of its small size, 2 acres, and not open because infrastructure is located on three sides. No CNDDB records within 5 miles of the project.</u>

¹⁴ Ibid.

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
<u>Olive-sided flycatcher (nesting)</u> <u><i>Contopus cooperi</i></u>	<u>-/-/SSC</u>	<u>Breeds mostly in the boreal forest and western coniferous forests, from sea level to more than 10,000 feet (in Rockies). In California, found in forests of spruce, fir, Douglas-fir, hemlock, western red cedar, and tamarack or larch; in Southern California and northern Baja California, inhabits mostly pine forest.</u>	<u>Nests in openings or edges of forest in relation to meadows, rivers and streams, partially logged areas, recent burns, beaver ponds, bogs, and muskegs. Presence of dead or dying trees important to nesting sites. Rarely found in deep, closed forest.</u>	<u>Low</u>	<u>No nesting habitat (i.e., forest) present on project site. No CNDDB record within 5 miles of the project.</u>
<u>Yellow-breasted chat (nesting)</u> <u><i>Icteria virens</i></u>	<u>-/-/SSC</u>	<u>Breeding range includes the northern Sacramento Valley, Cascade Range, Sierra Nevada foothills, northwestern California, most of the Coast Ranges, the Colorado River, and other scattered sites. Breeding range is thought to be approximately 35% of its historical range, with breeding yellow-breasted chats now rare or absent in much of the Central Valley.</u>	<u>Nests and forages in riparian thickets of willow or other brushy tangles near water with a thick understory in riparian woodland.</u>	<u>Low</u>	<u>No nesting and foraging habitat (i.e., riparian) present on-site. No CNDDB records within 5 miles of the project.</u>
<u>Yellow-headed blackbird (nesting)</u> <u><i>Xanthocephalus xanthocephalus</i></u>	<u>-/-/SSC</u>	<u>Breeds east of the Cascade Range and in the Sierra Nevada, the Central Valley, portions of the Coast Ranges, and in Southern</u>	<u>Nests in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds.</u>	<u>Low</u>	<u>No nesting habitat (i.e., freshwater emergent wetlands with dense vegetation and deep water) present on-site. No CNDDB</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
		<u>California in the Imperial and Colorado River Valleys. Migrates south to winter; some winter in the southern Central Valley and in Imperial Valley.</u>			<u>records within 5 miles of the project.</u>
<u>Yellow warbler (nesting)</u> <u><i>Setophaga petechia</i></u>	<u>-/-/SSC</u>	<u>Range includes coastal areas, Northern California, and the Sierra Nevada below approximately 7,000 feet; mostly extirpated from the southern Sacramento and San Joaquin Valleys. However, nesting territories have been recorded in the San Joaquin Wildlife Refuge.</u>	<u>Nests and forages in early successional riparian habitats.</u>	<u>Low</u>	<u>No nesting and foraging habitat (i.e., riparian) present on-site. No CNDDB records within 5 miles of the project.</u>
Mammals					
<u>Fringed myotis</u> <u><i>Myotis thysanodes</i></u>	<u>-/-/SSC, WBWH-H</u>	<u>Throughout California, except in the southern desert regions and Central Valley.</u>	<u>In a wide variety of habitats: optimal habitats are pinyon-juniper, valley foothill hardwood, and hardwood conifer. Uses caves, mines, buildings, or crevices for maternity colonies and roosts.</u>	<u>Low</u>	<u>No optimal habitat (i.e., pinyon-juniper, valley foothill hardwood, and hardwood conifer) present on-site. Buildings on-site could be used for roosting. No CNDDB records within 5 miles of the project.</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
<u>Long-eared myotis</u> <i>Myotis evotis</i>	<u>-/-/SSC, WBWH-M</u>	<u>Coastal and mountainous regions throughout California.</u>	<u>Found in all brush, woodland, and forest habitats from sea level to about 9,000 feet.</u> <u>Prefers coniferous woodlands and forests. Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.</u>	<u>Low</u>	<u>No optimal habitat (i.e., woodlands and forests) present on-site. Buildings and trees on-site could be used for roosting. No CNDDDB records within 5 miles of the project.</u>
<u>Long-legged myotis</u> <i>Myotis volans</i>	<u>-/-/SSC, WBWH-H</u>	<u>Common in California, occurring in coastal ranges from Oregon to Mexico, the Cascades/Sierra Nevada to Southern California, most of the Great Basin region, and in several Mojave Desert mountain ranges. Absent only from the Central Valley; the Colorado and Mojave Deserts, except in mountain ranges; and eastern Lassen and Modoc Counties. Although records range from sea level to 11,400 feet, most common above 4,000 feet.</u>	<u>Most common in coniferous forests but also occurs seasonally in riparian and desert habitats. Uses abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark, and hollows within snags as summer day roosts; caves and mine tunnels used as hibernacula.</u>	<u>Low</u>	<u>No optimal habitat (i.e., forests) present on-site. Buildings and trees on-site could be used for roosting. No CNDDDB records within 5 miles of the project.</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
<u>Western red bat</u> <u><i>Lasirurs</i></u> <u><i>blossevillii</i></u>	<u>-/-/SSC,</u> <u>WBWH-H</u>	<u>Year-round range</u> <u>spans the Central</u> <u>Valley, Sierra</u> <u>Nevada foothills,</u> <u>Coast Ranges, and</u> <u>coastal areas,</u> <u>except in</u> <u>Humboldt and Del</u> <u>Norte Counties.</u>	<u>Mature riparian</u> <u>broadleaf forest in</u> <u>the Central Valley is</u> <u>primarily summer</u> <u>breeding habitat for</u> <u>the species in</u> <u>California, including</u> <u>females and pups;</u> <u>riverside orchards</u> <u>may also be used as</u> <u>maternity roosts.</u> <u>Roosts alone or in</u> <u>small family groups</u> <u>in tree foliage.</u> <u>occasionally shrubs;</u> <u>prefers habitat</u> <u>edges and mosaics</u> <u>with trees that are</u> <u>protected above and</u> <u>open below, with</u> <u>open areas for</u> <u>foraging, including</u> <u>grasslands, shrub</u> <u>lands, and open</u> <u>woodlands.</u> <u>Unsubstantiated</u> <u>records of</u> <u>hibernation in leaf</u> <u>litter during the</u> <u>winter.</u>	<u>Low</u>	<u>No preferred</u> <u>habitat (i.e.,</u> <u>riparian forest)</u> <u>present on-site.</u> <u>On-site trees</u> <u>could be used for</u> <u>roosting. No</u> <u>CNDDDB records</u> <u>within 5 miles of</u> <u>the project.</u>
<u>Yuma myotis</u> <u><i>Myotis</i></u> <u><i>yumanensis</i></u>	<u>-/-/SSC,</u> <u>WBWH-L</u>	<u>Common and</u> <u>widespread</u> <u>throughout</u> <u>California, from</u> <u>sea level to 11,000</u> <u>feet, excluding the</u> <u>Mojave and</u> <u>Colorado Desert</u> <u>regions.</u>	<u>Optimal habitats are</u> <u>open forests and</u> <u>woodlands with</u> <u>sources of water.</u> <u>Distribution is</u> <u>closely tied to</u> <u>bodies of water.</u> <u>Maternity colonies</u> <u>occur in caves,</u> <u>mines, buildings,</u> <u>bridges, or crevices.</u>	<u>Low</u>	<u>No optimal</u> <u>habitat (i.e.,</u> <u>forests or</u> <u>woodlands with</u> <u>nearby water</u> <u>sources) present</u> <u>on-site. Buildings</u> <u>and trees on-site</u> <u>could be used for</u> <u>roosting. No</u> <u>CNDDDB records</u> <u>within 5 miles of</u> <u>the project.</u>

Response 5.3

The commenter states that the conclusions reached for the species that the EIR did consider are not supported by substantial evidence. The commenter specifically calls attention to the EIR's determinations made for golden eagle, peregrine falcon, northern harrier, and tricolored blackbird. The commenter states that the section should be redone and that presence/absence surveys be conducted.

The EIR's determinations of potential for occurrence for golden eagle, peregrine falcon, northern harrier, and tricolored blackbird are found in Section 4.2.2.4 of the Draft EIR. In response to this comment and to clarify the Draft EIR's analysis and to amplify the evidence regarding the determinations for these species, Impact BIO-1 on page 4.2-15 in Section 4.2, *Biological Resources*, of the Draft EIR will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):

The project site is mostly developed with structures or agricultural land cover, surrounded by additional development and agricultural land cover, and void of sensitive natural communities, as shown in Figure 4.2-1. Special-status species are, therefore, not anticipated to occur, with the exception of roosting bats, and migratory nesting birds. ~~Although g~~Golden eagle, northern harrier, peregrine falcon, and tricolored blackbird may occasionally forage within or over the project site~~human presence and disturbance within and surrounding the project site reduce the likelihood of foraging. In addition, n~~Nesting habitat is absent for golden eagle, ~~and~~ peregrine falcon and considered marginal for tricolored blackbird and ~~marginal for~~ northern harrier.

Tricolored blackbirds nest in a wide variety of vegetation but are most often found in freshwater marsh, Himalayan blackberry copses, weedy fields dominated by milk thistle and/or mallow and mustard, and weed- infested grain fields (often triticale) adjacent to dairies.¹⁵ Because much native nesting habitat has been converted to agricultural uses or urbanized, and because stored grains provide an essentially limitless food resource, tricolored blackbirds have for several decades nested in large numbers in areas associated with dairies; the close association between nesting tricolored blackbirds and dairies has been especially pronounced since the 1990s, when many dairies moved from Southern California to the San Joaquin Valley.¹⁶ Only three presumed-extant CNDDDB occurrences for the species occur within 10 miles of the project site (#25, #27, and #995), the closest occurrence being 3.4 miles southwest of the site at Coyote Hills Regional Park; nesting was documented in areas with direct proximity to open freshwater sources (i.e., marsh and freshwater ponds) and did not occur in grain fields such as are present on the project site.¹⁷ The nearest freshwater source to the project site, excluding ephemeral riverine drainages, are the freshwater ponds located 0.65 mile northeast and southwest of the project site.¹⁸

Northern harriers breed and forage in a variety of open habitats that provide adequate vegetative cover, an abundance of suitable prey, and scattered perches, such as shrubs or fence

¹⁵ Meese, R. J. 2017. *Results of the 2017 Tricolored Blackbird Statewide Survey*. California Department of Fish and Wildlife, Sacramento, CA.

¹⁶ Ibid.

¹⁷ California Department of Fish and Wildlife. 2020. *California Natural Diversity Database*. RareFind Records Search for Tricolored Blackbird in Alameda County. RareFind Version 5. Available: <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed: January 19, 2021.

¹⁸ U.S. Fish and Wildlife Service. 2019. *National Wetland Inventory*. Updated: May 23, 2019. Available: <https://www.fws.gov/wetlands/>. Accessed: January 19, 2021.

posts. In California, such habitats include freshwater marshes; brackish and saltwater marshes; wet meadows; the weedy borders of lakes, rivers, and streams; annual and perennial grasslands, including those with vernal pools, weedy fields, and ungrazed or lightly grazed pastures; some croplands, especially alfalfa, grain, sugar beets, tomatoes, and melons; sagebrush flats; and desert sinks.¹⁹ The species nests predominantly in emergent wetlands or along rivers or lakes.²⁰ Northern harriers nest on the ground; most nests are built within patches of dense, often tall, vegetation (e.g., cattails, meadowsweet [*Spirea*]) in undisturbed areas.²¹ It forages on the wing, capturing a wide range of vertebrate prey, primarily small and medium-sized mammals and birds, while coursing low over the ground.

Northern harrier nesting on the project site is not anticipated because preferred nesting habitats (i.e., emergent wetlands and water bodies) are not present on-site, and the grassland and grain fields with potential for nesting on the project site are surrounded by human disturbance and bounded by development. Furthermore, tricolored blackbird nesting is not anticipated on the project site because the potential nesting habitat, the wheat field, is not associated with a dairy and there is no readily accessible standing water. The likelihood of northern harrier and tricolored blackbird nesting is further reduced by the amount of development within and surrounding the project site, the lack of connection between the project site and natural corridors and open spaces, and the presence of tens of thousands of acres of grasslands and woodlands less than 1 mile to the east as well as thousands of acres of tidal wetlands and open water 5 miles to the west.

Although golden eagle, northern harrier, peregrine falcon, and tricolored blackbird may forage within the annual grassland, agricultural, and ruderal land cover types (approximately 17 acres) on the project site, the likelihood of foraging is low because of the amount of development surrounding the project site; human presence and disturbance within and surrounding the project site; the lack of quality habitat on the project site, including wetland, aquatic, or riparian plant communities; the lack of connection between the project site and natural corridors and open spaces; and the presence of tens of thousands of acres of grasslands and woodlands less than 1 mile to the east as well as thousands of acres of tidal wetlands and open water 5 miles to the west.

¹⁹ Shuford, W. D., and Gardali, T. (eds.). 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of birds of Immediate Conservation Concern in California. In *Studies of Western Birds 1*. Western Field Ornithologists, Camarillo, CA, and California Department of Fish and Game, Sacramento, CA. Available: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=10393&inline>. Accessed: January 22, 2021.

²⁰ California Department of Fish and Wildlife. n.d. *California Wildlife Habitat Relationship, Life History and Range*. Available: <https://wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. Accessed January 21, 2021.

²¹ MacWhirter, B., and K. L. Bildstein. 1996. Northern Harrier (*Circus cyaneus*). In *The Birds of North America*, No. 210, A. Poole and F. Gill (eds.). The Academy of Natural Sciences and the American Ornithologists' Union, Philadelphia, PA, and Washington, D.C. Available: <https://www.hawkmountain.org/download/?id=4838>. Accessed: January 22, 2021.

Golden eagles are known to be sensitive to human disturbance; they require open terrain for hunting.^{22,23} Golden eagles are known to forage east of the project site where there is prime foraging habitat with a high prey base; no evidence of ground squirrels was present on the project site, a main prey item for golden eagles (in addition to other species in the Sciuridae and Leporidae families). Peregrine falcons are known to hunt mostly birds in the air, with favored prey being pigeons around cities.²⁴ The project would not impede peregrines from this preferred method of foraging because the space above the project site would not be significantly affected by the project. In addition, the project would not preclude the transmission tower near the project site from being used as a perch by species, including peregrine falcon, which, as stated in the comment, has been observed. Peregrine falcon is designated as fully protected by CDFW and not listed as endangered under the California Endangered Species Act, as stated by the commenter; the species was delisted in 1999.

Based on the foregoing, impacts on golden eagle, peregrine falcon, northern harrier, and tricolored blackbird would ~~not be affected~~ be less than significant. Queries of the USFWS, CDFW's CNDDB, and CNPS regarding species with potential to occur in the region are included in Appendix 4.2-2.

To better reflect the above clarifications, Table 1 in Appendix 4.2-2 will be revised as shown on the following pages (new text is underlined and deleted text is shown with ~~striketrough~~).

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
Birds					
Golden eagle (nesting) <i>Aquila chrysaetos</i>	PR/-/FP	Foothills and mountains throughout California. Uncommon nonbreeding visitor to lowlands such as the Central Valley.	Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful large and medium-sized mammals.	None (moderate foraging only)	No suitable nesting habitat (cliffs and escarpments or tall trees overlooking open country) present in the project site.; <u>Although the project site contains potential and limited foraging habitat (i.e., grassland), present. Project site is flat and surrounded by agricultural and developed land. the</u>

²² Katzner, T. E., M. N. Kochert, K. Steenhof, C. L. McIntyre, E. H. Craig, and T. A. Miller. 2020. Golden Eagle (*Aquila chrysaetos*). Version 2.0. In *Birds of the World*, P. G. Rodewald and B. K. Keeney (eds.). Cornell Lab of Ornithology, Ithaca, NY. Available: <https://birdsoftheworld.org/bow/species/goleag/cur/conservation#human>. Accessed: January 22, 2021.

²³ California Department of Fish and Wildlife. n.d. *California Wildlife Habitat Relationship, Life History and Range*. Available: <https://wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. Accessed: January 21, 2021.

²⁴ National Audubon Society. 2018. *Guide to North American Birds – Peregrine Falcon*. Available: <https://www.audubon.org/field-guide/bird/peregrine-falcon>. Accessed: January 15, 2021.

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
					<u>species is not anticipated because habitat on-site is small and bounded by development. In addition, the project site is in a heavily urbanized area. It lacks a connection to natural corridors and open spaces. Furthermore, high-quality nesting and foraging habitats are available less than 1 mile to the east. The nearest CNDDB record (Occurrence #55) for the species is from a location approximately 2.95 mile north of the project site.</u>
Northern harrier <i>Circus cyaneus</i>	-/-/SSC	Throughout lowland California but species has been recorded in fall at high elevations.	<u>Breeds and forages in open habitats, including marshes, Grasslands, meadows, marshes, grasslands, weedy fields, pastures, croplands, sagebrush flats, and desert sinks. and seasonal and agricultural wetlands.</u> Nests on ground within a thicket of vegetation; <u>prefers nesting in emergent wetlands or along water bodies.</u>	Low (moderate foraging only)	<u>Although the project site contains potential Suitable foraging and nesting habitat (i.e., grasslands and grain fields), is present within the project site, but the species is not anticipated because the habitat on-site is not the preferred habitat. In addition, the site size is marginal (2.03 acres) and surrounded bounded by development agricultural and developed land. Also, the site is in a heavily urbanized area. It lacks a connection to natural corridors and open spaces. Furthermore, high-quality nesting and foraging habitats are</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
					<u>less than 1 mile to the east.</u> The nearest CNDDDB record (Occurrence #5) for the species is from a location approximately 3.4 miles southwest of the project site.
Tricolored blackbird (nesting colony) <i>Agelaius tricolor</i>	-/ST/-	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties.	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails; or ; upland sites with blackberries; or <u>weedy fields dominated by milk thistle and/or mallow and mustard, nettles, in thistles, and grain fields, usually associated with a dairy farm.</u> Habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony. <u>Foraging habitats include wetlands, grasslands, cultivated fields, and feedlots associated with dairy farms.</u>	Low (moderate foraging only)	<u>Although the project site contains potential</u> Suitable foraging (i.e., grassland) and nesting (i.e., grain field) habitats, is present within the project site, but the species is not anticipated because the habitat size is marginal (12.33 acres) and surrounded predominately by developed land. The project site is in a heavily urbanized area that lacks a connection to natural corridors and open spaces. Also, suitable habitat on project site is not near water. The nearest CNDDDB record (Occurrence #25) for the species is from a location approximately 3.4 miles southwest of the project site.

These revisions do not change the analysis or conclusions provided in the Draft EIR.

Regarding the commenter's assertion that presence/absence surveys should be conducted, refer to Response 5.2.

Response 5.4

The commenter states that the Draft EIR's conclusion that the project will not affect wildlife movement is not supported by substantial evidence. The commenter also cites Mr. Smallwood, noting the "site is critically important for wildlife movement because it composes an increasingly diminishing expanse of open space" and that "the project would cut wildlife off from stopover and staging habitat, forcing volant wildlife to travel even farther between remaining patches of stopover habitat."

Impact BIO-2 in the Draft EIR addresses the potential for the project to interfere with the movement of native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. On page 4.2-20 of the Draft EIR, the analysis addresses wildlife movement corridors and refers to a review of USFWS critical habitat maps and information on CDFW's Biogeographic Information and Observations System. It also discusses wildlife movement in general. In response to this comment and to amplify and clarify the Draft EIR's conclusions regarding wildlife movement corridors, Impact BIO-2 on page 4.2-20 in Section 4.2, *Biological Resources*, of the Draft EIR will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):

There are no wetlands or running waters within the vicinity of the project site; therefore, the project would have no impact on fish movement. The nearest fish habitat is Dry Creek, approximately 0.6 mile northwest of the project site, and Alameda Creek, approximately 1.2 miles south of the project site. Use of the project site by wildlife as a travel corridor is highly unlikely for the following reasons. The project site has approximately 4.7 acres of natural land cover (i.e., annual grassland and ruderal land cover), which covers 18 percent of the project site. The project site is surrounded by dense urban development with high levels of human activity. The project site is not within or adjacent to any known regional wildlife movement corridors or any other sensitive biological areas, as indicated by the USFWS Critical Habitat Portal or the CDFW Biogeographic Information and Observations System (BIOS). Within the BIOS, a map produced by CDFW (Terrestrial Connectivity, Areas of Conservation Emphasis) shows the project site within an area that has been assigned a connectivity rank of *Limited Connectivity Opportunity*, which is the lowest available rank, and a statewide terrestrial biodiversity rank of *Low*, also the lowest available rank.²⁵ Lastly, no ~~natural~~ wildlife corridors connect to the site; therefore, the project would have no impact on these resources.

This revision does not change the analysis or conclusions provided in the Draft EIR.

The project site is surrounded by urbanized areas and a small amount of agricultural land. In addition, considering the site's overall size (26.5 acres), the quality of the habitat (more than 80 percent developed or disturbed), and the tens of thousands of acres of grasslands and woodlands located less than 1 mile to the east and thousands of acres of tidal wetlands and open water 5 miles to the west, in this context, the conversion of the project site would not substantially interfere with wildlife movement in the vicinity or the region, nor would it affect the Pacific Flyway.

²⁵ California Department of Fish and Wildlife. n.d. *Biogeographic Information and Observation System*. Areas of Conservation Emphasis. Version 3.20.10. Available: <https://doi.org/10.2173/bow.norhar2.01>. Accessed: January 20, 2021.

A substantial amount of wildlife is not anticipated in or around the project site because of the amount of existing development on the site; the amount of existing development surrounding the project site; the lack of quality habitat on the project site, including wetland, aquatic, or riparian plant communities; the lack of connection between the project site and natural corridors and open spaces; and the existing amount of traffic around the project site. This is supported by a map produced by CDFW (Terrestrial Connectivity, Areas of Conservation Emphasis), which shows the project site within an area that has been assigned a connectivity rank of *Limited Connectivity Opportunity*, with a statewide terrestrial biodiversity rank of *Low*.²⁶

Response 5.5

The commenter states that the project would have a significant impact on wildlife from vehicle collisions because of increased traffic generated by the project. Per Section 21002.1(e) of the CEQA Statute and Guidelines (2020), the intent of an EIR is not to analyze every possible impact on biological resources but to identify and analyze those that are potentially significant. Considering that the site is surrounded by urban development, including roads; is not within any known wildlife corridor; and developed, it was reasonable for the EIR to not analyze wildlife/vehicle collisions. Refer to Response 5.4 for a discussion of existing site conditions relative to wildlife using the site.

Response 5.6

The commenter states that the Draft EIR failed to analyze the project's impact on lost breeding capacity. Specifically, the commenter states that the Draft EIR does not analyze lost breeding capacity for birds resulting from the removal of 68 trees. Per Section 21002.1(e) of the CEQA Statute and Guidelines (2020), the goal of an EIR is not to analyze every possible impact on biological resources but to identify and analyze those that are potentially significant. This impact was not analyzed because it would not be considered potentially significant under any of the significance criteria used for the analysis of effects on biological resources in Section 4.2.2.1 of the Draft EIR and is also not part of the CEQA Checklist in Appendix G of the CEQA Statute and Guidelines (2020). The trees are unlikely to be used by special-status species, are not in riparian habitat or wetlands, and are not part of a wildlife corridor or known native wildlife nursery site (e.g., rookery). The site is not part of an adopted conservation plan. The loss of the trees is addressed in the Draft EIR under Impact BIO-3, which starts on page 4.2-20.

As stated in Impact BIO-3 on page 4.2-21, the project would require the removal of 68 trees on the project site but would include the planting of 735 trees, more than 10 times the number of trees currently on-site. The Draft EIR discusses impacts on nesting birds in Impact BIO-1 of Section 4.2.2.4. As stated on page 4.2-16, trees offer suitable nesting habitat; therefore, tree removal would have a potentially significant impact on nesting birds. Mitigation Measure BIO-1c, Nesting Bird Protection (page 4.2-18) was included in the Draft EIR to address potential impacts on nesting birds associated with construction. As stated on page 4.2-16, implementation of Mitigation Measures BIO-1c prior to structure and tree removal would protect nesting birds, thereby reducing the potential for a substantial adverse effect. Consequently, the impact on nesting birds would be reduced to less than significant with mitigation. In addition, birds could temporarily relocate to nearby surrounding areas with similar agricultural and industrial land uses as well as residential areas. Furthermore, the large open space approximately 0.6 mile

²⁶ Ibid.

northeast of the project site that encompasses Garin Regional Park and Dry Creek Pioneer Regional Park provides ample foraging and nesting habitat for birds. As stated in Section 4.2.2.2 of the Draft EIR, and in Response 5.3, above, only common, non-listed species are anticipated to nest on the project site. The amount of lost breeding capacity for birds from the removal of 68 trees on the project site would not represent a potentially significant impact because the tree loss would be temporary after the planting of 735 new trees. Furthermore, Mitigation Measure BIO-1c would be implemented during construction to protect nesting birds, the additional nesting habitat surrounding the project site would allow the temporary relocation of nests during construction, and only common species are anticipated to nest on the project site.

Response 5.7

The commenter asserts that the Draft EIR failed to address a significant impact on birds due to project-related window collisions. Specifically, the commenter states that the City has not analyzed or mitigated these potential impacts on special-species birds.

Per Section 21002.1(e) of the CEQA Statute and Guidelines (2020), the goal of an EIR is not to analyze every possible impact on biological resources but to identify and analyze those that are potentially significant. This impact was not analyzed because it would not be considered potentially significant under any of the significance criteria used for the analysis of effects on biological resources in Section 4.2.2.1 of the Draft EIR, which include the CEQA Checklist criteria on conflicts with local policies and ordinances and the criteria on having substantial adverse effects on special status species. The City has not adopted any ordinance or other guidance for regulating the design of structures to be “bird safe,” as some larger Bay Area municipalities (such as San Francisco and Oakland) have done. The decision to develop and adopt such guidance is left to individual municipalities; the State of California does not require the design of buildings to be bird safe. Given the absence of a local planning policy or ordinance mandating the use of bird-safe design elements, the project would have no impact under CEQA.

If the proposed project is constructed, the likelihood that special-status birds would forage at the project site would be low. This is because the project site consists of relatively low-quality habitat for special-status birds. With development of the project, the already low-quality habitat would become even less likely to attract special-status bird species. Refer to Response 5.3 for a discussion of existing site conditions relative to special-status birds using the site. The project site is within an urban setting surrounded by development that lacks high-quality bird habitat such as waterways or riparian areas. Therefore, the project would not represent a potentially significant impact on special-status birds related to window collisions.

Response 5.8

The commenter asserts that the Draft EIR fails to analyze the impact of house cats on wildlife. Specifically, the commenter states that the Draft EIR has not examined potential project impacts from the introduction of house cats to the project site, impacts that include killing birds and spreading disease (specifically, *Toxoplasma gondii*).

Per Section 21002.1(e) of the CEQA Statute and Guidelines (2020), the goal of an EIR is not to analyze every possible impact on biological resources but to identify and analyze those that are potentially significant. The impact cited by the commenter was not analyzed because it would not be considered potentially significant under any of the significance criteria used for the analysis of effects on biological resources in Section 4.2.2.1 of the Draft EIR. As stated in Section 3.3.2,

Surrounding Land Uses, on page 3-3 of the Draft EIR, single-family residences are located immediately north of the project site, across Decoto Road, as well as east of the project site; several multi-family housing developments are located west of the project site, beyond the Union Pacific Railroad tracks. Given the number of residences located in proximity to the project site, it can be presumed that domestic outdoor cats or feral cats are already present on the site and, therefore, would not be “introduced,” as stated by the commenter.

Many of the project’s proposed 33 residential buildings would be multi-storied apartments and condominiums (mainly three to five stories tall), with shared entrances. The lack of direct outside access (other than windows) for people or animals would curtail the potential for “free-roaming” house cats to originate on the project site. The number of cats that may be left outdoors by new residents is, thus, unlikely to be substantial.

In summary, the project’s potential and insignificant addition of outdoor cats to an area that likely already has outdoor or feral cats from nearby uses would not result in a significant physical effect on the environment.

Response 5.9

The commenter states that the Draft EIR’s analysis of cumulative impacts on biological resources violates CEQA. The commenter states that improper reasoning was used in making the effects determination.

Impact C-BIO-1, on page 4.2-21 of the Draft EIR, notes that a cumulative analysis was conducted. The analysis followed the approach outlined in Draft EIR Section 4, *Environmental Impact Analysis*, which states that the cumulative analysis was done according to the “plan approach.” The plan approach, which is one of two methods recommended in the CEQA Guidelines, considers projections contained in an adopted local plan. Accordingly, the analysis was done by reviewing the General Plan EIR.

The General Plan EIR identified a significant cumulative impact related to biological resources. Specifically, the General Plan EIR noted that implementation of the General Plan and development in adjoining cities could result in regional impacts on biological resources. The impacts, which were called out on page 4.2-21 of the Draft EIR, include impacts on special-status species; riparian, wetland, or other sensitive natural communities; and wildlife movement. The General Plan EIR concluded that, with implementation of the General Plan’s goals and policies, as well as a mitigation measure (i.e., nesting bird surveys), the impacts would be less than significant.

In response to this comment and to clarify the Draft EIR’s analysis, the second paragraph under Impact C-BIO-1 on page 4.2-21 in Section 4.2, *Biological Resources*, of the Draft EIR will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):

According to the General Plan EIR, future development in the City could result in the destruction of significant ecological resources. Implementation of the General Plan could result in regional impacts on special-status species; riparian, wetland, or other sensitive natural communities; and wildlife movement, resulting in a significant cumulative impact. The Draft EIR, then, is properly focused on whether it would contribute considerably to this significant cumulative impact. Regarding the project site, the majority of it is developed with structures or agriculture land cover and the surrounding area is also mostly developed. The project site and surrounding area retain little natural habitat and exhibit a high level of disturbance. The proposed project would not result in impacts on or a loss of wetlands, riparian

habitats, or other sensitive natural communities or wildlife movement corridors and, therefore, would not contribute considerably to the significant cumulative impact on such resources identified in the General Plan EIR. The project would convert grassland to an urban use; however, grassland is not a sensitive natural community.

As discussed in Impact BIO-1 of the Draft EIR, the proposed project has a potential to result in impacts on special-status species; however, such impacts would be limited to a loss of low-quality foraging habitat for special-status birds (golden eagle, peregrine falcon, northern harrier, and tricolored blackbird), potential disturbance of burrowing owls (if occupying the site prior to construction), and loss of potential special-status bat roosting habitat (trees and structures).

Taking into consideration the quality of the special-status bird foraging habitat (with past and ongoing disturbance) and the quantity, consisting of a wheat field (12.3 acres), ruderal land cover (2.7 acres), and grassland (2.0 acres), relative to the abundant foraging habitat less than 1 mile east of the project site, with tens of thousands of acres of grassland and oak woodland, the loss of this low-quality foraging habitat due to the proposed project would not be cumulatively considerable. Furthermore, implementation of Mitigation Measures BIO-1a, Burrowing Owl Protection, and BIO-1b, Bat Protection, would ensure that potential impacts on burrowing owl associated with construction would be avoided and minimized. Implementation of Mitigation Measure BIO-1c would ensure protection of nesting and roosting birds prior to structure and tree removal. With implementation of such measures, the project would not contribute considerably to the significant cumulative impact.

The loss of special-status bat roosting habitat would also not be cumulatively considerable, considering the availability of landscaping, including the 735 trees proposed by the project, as well as industrial and residential buildings within the city and region that could be used by roosting bats.

Considering the baseline quality of the habitat, as well as the levels of ongoing disturbance from industrial, residential, agricultural activities within and adjacent to the project site, and implementation of the General Plan's goals and policies, as well as mitigation measures, construction of the proposed project would not contribute considerably to the significant cumulative impact on special-status species.

However, the project site has the potential to have a significant impact on biological resources, as discussed above, resulting in the potential to have a cumulatively considerable contribution to a cumulative impact. Implementation of Mitigation Measures BIO-1a (Burrowing Owl Protection) would ensure the protection of nesting burrowing owls, which would reduce the project's impact on this special-status species and conflict with local policies or ordinances protecting burrowing owl to a less-than-significant level. Implementation of Mitigation Measures BIO-1b (Bat Protection) and BIO-1c (Nesting Bird Protection) would ensure the protection of nesting and roosting birds and bats, which would reduce the project's impact on residing bat or bird species and impeding the use of native wildlife nursery sites to a less-than-significant level. As discussed in Impact BIO-3, the project would require the removal of all 68 trees on the project site, including 47 protected trees. The project design would adhere to the Union City Municipal Code (Chapter 12.60.170) and Tree Conservation Ordinance. With implementation of Mitigation Measures BIO-1a, BIO-1b, and BIO-C, the project's contribution to cumulative biological resources impacts would be less than cumulatively considerable. Therefore, the cumulative impact would be ***less than significant with mitigation.***

This revision does not change the conclusions provided in the Draft EIR.

Response 5.10

The commenter states that Mitigation Measures BIO-1a and BIO-1b are inadequate with respect to reducing impacts on burrowing owl and roosting bats, respectively. The commenter states that detection surveys are necessary to inform decision-makers about impacts on these species and determine mitigation for such impacts.

This response will first address assertions concerning Mitigation Measure BIO-1a, Burrowing Owl Protection. As discussed in Draft EIR Appendix 4.2-2 and Impact BIO-1 on page 4.2-15, the project site provides very low-quality habitat for burrowing owl. During the April 15, 2019, site visit by a qualified biologist, no mammal burrows were observed on the project site. The grassland on the site is small and hemmed in by trees, buildings, and wheat fields. Individually and collectively, these attributes limit the ability of burrowing owls to detect approaching predators. Despite the very low likelihood of burrowing owls occurring on the project site, Mitigation Measure BIO-1a was included because of a requirement in the DIPSA Specific Plan (as stated on page 4.2-15 of the Draft EIR). Given the biologist's site reconnaissance and assessment of suitability for burrowing owls, Mitigation Measure BIO-1a would be adequate with respect to avoiding take involving burrowing owl prior to construction.

The analysis of impacts on roosting bats on page 4.2-15 of the Draft EIR assumes that existing structures and trees on the project site represent habitat for special-status bats. In other words, the presence of roosting bats is assumed. Although detection surveys may provide more specific information prior to preconstruction surveys, because the analysis assumes the presence of special-status bats, the analysis is not deficient because of a lack of detection surveys.

Mitigation Measure BIO-1b, Bat Protection, is adequate for avoiding and minimizing impacts on roosting bats. The measure identifies a process that begins "at least 2 months prior" to construction by assessing structures for roosting habitat and bat sign and recording visual observations of bats. The measure also includes a process for follow-up surveys, a process for coordinating with CDFW, a process for excluding bats (when appropriate), and a process for delaying demolition and tree removal until after the maternity season. This measure is thorough and comprehensive.

Response 5.11

The commenter claims that the values used in the California Emissions Estimator Model (CalEEMod) were unsubstantiated or inconsistent with information provided in the Draft EIR. The comment summarizes conclusions made by the commenter's technical consultant (SWAPE). These are addressed below.

1. **Commercial Land Use:** The commenter claims that the modeled quantity for commercial land use is underestimated by 30 square feet (30,770 instead of 30,800). The Draft EIR, on page 1-3, states the amount of commercial space is "approximately 30,800" square feet. This quantity is rounded from the 30,770 square feet given in Draft EIR Table 3-1. The precise quantity (30,770) was used in the modeling. Therefore, no underestimation occurred as asserted.
2. **Construction Phase Durations:** The commenter claims that changes made to the CalEEMod default values for the duration of construction phases are not substantiated. In fact, default values in CalEEMod are intended for use where project-specific data are not available. Replacement of the model's default values does not represent "changes" but, rather, refinement

of the defaults with project-specific values, thereby *increasing* accuracy. Construction-related criteria pollutant and greenhouse gas (GHG) emissions were estimated using project-specific assumptions provided by the applicant's design team. Consistent with BAAQMD recommendations, the project-specific assumptions were used in place of CalEEMod default values because the project-specific assumptions represent the best available information for characterizing the anticipated construction activities and emissions associated with the project. Therefore, no changes to modeling or conclusions relative to construction phase durations are warranted.

3. Acres of Grading: The commenter claims that changes made to the CalEEMod default values for acres of grading are not substantiated. The default values in CalEEMod are intended for use where project-specific data are not available. Replacement of the model's default values does not represent "changes" but, rather, refinement of the defaults with project-specific values, thereby *increasing* accuracy. Note that 26.5 acres is the actual size of the site; this quantity was used in the modeling. The project applicant has indicated that the site would be graded in one pass and that substantial portions of the site would not require additional grading. As such, the grading assumption of 26.5 acres is likely overestimated, yielding conservative (or higher than reality) modeling results. Assuming a grading area even larger than the project site would not be a reasonable assumption, based on the grading needs of the site. Therefore, no changes to modeling or conclusions relative to grading acreage are warranted.
4. GHG Intensity Factors: The commenter claims that changes made to the CalEEMod default values regarding electricity factors are not substantiated. The default values in CalEEMod are intended for use where project-specific data are not available. Replacement of the model's default values does not represent "changes" but, rather, refinement of the defaults with project-specific values, thereby *increasing* accuracy. These changes are simply updates that account for decreases in intensity factors between the CalEEMod default year of 2008 and the project Phase 1 year of operation (2023). Furthermore, the derivation of energy intensity factors is included in the Draft EIR. Please refer to page 58 of Appendix 4.1-1, which shows the calculations used to arrive at the emission factors used in CalEEMod. Therefore, no changes to modeling or conclusions relative to GHG intensity factors are warranted.
5. Fireplaces/Wood Stoves: The commenter claims that changes made to the CalEEMod default values for fireplaces and wood stoves are not substantiated. The default values in CalEEMod are intended for use where project-specific data are not available. Replacement of the model's default values does not represent "changes" but, rather, refinement of the defaults with project-specific values, thereby *increasing* accuracy. These changes are simply updates that account for the requirements of BAAQMD Regulation 6, Particulate Matter and Visible Emissions, Rule 3, Wood-Burning Devices, which mandates natural gas fireplaces for new construction; wood-burning devices are not allowed. Accordingly, no changes to modeling or conclusions relative to fireplaces/wood stoves are warranted.
6. Operational Vehicle Trips: The commenter claims that operational vehicle trips were omitted from the analysis. Operational vehicle trips were not omitted but, rather, calculated outside of the CalEEMod model using CARB's EMFAC 2017 model, as described in Draft EIR Section 4.1.2.2. The analysis does not fail to take into account road dust; road dust emissions are included in the operational emissions tables in Section 4.1, *Air Quality*, of the Draft EIR. Trip-purpose percentages and fleet mixes are also accounted for in the analysis. Daily vehicle miles traveled (VMT) was quantified by the project traffic engineer. As noted in Section 4.14, *Transportation*, VMT is typically an output from travel demand models. Its calculation is based on the estimated

number of vehicles multiplied by the distance traveled by each vehicle. This analysis uses total VMT per population generated on a typical weekday where VMT includes all automobile trips with an origin and/or destination in the analyzed geographic area. As such, the daily VMT estimate conservatively represents a typical weekday. To calculate annual VMT, an annualization factor of 347 days per year was used, consistent with CARB guidance. Thus, the analysis does not fail to account for differences between weekdays and weekends because the product of the annualization factor and daily weekday VMT accounts for reduced travel on weekends. Furthermore, vehicle fleet mix was conservatively assumed to be represented by the entire Alameda County fleet mix; therefore, the analysis does not fail to take into account fleet mix percentages and no changes to any conclusions are warranted.

7. **Trees and Carbon Sequestration:** The commenter claims that changes made to the CalEEMod default values for tree planting are not substantiated. The default values in CalEEMod are intended for use where project-specific data are not available. Replacement of the model's default values does not represent "changes" but, rather, refinement of the defaults with project-specific values, thereby *increasing* accuracy. The number of trees entered into the model reflects actual project design features, as described in Draft EIR Section 4.1.2.3. The emissions estimates provided in Section 4.1, *Air Quality*, and Section 4.6, *Greenhouse Gases*, represent the definition of the project, including design features. Accordingly, no changes to any related conclusions are warranted.
8. **Water-Related Operational Mitigation:** The commenter claims that justification for the water-use reduction measures entered into CalEEMod is inadequate. The measures entered into the model reflect project design features to support sustainability, as described in Draft EIR Section 3.4.8. The emissions estimates provided in Section 4.1, *Air Quality*, and Section 4.6, *Greenhouse Gases*, represent the definition of the project, including design features. Accordingly, no changes to any related conclusions are warranted.

Response 5.12

The commenter claims that an analysis, using the recommended changes to the CalEEMod model inputs (refer to Comment 5.11), shows that emissions would exceed BAAQMD thresholds of significance. As discussed in Response 5.11, the inputs used in the Draft EIR analysis are justified and correct. Construction-related criteria pollutant and GHG emissions were estimated using project-specific assumptions provided by the applicant's design team. Consistent with BAAQMD recommendations, project-specific assumptions were used in place of CalEEMod default values because the project-specific assumptions represent the best available information for characterizing anticipated construction activities and emissions associated with the project. As described in Draft EIR Section 4.1.2.3, emissions due to the project would not exceed BAAQMD thresholds of significance with mitigation implemented, except for operational nitrogen oxides, which would be addressed by Mitigation Measure AQ-2g (purchase of mitigation credits). Thus, the air quality and GHG emissions in the Draft EIR are considered to be substantiated by project-specific information.

Response 5.13

The commenter claims that an analysis, using the changes to the CalEEMod model inputs recommended by the commenter's consultant (SWAPE), shows that health risks due to construction would exceed BAAQMD thresholds of significance. As discussed in the response above to Comment 5.11, the project-specific inputs used in the Draft EIR analysis are justified and proper. As described

in Draft EIR Section 4.1.2.3, health risks due to project construction would not exceed BAAQMD thresholds of significance with mitigation implemented.

With respect to project operations, the commenter claims that, because the project would generate 8,080 daily vehicle trips during operation, which would result in additional exhaust, the health risk assessment should be revised to include an assessment of the cancer risk posed to existing off-site receptors as a result of project operations. The relevant guidance is the *Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* developed by the California Office of Environmental Health Hazard Assessment, in conjunction with CARB, for use in implementing the Air Toxics Hot Spots Program. CARB states that the Air Toxics Hot Spots Information and Assessment Act requires stationary sources to report the types and quantities of certain substances routinely released into the air.

The Air Toxics Hot Spots Information and Assessment Act specifically defines a “facility” as follows: “*Facility* means every structure, appurtenance, installation, and improvement on land associated with a source of air releases or potential air releases of a hazardous material.” CARB specifically notes that applicability for the health risk assessment is based on the following types of facilities:

- Facilities that emit more than 10 tons per year of total organic gasses, particulate matter, nitrogen oxides, or sulfur oxides;
- Facilities that emit more than 5 tons per year of any federal hazardous air pollutant; and
- Facilities that emit less than 10 tons per year (e.g., gas stations, dry cleaners, hazardous waste incinerators, metal platers using cadmium or chromium, wastewater treatment facilities, etc.).

The project is not a “facility” under the above definition and does not propose operation of significant sources of toxic air contaminants (TACs) (e.g., freeways and high-traffic roads, emergency generators, commercial distribution centers, rail yards, ports, refineries, chrome platers, dry cleaners, or gasoline stations). The project would generate passenger vehicle traffic, which is not a substantial TAC source. Because passenger vehicles are not significant sources of TACs, a quantitative operational TAC impact assessment was not completed for the project. This is consistent with BAAQMD guidance, which states that passenger vehicles are not a substantial source of TACs. Because operational TAC emissions sources would not be included in the project, the commenter’s assessment has been inappropriately applied to the project; it inaccurately states that the project would result in significant operational health risk impacts. The commenter’s assertions are not substantial evidence of an actual project impact. Also, operational health risk impacts at adjacent sensitive receptors would be less than significant, as stated in the Draft EIR. Furthermore, SWAPE used AERSCREEN for its health risk assessment, which is a screening-level model that produces a “worst-case” assessment of pollutant concentrations. ICF used AERMOD for the construction health risk assessment presented in the Draft EIR. AERMOD is a comprehensive modeling platform that incorporates air dispersion data, based on planetary boundary layer turbulence structure and scaling concepts, including both surface and elevated sources and both simple and complex terrain. Accordingly, AERMOD is capable of providing more refined concentration results, based on project-specific conditions.

Given the above, the additional modeling and data submitted by the commenter do not constitute new “substantial evidence,” and an updated health risk assessment for the project is not necessary.

Response 5.14

The commenter claims that the EIR improperly concluded that the project would not have a significant GHG impact because it would be consistent with Assembly Bill 32, Senate Bill (SB) 32, SB 375, Executive Order (EO) S-3005, EO B-55-18, Plan Bay Area, Title 24, California's Short-Lived Climate Pollutant Reduction Strategy, the Low-Carbon Fuel Standard, and the City's own General Plan and that none of these meet the criteria for a qualified GHG reduction program.

The commenter asserts that compliance with "GHG laws and policies" is not a valid approach for assessing significance because the plans and policies are not qualified GHG reduction plans. However, as stated on page 4.6-14 of the Draft EIR:

The California Supreme Court's decision in *Center for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company* (62 Cal.4th 204) confirmed that there are multiple potential pathways for evaluating GHG emissions consistent with CEQA. Several air quality management agencies throughout the State have also drafted or adopted varying threshold approaches and guidelines for analyzing GHG emissions in CEQA documents. Common threshold approaches include 1) compliance with a qualified GHG reduction strategy, 2) numeric "bright-line" thresholds, 3) efficiency-based thresholds, 4) performance-based reductions,²⁷ and 5) compliance with regulatory programs.

As indicated by the Draft EIR text above, the California Supreme Court confirmed that there are multiple potential pathways for evaluating GHG emissions. One of those confirmed pathways is compliance with a qualified GHG reduction strategy (i.e., a CAP). Distinct from compliance with a CAP, another confirmed approach is compliance with regulatory programs. Given that these two pathways (CAP consistency and compliance with regulatory programs) are distinct and have been confirmed by the California Supreme Court for evaluating GHG significance, the Draft EIR's approach of discussing "guidance issued by CARB (2019) and OPR [Office of Planning and Research] (2018)" and referencing "the most applicable regulatory programs, policies, and thresholds recommended by the BAAQMD, CARB, and OPR" (page 4.6-14 of the Draft EIR) is valid.

The commenter does not present substantial evidence that compliance with regulatory programs is not a valid approach; rather, the commenter discusses the requirements of a qualified CAP. This was not the overriding approach that was used in the Draft EIR to determine significance (per discussion below, the City's CAP, although non-qualified, was referenced for informational purposes; the project's consistency with it does not preclude the finding of a significant impact). As an example of the distinction between compliance with a CAP and compliance with regulatory programs, as discussed on page 4.6-20 of the Draft EIR, the project's electricity-related emissions would progressively decrease because the project would be compliant with and affected by the requirements of SB 100, which requires 60 percent of electricity from renewable resources by 2030 and 100 percent by 2045. The commenter notes that "GHG laws and policies," such as SB 100, do not meet the requirements of a qualified CAP. That is correct because a law mandating renewable energy is fundamentally different from a CAP. Regardless, "GHG laws and policies," such as SB 100, would reduce the project's energy emissions in accordance with statewide goals for reducing GHG emissions.

²⁷ Performance-based thresholds are based on a percentage reduction from a projected future condition (e.g., reducing future business-as-usual emissions to meet the Senate Bill 32 target [40 percent below 1990 levels] through a combination of state measures; project design features, such as renewable energy; or mitigation.

In addition, the commenter states that the Draft EIR relies on the project's consistency with the Climate Action Plan (CAP) to come to a conclusion of less than significant. The CAP is discussed in the Draft EIR because it is a relevant document that pertains to GHG planning in the city. The Draft EIR simply discloses that the project would not conflict with the CAP. The determination of the significance of the project GHG impacts is based on multiple considerations, which the commenter acknowledges in the reference to multiple "GHG laws and policies." Although the Draft EIR evaluates consistency with a CAP that is not considered to be a qualified CAP, for informational purposes, this evaluation does not preclude significant impacts with respect to other plans, policies, or thresholds. In other words, if the Draft EIR hypothetically found that the project would significantly conflict with other applicable GHG policies but would be consistent with the City's CAP, the overall conclusion would be a significant impact.

In response to this comment and to better clarify the above, the first paragraph on page 4.6-24 in Section 4.6, *Greenhouse Gas Emissions*, of the Draft EIR will be revised as follows (new text is underlined and deleted text is shown with ~~striketrough~~):

Though the City's CAP does not address post-2020 emissions generated by the proposed project when it becomes fully operational in 2025, the proposed project would not conflict with its GHG reduction strategies. More specifically, the proposed project would include green building techniques, as well as energy efficiency, water conservation, and waste reduction measures. In addition, the proposed project would promote a transit/pedestrian/bicycle-friendly environment that would support GHG reductions from mobile sources. The proposed project would also result in a net increase in trees and expand the City's urban forest. Thus, the project is consistent with the City's General Plan goals and policies related to GHG emissions and would not conflict with strategies outlined in the City's CAP to support GHG emissions reductions. As noted, the CAP does not address post-2020 emissions generated by the proposed project and is thus not considered to be a qualified CAP. Consequently, the proposed project is determined to not conflict with the CAP, but this does not preclude a significant impact conclusion for any other evaluation of significance in this section. However, because the project is compliant with applicable regulatory programs, the GHG impact is less than significant. ~~Therefore, this impact would be less than significant.~~

This revision does not change the analysis or conclusions provided in the Draft EIR.

Response 5.15

The commenter again references a belief that the Draft EIR relied on unsubstantiated input parameters. As explained in Response 5.11, the inputs used in the Draft EIR analysis are justified and proper.

The commenter again states a belief that the Draft EIR relied on the City's CAP. As explained in Response 5.14, the CAP is discussed in the Draft EIR because it is a relevant document that pertains to GHG planning in the city; the Draft EIR simply discloses that the project would not conflict with the CAP. The revisions noted in Response 5.14 clarify the role of the CAP in the project's impact discussion.

The commenter notes that the Draft EIR failed to apply the relevant BAAQMD threshold in the comment header (SWAPE, page 21) but also refers to the threshold as being from Association of Environmental Professionals (AEP) guidance. BAAQMD does not have an applicable post-2020 GHG threshold. The AEP 2030 land use efficiency threshold referenced by the commenter is based on

statewide data and an AEP white paper from 2016. Subsequent to that white paper, GHG efficiency thresholds, based on statewide metrics (not localized metrics), were found to not be supported by substantial evidence in the court case *Golden Door Properties v. County of San Diego/Sierra Club LLC v County of San Diego (2018)* __ Cal.App.5th __. As such, the GHG threshold referenced by the commenter would not be valid because the court found that numeric thresholds must be tailored to the local geography. Consequently, the Draft EIR did not fail to apply a relevant quantitative threshold, as asserted by the commenter. Similarly, the Draft EIR did not fail to identify a potentially significant GHG impact because the threshold identified by the commenter is not valid. Furthermore, most of the GHG emissions associated with the project would be from travel to and from the project site. The CEQA Guidelines note that “projects within one-half mile [2,640 feet] of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact” (Section 15064.3[b][1]). The project would be approximately 900 feet from the Union City Bay Area Rapid Transit station and directly adjacent to a high-quality transit corridor. Accordingly, VMT impacts on GHG emissions were found to be less than significant.

BAAQMD has set a significance threshold of 10,000 metric tons of carbon dioxide equivalent (CO₂e) for stationary sources. Stationary-source emissions would be considered less than significant if annual emissions would amount to less than 10,000 metric tons CO₂e. Stationary-source GHG emissions from project operations would be less than this threshold (see Draft EIR Table 4.6-4) and, therefore, impacts would be less than significant.

Impacts associated with GHG emissions from energy, water, waste, area, and land use sources would be considered less than significant if the proposed project is consistent with all applicable 2017 Climate Change Scoping Plan strategies and supporting regulations and guidance. The proposed project’s features and sustainability measures are consistent with applicable policies from the 2017 Climate Change Scoping Plan and regulatory programs for the area, energy, water, and waste sectors. The proposed project would replace removed trees and plant additional trees for a net increase in trees and, thus, be consistent with 2017 Climate Change Scoping Plan’s overall goal of avoiding losses in carbon sequestration. The proposed project would comply with all applicable City and state green building measures, including Title 24, Part 6, of the California Energy Code’s baseline standard requirements and the most recent version of CALGreen (California Code of Regulations, Part 11). The project would install Energy Star appliances and incorporate sustainable features such as energy-efficient HVAC systems and parking spaces for electric vehicles. Thus, the project’s compliance with the regulatory programs would, for the reasons discussed in the Draft EIR, result in a less-than-significant impact.

With respect to the “feasible mitigation measures available to reduce emissions,” because the project would result in less-than-significant impacts, no further mitigation is needed.



Jason R. Flanders
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 916.202.3018

December 21, 2020

City of Union City Planning Division, Economic and Community Development
 Carmela Campbell, Economic & Community Development Director
 34009 Alvarado-Niles Road
 Union City, California 94587
StationDistrict@unioncity.org
Sent via electronic mail

Subject: **Station East Residential/Mixed Use Project, Draft Environmental Impact (EIR) Report SCH# 2020039032**

Please accept these comments on behalf of my client Elizabeth Ames, in opposition to the above-referenced project. The proposed project should not proceed based on the Draft EIR, because it inaccurately characterizes Quarry Lakes Parkway as a local roadway, when in fact, the Quarry Lakes Parkway ("QLP") provides only a segmented portion of the East-West Connector project ("EWC"), which will create significant regional traffic and air quality impacts, that are undisclosed by the Draft EIR, or by the EWC 2009 EIR. As explained further, below, and supported by the attached expert analysis of traffic engineer Rock Miller (fully incorporated herein by reference), environmental analysis of the EWC must be updated before it can be considered and included in projects such as this.

When proposed project changes are of sufficient magnitude, such as here, the agency must review the changes to determine whether a subsequent or supplemental EIR is required. Pub Res C §21166(a); 14 Cal Code Regs §15162(a)(1); *Concerned Citizens of Costa Mesa, Inc. v 32nd Dist. Agric. Ass'n* (1986) 42 C3d 929, 937; see also *Ventura Foothill Neighbors v County of Ventura* (2014) 232 CA4th 429 (county required to prepare supplemental EIR); *American Canyon Community United for Responsible Growth v City of Am. Canyon* (2006) 145 CA4th 1062 (change in type of project required supplemental environmental review); *Twain Harte Homeowners Ass'n v County of Tuolumne* (1982) 138 CA3d 664, 690 (changes to proposed general plan substantial enough to require further environmental review).

This is particularly the case where, as here, new project changes and uses, and changed conditions, will lead to new or more severe significant impacts than previously assessed. Pub Res Code §21166; 14 Cal Code Regs §15162(a)(2). CEQA provides that a subsequent or supplemental EIR is required if "[n]ew information, which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available." Pub Res C

§21166(c); 14 Cal Code Regs §15162(a)(3). Due to such changes, mitigation measures and alternatives must also be reconsidered. *Committee for Re-Evaluation of the T-Line Loop v San Francisco Mun. Transp. Agency* (2016) 6 CA5th 1237, 1255.

6.1
con't

Current regional projections show induced demand will create more congestion, including congestion at Niles Canyon. Before the EWC / QLP can proceed, the City must update the regional traffic model, and consider the consequences of regional connectivity. The changed conditions since EWC was first considered now strongly demonstrate that the EWC will continue to motorize the region and facilitate long-range commutes, passing straight through Fremont and Union City without utilizing the multi-modal transportation nodes, such as the proposed Station East.

6.2

In contrast, the pending Draft EIR incorrectly characterizes the EWC/QLP as a local road, which is misleading, inaccurate, and fails to support informed environmental decision-making. The EWC/QLP is overdesigned and will cause more congestion bottlenecks at SR 84 - Niles canyon. The City must renew its environmental analysis of this cumulative context.

6.3

In addition, the baseline setting from the 2006 DIPSA is questionable. The setting describes the history of Union City and references the 2006 DIPSA. Yet, most notably, the 1884 Peterson farmhouse complex eligible as a National Register of Historic Places, a local farm on Alvarado-Niles Road, and the adjacent historic route of Old Alameda Creek are not mentioned. (See attached.) The DIPSA setting and cumulative analysis is outdated. An omission of the decision-making methodology for assessing the potential environmental impacts of state and local projects on agricultural land is not surveyed for classification, nor does the DIPSA references provide identification of updates to the agricultural, cultural and biological resources at risk. There is no baseline setting that includes the CEQA Environmental Criteria (significance thresholds) used by the State of California in regards to the omitted agricultural Land, biological and Cultural Resources within the DIPSA.¹ (See, Pub. Resources Code §§ 21060.1 [agricultural land]; 21061.2 [land evaluation].) The baseline setting should be updated to reflect existing conditions, according to CEQA requirements.

Thank you again for your careful consideration of these comments.

Sincerely,



Jason R. Flanders

ATA Law Group

Cc: Tess Lengyel, Executive Director, ACTC
tlengyel@alamedactc.org

¹[https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2019 CEQA Statutes and Guidelines.pdf](https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2019_CEQA_Statutes_and_Guidelines.pdf)

ALAMEDA COUNTY PARKS, RECREATION AND HISTORICAL COMMISSION

224 West Winton Ave., Room 111 · Hayward, California 94544-1215 · phone 510.670.5400 · www.acgov.org/cda

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District 2

Linda Willis
District 4

6.4

February 13, 2020

California Transportation Commission

1120 N Street MS 52

Sacramento, CA 95814

Dear Commissioners:

In 1884, John H. Peterson established his homestead at the property currently addressed as 35621 Alvarado-Niles Road in Union City, California. Now known as the *John H. Peterson Farm and House*, the property was purchased by the State as a part of its Highway 84 Realignment project in 1958.

Since its purchase by the State, the *John H. Peterson Farm and House* has had multiple professional reviews of its potential as a registered historic resource. In 1994, historic architect Ward Hill performed an analysis, as did the historic architecture research company, Basin Research. The Basin Research findings were revised in 1995, immediately prior to review by the California Historic Preservation Office. Finally, in 2008, an updated historic analysis was performed by ICF Jones & Stokes consultants.

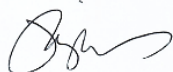
All of the aforementioned analyses found the farm and its home potentially eligible for inclusion on the National Register of Historic Places, as it is one of the only surviving farmhouses dating from that period in the local area (Criteria A) and it serves as an outstanding example of 1880's Queen Anne style architecture in general (Criteria C).

This farmhouse and its outbuildings need to be preserved for use as an educational experience for future generations. Preserving some of the open space surrounding the buildings would serve to augment the 19th century ambiance and allow the property to be experienced as a whole farmstead, not just a house. Preservation would be far more effective a teaching tool than a mere picture in a book or etching on a plaque, as this property can facilitate a virtual visit back in time for attendees.

The *John H. Peterson Farm and House* is still considered eligible for the National Register of Historic Places, as noted in the 2008 historic analysis by ICF Jones & Stokes. The property is a rare and classic example of the type of farms that once lined this road over 100 years ago. It is the only intact combination of a farm and its home remaining in Union City.

Because of this, we, the Alameda County Park, Recreation and Historic Commission, respectfully request all efforts to preserve this property be employed. Saving the *John H. Peterson Farm and House* will ensure a valued historic resource will be available for the enjoyment of many future generations.

Sincerely,



Piper McKnight, Chair
Alameda County Parks, Recreation and Historic Commission



December 10th, 2020

John H. Peterson Farm and House
35261 Alvarado-Niles Rd.
Union City, CA 94587

To whom it may concern:

The John H. Peterson Farm and House was established in 1884. It was originally 50 acres in size and extended from the original Alameda Creek line at the western border all the way to the rail line just past Alvarado-Niles Road at the eastern border. In 1958, the property was purchased by the State of California as part of the Highway 84 Realignment. In 1994, the State contracted with Ward Hill to do a historical survey of the house and property. The resultant report "Hill, Ward. 1994. Historic Architectural Survey Report – Route 84 Realignment Project Alternatives" noted:

In the context of what was originally Washington Township, the Peterson house is a rare, surviving example of a large 19th century farm house that retains integrity of materials, design and setting.

Based on a windshield survey of Union City and discussions with individuals in the Union City Planning Department and the Washington Township Historical Society, the Peterson house appears to be the only surviving farm house in the city.

...the Peterson house appears to be significant under Criteria A as one of the only surviving farm houses dating from the early years...

The house individually also appears to be eligible under Criterion C as an outstanding example of an 1880s Queen Anne style farm house in Washington Township.

Basin Research also performed a historical analysis in November 1994, which was later revised in March 1995. This report concurred with the Ward Hill report on the historical significance of the Peterson Farm and House.

In October 1995, the State Historic Preservation Officer issued a letter concurring with the previous studies' findings regarding the Peterson Farm. The letter states the following:

"Our review of the submitted documentation leads us to concur with your determination that the following properties are eligible for inclusion on the NRHP at the level of significance under criteria established by 36 CFR 60.4:

- John H. Peterson Farm, 35261 Alvarado-Niles Rd, Union City (Criterion A and C)"

In 2008, an updated historical analysis was generated by ICF Jones & Stokes. This report was added to the East-West Connector Project report as Appendix J. Page 15 of this report states the following:

"The Peterson Farm property was determined eligible for listing in the NHRP under

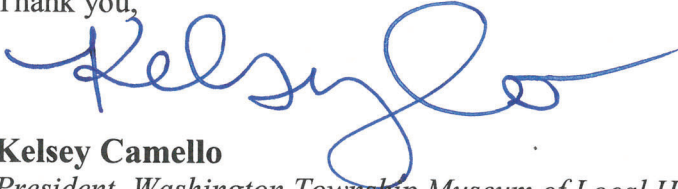
criterion A and C as a rare surviving example of an 1880s farm complex with an outstanding Queen Anne-style farm house."

"The Peterson Farm appears to continue to meet Criterion A ... and Criterion C ..."

6.5
con't

Part of a historically agricultural area, the Peterson Farm is the last remaining active farm in Union City and the farm house is one of the oldest buildings in Union City. Over the last thirty years, the Peterson Farm and House have repeatedly been deemed historically significant. The farm and farmhouse should be added to the Landmark and Historic Preservation Overlay Zone list. Furthermore, it should be preserved and kept intact now and into the future.

Thank you,



Kelsey Camello

President, Washington Township Museum of Local History

www.museumoflocalhistory.org/

190 Anza Street, Fremont, CA 94539

510-623-7907

December 18, 2020

Jason Flanders
Aqua Terra Aeris Law Group
4030 Martin Luther King Jr. Way
Oakland CA 94609

Subject: Station East Residential/Mixed Use Project & DEIR

Dear Mr. Flanders,

You requested that Rock E. Miller & Associates conduct a review and provide comments regarding transportation analysis for the subject project and documents relating to the Quarry Lakes Parkway proposed roadway as it relates to the subject project. We are pleased to provide this response for consideration by Union City.

The proposed project traffic study was prepared based upon revisions to CEQA stemming from changes legislated by SB 743 that have evolved over the past few years. These revisions move the focus of traffic impact analysis away from Level of Service assessments for intersections and roadways. The emphasis is shifted toward Vehicle Miles Traveled, determining whether the net additional travel activity is higher or lower than a threshold of significance. An important component of this analysis is that failure to meet Level of Service thresholds is no longer considered a significant impact. These changes were developed in part to encourage infill development, especially in areas where transit service and other alternatives to private auto travel are attractive.

6.6 The proposed project is a high density residential and mixed-use project. There is high level transit available on adjacent streets and the site is within walking distance of a BART station. In my opinion and based upon current CEQA guidelines, there is no doubt that the project would not have significant environmental impacts with respect to transportation. This reading of CEQA further suggests that there is no need for any transportation mitigation for this project or a project of comparable density and use mixture on the site. This was precisely the outcome that was anticipated by the changes in CEQA for dense projects in built-up areas with good transit.

The traffic study for the project was initiated under the previous CEQA guidelines that focus on roadway and intersection Level of Service (LOS). The study presented and described a list of roadways that might experience traffic increases, and it presented existing daily traffic volumes on roadways and peak hour traffic volumes at 17 intersections. Nine intersections were close to the project site and BART station, while 8 intersections were further from the site. The intersection turning movement data presented is the foundation for an LOS analysis of roadway conditions, but no LOS analysis was included in the EIR. It appears that the study preparers abridged the process based upon concurrent changes in CEQA as the study was being prepared. CEQA as currently applied would allow for this and would not have even required the traffic volumes to be collected and presented.

CEQA does not forbid agencies from continuing to study LOS at intersections. It mainly provides that mitigation of intersection LOS impacts is not required to find the project impacts to be insignificant. There is nothing that would prevent the City from proceeding with the traditional LOS analysis, if the City had concerns over traffic and wanted to understand how the project might change or adapt to current conditions.

Other city and regional guidelines would strongly encourage a full analysis of LOS. Many of these are stated in the traffic study. Most relevant are:

- The ACTC congestion management plan that requires an assessment of individual development actions on the regional transportation system for developments with more than 100 PM peak hour trips.
- City General Plan Goal M-4, Policy M-4.3 that establishes LOS standards at signalized intersections

While CEQA does not require an LOS analysis of the roadway system, few agencies in California have chosen to not conduct the LOS analysis for major projects. Agency guidelines often still require the analysis, and many agencies want to know if there are any potential issues that can be resolved through a more detailed analysis that can readily or easily be incorporated into the site planning. If unresolvable issues are identified, they do not become significant impacts per CEQA, but if they can be alleviated, the study provides the basis for including additional provisions in the project.

Recommendation 1: *The traditional traffic analysis that was initiated by the existing traffic data should be completed to provide full information and disclosure regarding traffic conditions expected upon completion of the project.*

The proposed project includes the future Quarry Lakes Parkway in a list of transportation facilities that are presumed to be fully committed and likely to exist in the future. The study indicates that this facility will be completed by 2040. This project has a significant history of controversy and challenges. Caltrans originally envisioned the corridor as a freeway/expressway, but they scrapped it decades ago due to cost, impacts of construction, and controversy. ACTC adopted the project and reduced the corridor to an arterial. They prepared an EIR in 2009 that identified many impacts and identified an extremely high cost, over \$300 million. The most recent fact sheet indicates that \$210 million (2/3 of the cost) remains unfunded. The project appears to have been handed over to Union City for further pursuit upon completion of the EIR.

The 2009 EIR described the project as a widening of Decoto Road to 6 lanes from I-880 to Paseo Padre Parkway, and a widening of Paseo Padre to 6 lanes from Decoto Road southeast for about ½ mile. Also, a new road would be constructed from Paseo Padre Parkway to Mission

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Boulevard at 7th Street. The new roadway would include bridges or underpasses to cross Alameda Channel, Old Alameda Creek, BART, and two railroad corridors.

The project included pedestrian and bicycle features to mitigate certain impacts. These were the traditional features that were widely used in 2009, including bicycle lanes and a side path trail. These facilities do not represent state-of-the-art for bicycle infrastructure. Bicycle lanes on a fast roadway do not attract or encourage riders. Side paths expose bicyclists to unregulated conflicts at intersections. A more up-to-date project would alter the approach to design and ultimately could affect facility requirements.

There are impact concerns that the 2009 document did not address. These include the significant changes in CEQA to shift the analysis from LOS to VMT. There was no analysis of VMT in the 2009 document. The document also had no complete analysis of Section 4F impacts to recreational lands. Recreational uses tend to expand over the years. The Dog Park near Mission Boulevard may be impacted and the alternative to realign Osprey Drive through Arroyo Park is also not adequately discussed.

The extensive traffic analysis for the 2009 EIR does not suggest that the Quarry Lakes Parkway project will be effective in alleviating regional traffic circulation, alone or in combination with other projects. Many intersections are forecast to remain with poor level of service or will be degraded from existing conditions if the project is constructed. The analysis also suffers from a fundamental flaw that was common in older studies. It presumed traffic growth would occur largely unrestrained by circulation deficiencies and added the unrestrained traffic growth to existing or surely committed circulation facilities. The study then reveals that the entire circulation system is badly overburdened. This is because traffic levels have been forecast to increase everywhere. Everything needs to be widened or improved, and the proposed project becomes a component of “everything”.

The Quarry Lakes Parkway project is a very costly project that will not alleviate all circulation concerns or eliminate all deficiencies. The extent of deficiency forecast is not reasonable, especially near the project site. Existing conditions show a deficiency especially near I-880 as traffic is concentrated by the Dumbarton Bridge and squeezed onto or diverted from Decoto Road. An additional deficiency is noted approaching Niles Canyon Road, another point of traffic concentration.

Decoto Road is deficient at major intersections east of I-880, but the extent deficiency reduces moving further to the east. The Quarry Lakes Parkway addresses the deficiency by opening up Decoto Road near I-880 allowing additional traffic to pour onto Decoto Road. As a result, a future analysis will show deficiencies along all major intersections along Decoto Road, but these conditions may be lessened if it is widened to 6 lanes from I-880 east to Paseo Padre Parkway. It continues to show deficiencies east of Paseo Padre which are aggravated because of the increased flow to/from I-880. Quarry Lakes Parkway, despite its high cost, will not alleviate all

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circulation concerns. It also is unlikely to be heavily. The primary benefits of the new portion of the roadway area limited to alleviating at-grade railroad crossing issues that can be remedied through other approaches.

The documentation has indicated that Fremont is proceeding with the widening of Decoto Road to 6 through lanes and is jointly studying extension of this widening through Union City. This widening will be a much lower cost action to address local traffic conditions, but it is not reflected in recent traffic analyses. The traffic count included in the EIR shows that far more traffic turns to or from Decoto Road to the leg of Mission Boulevard north of the intersection and away from Niles Canyon. Any traffic that began on Decoto Road near I-880 has turned off Decoto long before reaching Mission Boulevard.

When ACTC handed the project over to Union City, they did suggest that the land use and traffic forecasts should be updated. Kittelson & Associates did prepare a recent memorandum that investigated the update process, but they did not conduct the suggested analysis. There was an analysis of trip generation, a comparison of existing traffic volumes with historical values, and an assessment of future travel times based upon travel demand models. The study noted that there were substantial land use increases locally but that traffic volumes had not changed. This experience is local proof that traffic forecasts that suggest extreme future congestion often do not materialize as expected. The study concluded that the analysis of 2009 did not need an update. It also noted that the Quarry Lakes Parkway project was not necessary to the approval of the proposed project.

Most significantly, the Kittelson study did not deeply investigate local traffic movements or indicate how usage of Quarry Lakes Parkway would be used. Due to its short length and the geometry of the local road system, the Parkway will not be the shortest route between many destinations. It would more likely be used as a bypass to travel a little further and a little longer to avoid more direct routes. The shortest way from the Dumbarton Bridge approach to Niles Canyon is via Decoto Road to Alvarado Niles Road, but this route was not even included in Kittelson's forecasted travel time analysis. The Quarry Lakes Parkway route is nearly $\frac{3}{4}$ mile longer. It would not be used for travel between these points without increasing local VMT.

The Kittelson study estimated future travel times based upon travel demand model outputs. These models use crude formulas to estimate travel time. The estimates are suitable for regional modeling, but they are not calibrated to produce accurate travel times on city street systems. Regional models are seldom used to forecast travel times on specific routes with precision, because travel times are based upon local factors that are not built into travel demand models.

It is more appropriate to use area travel demand forecasts as input to street and intersection LOS analyses. This step will continue to show that the deficiencies are large at critical bottlenecks such as the Dumbarton Bridge approach and Niles Canyon, but that the forecasted traffic cannot increase beyond the bottlenecks. The models also often show that the overall regional demand is 2-4 times the roadway system capacity, and any measure that increases capacity by the nominal

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amount of a single travel lane is quickly absorbed and the congestion either remains constant, moves to different locations, or gets worse because of attracted and newly generated traffic.

Recommendation #2: *The status of the Quarry Lakes Parkway, its cost, uncertainty, and other factors make it unreasonable to consider it as a committed project for 2040 in the project EIR. It should not be included as a committed project. There should be no inference that it is needed to allow the proposed project to be approved.*

Recommendation #3: *The 2009 EIR documentation for the Quarry Lakes Parkway project is out of date. It needs to be revised to reflect current CEQA guidelines, changes in the project description and the local setting. The traffic analysis should be updated to reflect current assumptions for land use, circulation improvements, and other factors that have changed since 2009. The project description should be revised to reflect state of the art approaches to multi-modal facilities that serve active transportation, and usage levels for the facility should be presented. These will show its limited value and that continued deficiencies will exist. The updated study will and ensure that local issues such as access to private properties and noise impacts are assessed properly. Project costs should be carefully reviewed to test whether it is the best use of \$300 million that does not exist for circulation improvements under current regulations and constraints.*

I am attaching my resume and qualifications to conduct this review and make comments. Please contact me if you have any questions.

Sincerely,
Rock E. Miller & Associates



Rock Miller, P.E.
Firm Principal / CEO

Resume

Rock E. Miller, P.E.

Mr. Miller is a registered Traffic and Civil Engineer in the State of California and has more than 45 years of transportation engineering, planning, design, and operations experience. He has formerly served as City Traffic Engineer for Costa Mesa and staff traffic engineer with the County of Orange. He is thoroughly familiar with the latest capabilities and requirements available and expected from cities and municipal governments. For more than 25 years, Mr. Miller has been a consultant at the senior or principal level in the field of traffic engineering, traffic safety, and circulation design.

Mr. Miller has completed a wide variety of unique transportation projects, including traffic impact studies, traffic signals, signing, striping, street lighting, work site traffic control, and the design of street and highway improvements. He has also prepared many transportation policy plans and completed controversial and complex transportation studies, including projects anticipating litigation by another public agency and projects with intense public opposition. Mr. Miller is well regarded for his ability to apply strong fundamental traffic engineering knowledge to custom situations. He has frequently been an invited speaker to regional and national conferences and committees on many topics, including pedestrian circulation and safety, urban bikeway design, traffic calming, traffic safety, and transportation policy.

Mr. Miller was elected and served as International President of the 15,000-member Institute of Transportation Engineers (ITE) in 2012. He received a Lifetime Achievement award from ITE's Western U.S. District in 2018. Mr. Miller is also an extension Faculty member for the University of California, Berkeley, Institute of Transportation Studies and teaches classes in Fundamentals of Traffic Engineering, the Manual of Uniform Traffic Control Devices (MUTCD), and Bikeway Design. He also serves as a voting member of the National Committee on Uniform Traffic Control Devices and as an alternate member to the California Traffic Control Devices Committee, two committees that oversee guidelines for use of traffic control devices in the U.S. and in California.

EDUCATION

MS, Civil Engineering, UC Davis, Davis, California, 1976

BS, Civil Engineering, UC Davis, Davis, California, 1973

REGISTRATIONS

Professional Engineer #11271-PE (Civil), State of Hawaii

Professional Engineer #1139 (Traffic), State of California

Professional Engineer #29493 (Civil), State of California

Certified Professional Traffic Operations Engineer #205, Institute of Transportation Engineers

WORK EXPERIENCE,

Firm Principal, Rock E. Miller & Associates, Orange, CA (2018-present)
Senior Principal, Traffic and Transportation, Stantec Consulting, Irvine, CA (2010 – 2018)
Principal, KOA Corporation/Katz, Okitsu & Associates, Orange CA (1995-2010)
Owner/Principal, Rock E. Miller & Associates, Tustin, CA (1990-1995)
Principal Engineer, Basmacyan-Darnell Associates, Irvine, CA (1987-1990)
City Traffic Engineer, City of Costa Mesa, CA (1979-1987)
Traffic Engineer, County of Orange, CA (1976-1979)
Instructor, UC Berkeley, Institute of Transportation Studies, Berkeley, CA (2002-present)

PROFESSIONAL ASSOCIATIONS

International President, Institute of Transportation Engineers (2012)
President, Institute of Transportation Engineers, Western District (2002)
Member, Association of Pedestrian and Bicycle Professionals
Member, American Society of Civil Engineers
Member, US Transportation Research Board: Bicycle Research Committee
Member, US National Committee on Uniform Traffic Control Devices
Associate, Congress for New Urbanism
Member California Zero Traffic Fatalities Task Force

SPECIALTY DISCIPLINES

Pedestrian Enhancement and Safety Studies
Bicycle Enhancement and Safety Studies
Modern Roundabout Application and Design
Traffic Signal System Design
Traffic Signal Timing Plans
Traffic Signs and Markings
Freeway Traffic Flow Analysis
Traffic Performance Improvements
Traffic Planning for Downtowns and Walkable Areas
Neighborhood Traffic Management

AWARDS

- 2005 43rd Annual Meeting Best Technical Presentation - : How Does the Chicken Cross the Road?
- 2001-2002 WesternITE Editors Award - In Pavement Flashing Crosswalks – State of the Art
- 2018 WesternITE Lifetime Achievement Award

PUBLICATIONS and PRESENTATIONS

- Traffic Signal Coordination, Myths and Realities. CA League of Cities Conference, 2008.
- Safety Experience with PPLT Conversions in California. ITE District 6 Annual Meeting, 2007.
- Designing Highway Facilities for Pedestrian Safety. Montana Joint Engineers' Council, 2005.
- Walkin' in L.A., Los Angeles Crosswalk Safety Study. For State of Utah, WASHTO-X, 2005.
- In-Pavement Flashing Crosswalks, State of The Art. TRB Urban Street Symposium, 2003.
- Can 25,000 Pedestrians Cross the Street Safely? ITE Spring Conference, 2003.
- Safety in Marked and Unmarked Crosswalks. Institute of Transportation Engineers, Traffic Engineering Council Newsletter, 2000
- What's Happening in Bicycle Friendly Long Beach, Institute of Transportation Engineers Northeast, Southern, Canadian, and Western Districts 2011-2012.
- Complete Streets and CEQA, Los Angeles County and San Diego Region Walk Symposiums, 2012.
- Pedestrians, Bicycles, and Roundabouts, Green Building Council, Long Beach, 2012.
- Separated Bikeways: Improving Safety and Operation through Design, Institute of Transportation Engineers Annual Meeting with CITE, 2017.
- Model Design Manual for Living Streets, Contributing Author, Los Angeles County Dept of Public Health, 2010.
- Complete Streets in LA, 1870-1980, Presentation to Los Angeles Regional Planning History Group Symposium, 2016
- New Technology in Bicycle Facilities. Presentation to SCAG Toolbox Tuesdays. 2015
- Bikeway Engineering in the 70s, a Turning Point. Transportation Research Board, 2018
- Divided by Design. Roads and Bridges Magazine, March 2018
- Width Requirements for Bikeways, A Level of Service Approach. Master's Thesis, UC Davis 1976.

3.7 Letter 6

Commenter: Jason R. Flanders, Aqua Terra Aeris Law Group

Date: December 21, 2020

Response 6.1

This commenter asserts the following:

1. The Draft EIR mischaracterized Quarry Lakes Parkway (QLP) as a local roadway instead of a “segmented” part of the East West Connector (EWC) project,
2. The EWC project will create significant regional traffic and air quality impacts that were not disclosed in the Draft EIR for this project or the 2009 EWC EIR, and
3. The traffic analysis in the Draft EIR for this project should be updated per the comments on Rock Miller.

The response about the characterization of QLP is provided in Response 6.2.

The EWC project was initially sponsored by the Alameda County Transportation Authority (ACTA), now known as the Alameda County Transportation Commission (ACTC). It proposed roadway and bikeway improvements between Mission Boulevard and Interstate 880, including a new roadway from Mission Boulevard to Paseo Padre Parkway, improvements to the existing Paseo Padre Parkway from north of Tamayo Street to Decoto Road, and improvements to Decoto Road from Paseo Padre Parkway to Interstate 880. That project was evaluated in the 2009 EWC EIR that was certified by ACTA. Different parts of that project are being implemented by the City of Union City and the City of Fremont. The Union City–led portion between Mission Boulevard and Paseo Padre Parkway is now called QLP. Because the entire project was analyzed in the 2009 EWC EIR, the project can be implemented in separate parts, or phases, by multiple parties. There is no improper “segmentation” under CEQA because the whole of the project has been analyzed.

As to comments regarding the environmental impacts of the EWC project or QLP and the alleged inadequacies of the 2009 EWC EIR, these are not comments on the Draft EIR for the Station East Residential/Mixed-Use Project. Station East is a separate project and does not include the EWC project or the QLP. The EWC project (including QLP) has completed its CEQA process. The certified 2009 EWC EIR was not legally challenged during the CEQA timeframe for a legal challenge. Therefore, the EWC is an approved project. Comments about the adequacy of the 2009 EWC EIR should have been made in a timely manner during the CEQA process for the EWC. Because the comments are not about the Station East Residential/Mixed-Use Project, under CEQA, they do not require a further response concerning the Draft EIR for the proposed project.

Regarding traffic impacts of the EWC project, refer to Response 6.8. Regarding the alleged air quality impacts of the EWC project, the 2009 EWC EIR analyzed air quality impacts in accordance with CEQA. This comment provides no specific information concerning alleged inadequacies in that analysis; therefore, no further response is required.

Regarding the comments by Mr. Rock Miller on the traffic analysis, refer to Responses 6.6 through 6.8.

Response 6.2

The commenter incorrectly states that the Draft EIR characterizes the proposed QLP as a local street. As summarized on page 4.14-19 of the Draft EIR, and consistent with the City's General Plan Mobility Element, QLP is identified as a local and regional improvement because it would provide direct multi-modal access to the Greater Station District, including the proposed Station East Residential/Mixed-Use Project, through connections at 7th and 11th Streets and improve regional east-west connectivity between Mission Boulevard and Interstate 880.

The commenter also asserts that QLP is oversized, adding that it will cause more bottlenecks and that the cumulative analysis for the project must be revised. These comments provide the commenter's opinions about the proposed QLP and do not pertain to the proposed Station East Residential/Mixed-Use Project. As noted in Response 6.1, the Draft EIR evaluates the impacts of the proposed Station East Residential/Mixed-Use Project and not the proposed QLP project. In addition, the comment does not identify any deficiencies in the cumulative analysis or provide any reason why the cumulative analysis should be revised. As noted on pages 4.14-18 and 4.14-19 of the Draft EIR, the cumulative analysis accounts for completion of QLP as currently designed. It is included in the Metropolitan Transportation Commission's 2019 Transportation Improvement Program and has reasonably foreseeable approval and funding. Therefore, the cumulative analysis for the Station East Residential/Mixed-Use Project, as presented in the Draft EIR, is adequate and does not need to be revised.

Response 6.3

The commenter states that the baseline setting from the 2006 DIPSA is out of date and incomplete because it does not include the historic 1884 Peterson Farm or the adjacent historic route of Old Alameda Creek or address issues pertaining to associated at-risk agricultural, cultural, and biological resources. The commenter states that the baseline should be updated to reflect existing conditions, according to CEQA requirements. The commenter also states that there is no presentation of the impacts on agricultural land. The commenter says that the DIPSA cumulative analysis is outdated.

The project being analyzed in this Draft EIR is the Station East Residential/Mixed-Use Project. This comment appears to concern the baseline setting for the EWC project (including QLP), which is not the project being analyzed in this EIR. The comment also references the historic 1884 Peterson Farm, Old Alameda Creek, and agricultural farmland. None of these features are within the area for the Station East Residential/Mixed-Use Project; the features are between 0.7 and 1.3 miles from the project site for the Station East Residential/Mixed-Use Project, either within or adjacent to the route for the EWC project (including QLP). As such, the Station East Residential/Mixed-Use Project would have no effect on the Peterson Farm, Old Alameda Creek, or agricultural farmland.

The Station East Residential/Mixed-Use Project is within the DIPSA—specifically, within the 105-acre Station East subarea of the DIPSA Specific Plan. Although the 2006 DIPSA Specific Plan does apply to the Station East Residential/Mixed-Use Project, the 2006 DIPSA Specific Plan and associated CEQA document were not used to establish the baseline for environmental analysis as part of the Station East Residential/Mixed-Use Project, particularly analysis pertaining to agricultural, cultural, biological, or other resource topics. Instead the Draft EIR used existing site conditions, database sources, aerial photography, site visits, and literature sources to characterize baseline conditions.

Regarding the cumulative analysis for the Station East Draft EIR, it is not based on the DIPSA cumulative analysis. As explained in Chapter 4, *Approach to Cumulative Impacts*, on page 4-2 of the Draft EIR, the cumulative analysis is based on the analysis of buildout in the General Plan EIR, which was adopted in 2019, and the effects of the Station East Residential/Mixed-Use Project. The General Plan EIR includes a recent analysis of cumulative conditions. This comment does not articulate any reason why the General Plan EIR does not provide appropriate information for use in the analysis of the cumulative impacts of the Station East Residential/Mixed-Use Project. The comment asserts inadequacies related to agricultural, cultural, and biological resources that are well outside the project area for the Station East Residential/Mixed-Use Project and would not be affected by the Station East Residential/Mixed-Use Project. Because the Station East Residential/Mixed-Use Project would not affect such resources, it would not contribute to any potential cumulative effect on them.

Response 6.4²⁸

This comment consists of a letter from the Alameda County Parks, Recreation, and Historical Commission. It describes prior evaluations and research, which determined that the Peterson Farm is potentially eligible for the National Register of Historic Places. The letter advocates for preservation of the farmhouse, outbuildings, and some of the surrounding open space. As noted above in Response 6.3, the Peterson Farm is not within or adjacent to the project area for the Station East Residential/Mixed-Use Project. It is approximately 0.8 mile southwest of the project area for the Station East Residential/Mixed-Use Project and would not be affected by the Station East Residential/Mixed-Use Project. As such, the information presented in this comment is not relevant to the impact analysis for the Station East Residential/Mixed-Use Project. The comment does not make any specific assertions about the adequacy of the impact analysis for the Station East Residential/Mixed-Use Project.

Response 6.5²⁹

This comment consists of a letter from the Washington Township Museum of Local History. It describes prior evaluations and research, which determined that the Peterson Farm is eligible for the National Register of Historic Places. The letter advocates for adding the Peterson Farm to the Landmark and Historic Preservation Overlay Zone list and preserving the property.

As noted above in Response 6.3, the Peterson Farmhouse is not within or adjacent to the project area for the Station East Residential/Mixed-Use Project. It is approximately 0.8 mile southwest of the project area for the Station East Residential/Mixed-Use Project and would not be affected by the Station East Residential/Mixed-Use Project. As such, the information presented in this comment is not relevant to the impact analysis for the Station East Residential/Mixed-Use Project. The comment does not make any specific assertions about the adequacy of the impact analysis for the Station East Residential/Mixed-Use Project.

²⁸ This response pertains to the attachment prepared by Alameda County Parks, Recreation, and Historical Commission, dated February 13, 2020.

²⁹ This response pertains to the attachment prepared by the Washington Township Museum of Local History dated December 10, 2020.

Response 6.6³⁰

The commenter confirms that the Draft EIR correctly relied on VMT and not level of service (LOS) to evaluate the impacts of the proposed project on transportation. The commenter also confirms the findings of the Draft EIR, which found that the project would not have a significant impact on VMT.

The commenter recommends that the Draft EIR provide an analysis of project impacts on traffic operations (i.e., LOS analysis) for the following reasons:

1. The Draft EIR already presents existing traffic volumes that could be used for traffic LOS analysis,
2. CEQA does not forbid a study of LOS at intersections,
3. To be consistent with the City's General Plan, and
4. To be consistent with ACTC requirements.

The Draft EIR does not include an analysis of the project's impact on intersection LOS for the following reasons:

- As stated in the comment, the Draft EIR presents existing peak-hour traffic volumes at intersections and existing average daily traffic volumes on roadway segments. Although not used to evaluate project transportation impacts, the traffic volumes were collected and presented in the Draft EIR to provide a full picture of existing transportation conditions in the project vicinity, similar to the detailed description of transit services and ridership provided in the Draft EIR. The collected traffic data were also used in the air quality and noise impact analyses for the project.
- The commenter states that CEQA does not forbid agencies from continuing to study LOS at intersections. However, California Public Resources Code Section 21099(b)(2) states that "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment." Thus, LOS or any similar traffic capacity analysis will not be completed as part of the CEQA document for the project.
- As stated in the comment, General Plan Policy M-4.3 sets LOS goals for signalized intersections on arterials and collectors during peak commute hours. However, as described above, CEQA documents cannot include LOS analyses. Consistent with CEQA requirements, General Plan Policy M-4.4 requires the City to use VMT to evaluate the transportation impacts of new development proposals under CEQA. Because the Draft EIR uses VMT to determine the impacts of the project on transportation, it is consistent with the City's General Plan.
- As stated in the comment, and noted on page 4.14-21 of the Draft EIR, ACTC uses a threshold of 100 or more evening peak-hour trips to determine if the impacts of a development project on the regional transportation network need to be evaluated for consistency with the ACTC Congestion Management Program (CMP). Typically, ACTC comments on a project NOP and/or EIR to inform a lead agency about the need to prepare a CMP or evaluate particular roadway segments. Because ACTC did not comment on the NOP or the published Draft EIR, a roadway segment LOS analysis was not completed for the project. Furthermore, as described above, any potential LOS analysis must be prepared outside the CEQA process. The General Plan EIR

³⁰ This response pertains to the attachment prepared by Rock E. Miller & Associates dated December 18, 2020.

(published June 2019) provides a recent evaluation of roadway LOS, consistent with ACTC requirements.

As described above, the Draft EIR does not include LOS or any other congestion-based analysis, consistent with state and local requirements.

Response 6.7

The comment states that the project includes QLP in a list of transportation facilities that are presumed to exist in the future. It notes that QLP has been the subject of controversy, has a “high” cost, and is not fully funded. The comment also states that the current design for QLP does not include state-of-the-art bicycle infrastructure.

As stated in Comment 6.1, the EWC project and QLP are not part of the Station East Residential/Mixed-Use Project. The EWC project was evaluated pursuant to CEQA. The certified EIR in 2009 was not legally challenged, and the project was adopted by ACTA at the time. Thus, comments concerning the impacts of the EWC project and QLP, as well as environmental review for the EWC project and QLP, are not comments on the environmental analysis in the Station East Draft EIR.

Regarding whether the EWC project (including QLP) can be presumed to be a project for the future in the Station East Draft EIR, the simple answer is yes. The project completed its required environmental review, supplemental environmental review is not warranted for the traffic issues raised in this comment (refer to further discussion in Response 6.8), and it is an approved project. The project has some, but not all, of its needed funding. Furthermore, the City has identified a phasing concept to implement the project over time. It is common for long-term projects to be implemented in phases while full funding is obtained. Thus, this comment does not introduce any evidence to demonstrate that QLP is infeasible because of funding at this time. Regarding the controversy, although some people may object or have concerns about the EWC project or QLP, the mere existence of controversy is not evidence that a project is not reasonably foreseeable.

Regarding bicycle infrastructure, the City has been updating the design of the bicycle infrastructure in the QLP portion of the EWC project, taking into consideration input from bicycle advocates. The City is of the opinion that the updated bicycle infrastructure will be safe and effective for bicyclists and pedestrians on QLP. A difference of opinion about QLP bicycle infrastructure does not constitute evidence of inadequacy within the environmental analysis for the Station East Draft EIR. Regardless, this comment about the QLP design is not a comment about the Station East Residential/Mixed-Use Project or the Station East Residential/Mixed-Use Project Draft EIR because the Station East Residential/Mixed-Use Project does not include the EWC project or QLP.

Response 6.8

The comment states that there are impact concerns regarding the EWC project and QLP that the 2009 EWC EIR did not address, including the impact of the project on VMT or recreational lands. The comment asserts that the 2009 EWC EIR traffic analysis does not support an argument that QLP will effectively alleviate traffic circulation issues because there will remain some intersections with a poor or worse LOS. It goes on to criticize the EWC project because it does not alleviate all circulation concerns or eliminate all deficiencies. The comment asserts that the 2009 EWC EIR traffic analysis is not correct because it used “unrestrained” traffic growth. The comment asserts that the 2009 EWC EIR (including QLP) is out of date and should be updated regarding the traffic analysis. In addition,

project costs should be carefully reviewed. The comment asserts that widening Decoto Road through Union City is a better approach than constructing the new QLP portion of the EWC project. The comment asserts that the 2020 transportation study by Kittleson & Associates did not deeply investigate local traffic movements and should have included a more detailed LOS analysis. The comment states that the City should not presume that QLP is a committed project for the Station East Draft EIR or that QLP is needed to allow the Station East Residential/Mixed-Use Project to be approved.

This comment presents the commenter's assertions and opinions concerning the EWC project (including QLP), its prior and recent transportation analysis, its 2009 EIR, and the cost. As stated in Response 6.1, the EWC project (including QLP) is not part of the Station East Residential/Mixed-Use Project. It was evaluated pursuant to CEQA. A certified EIR in 2009 was not legally challenged, and the project was adopted by ACTA at the time. The 2009 EWC EIR analyzed traffic in depth and found that the project would improve traffic conditions overall (in terms of travel time at certain intersections) but would not eliminate all traffic or circulation deficiencies. It would result in some traffic impacts due to the shifting of traffic volumes. The 2009 EWC EIR adopted feasible mitigation and made the appropriate findings where significant traffic impacts could not be feasibly mitigated to a less-than-significant level. There is no requirement in CEQA for a project to address, resolve, or improve all existing traffic circulation deficiencies. Regarding traffic growth over time, the 2009 EWC EIR used acceptable growth forecasts in the Alameda County travel demand model, which represented the best available information and modeling tools available during preparation of the EIR.

Regarding VMT, CEQA did not require analysis of VMT at the time of the 2009 EWC EIR. The requirement to consider VMT as a metric of transportation impact was not mandatory in CEQA until July 1, 2020.

Regarding the assertion that the 2009 EWC EIR should be updated relevant to issues regarding the traffic analysis, changes in traffic volumes over time, or changes in CEQA requirements regarding VMT, in fall 2020, Union City assessed whether any of these issues would trigger the need for supplemental CEQA review of the EWC project. As documented in a memorandum prepared by ICF,³¹ a memorandum prepared by the City's outside legal counsel,³² and a related transportation memorandum,³³ all three of which are hereby incorporated by reference, supplemental CEQA review is not triggered by any of these considerations. This conclusion was concurred with by ACTC. First and foremost, as described in these references, CEQA supplemental review by Union City is not triggered because ACTA and Union City have already approved the project. No further discretionary approvals are needed from these agencies for the project (CEQA is triggered only by discretionary approvals by a project agency). Furthermore, even if there were a discretionary approval, supplemental CEQA review would not be triggered unless the project changes or there is a change in physical conditions that would give rise to a new significant or substantially more severe impact.

³¹ ICF. 2020. RE: Quarry Lakes Parkway, Transportation Memorandum, May 2020. . June 15. Available: https://www.unioncity.org/DocumentCenter/View/4494/QLP_Transportation_Memo_ICF_CEQA_061520. Accessed: February 4, 2021.

³² Meyers Nave. 2020. Quarry Lakes Parkway – CEQA Opinion. June 15. Available: <https://www.unioncity.org/DocumentCenter/View/4493/Final-CEQA-Opinion-on-Quarry-Lake-Parkway>. Accessed: February 4, 2021.

³³ Kittleson & Associates. 2020. Quarry Lakes Parkway Transportation Memorandum. Last revised: October 22, 2020. Available: https://www.unioncity.org/DocumentCenter/View/4496/23493_QLP-Transportation-Memo_10-22-2020. Accessed: February 4, 2021.

The project changes reflected in the current QLP design relevant to the project description in the 2009 EWC EIR are minor in character and do not give rise to new significant or substantially more severe impacts. As summarized in the references, although traffic growth was slower through 2019 compared to estimates in the 2009 EWC EIR, the long-term forecast for traffic is a rough portrayal of approximate long-term conditions. Traffic will eventually reach the levels estimated in the EIR but occur a few years later, which does not change the impact analysis conclusions. Even if there were differences in traffic delay/congestion impacts, traffic delay or traffic congestion (or LOS) is no longer a measure of a significant impact pursuant to the changes in CEQA due to SB 743. As summarized in the references, the introduction of a new CEQA requirement (such as the VMT analysis required pursuant to changes in CEQA due to SB 743) does not trigger the need for supplemental CEQA review. In addition, as described in the 2020 Kittleson transportation memorandum, the EWC project would actually slightly reduce VMT; even if supplemental review were required (which it is not), the EWC project would not result in a significant VMT impact.

The 2020 Kittleson transportation memorandum is not a CEQA document and does not concern the Station East Residential/Mixed-Use Project. Thus, concerns about desires for more analysis or a different analysis of the EWC project (including QLP) are not concerns regarding the adequacy of the environmental analysis for the Station East Draft EIR, and no further response to such comments is required.

Regarding the assertion that the analysis of impacts for the EWC project and QLP on recreational lands, including Drigon Dog Park near Mission Boulevard and Arroyo Park, in the 2009 EWC EIR was inadequate, the 2009 EWC EIR specifically analyzed and disclosed the project's impact on both Arroyo Park and the Drigon Dog Park near Mission Boulevard. These parks are in the same location analyzed in the 2009 EWC EIR. This comment does not substantiate any specific deficiencies in the 2009 EWC EIR. The 2009 EWC EIR disclosed the impacts on these parks and adopted mitigation for any significant CEQA impacts. The comment also asserts that there was no "complete analysis of Section 4F impacts." The commenter is referring to Section 4(f) of the federal Transportation Act of 1966, which applies to federally funded projects or projects authorized by the U.S. Department of Transportation that affect publically owned recreational lands. The 2009 EWC EIR is a CEQA document; although CEQA does require assessment of certain impacts related to recreation, CEQA does not require a Section 4(f) analysis. Section 4(f) applies only to federally funded or U.S. Department of Transportation-authorized transportation projects. To date, the EWC project (including QLP) is not federally funded and is not a U.S. Department of Transportation project. If federal funds are sought in the future (or the U.S. Department of Transportation otherwise needs to provide approval), then Section 4(f) compliance will be analyzed as appropriate.

As noted above in Response 6.7, regarding whether the EWC project (including QLP) can be presumed to be a project for the future in the Station East Draft EIR, the simple answer is yes. The project has completed its required environmental review, supplemental environmental review is not warranted for traffic issues raised in this comment, and it is an approved project. The project has some, but not all, of its needed funding. Furthermore, the City has identified a phasing concept to implement the project over time. It is common for long-term projects to be implemented in phases while full funding is obtained. Thus, this comment does not introduce any evidence to demonstrate that QLP is infeasible because of funding at this time.

Regarding whether the Station East Residential/Mixed-Use Project "requires" the EWC project (including QLP) or the EWC project is a condition of approval for the Station East Residential/Mixed-Use Project, the EWC project (including QLP) is a previously approved project. The EWC (including

QLP) is not necessary, under CEQA, to address any traffic delay or congestion conditions (or traffic LOS) because traffic delay/congestion/LOS is no longer a significant impact under CEQA. Thus, the EWC project (including QLP) is not necessary to avoid a CEQA significant impact relative to traffic delay/congestion/LOS. There is no requirement in CEQA to condition approval of the Station East Residential/Mixed-Use Project on the EWC project (or QLP).

Chapter 4

Corrections and Additions to the Draft EIR

The following section provides a summary record of all proposed text corrections, changes, and additions to the Draft EIR. These changes are the result of document review during the public review period, as outlined in Section 2.3 of this Final EIR. These changes serve to clarify and amplify the content of the EIR. None of the changes would result in alterations to degree of impact or conclusions presented in the Draft EIR, and therefore do not constitute significant new information, in accordance with *CEQA Guidelines* Section 15088.5. Rather, the changes serve to clarify and strengthen the content of the EIR. Accordingly, recirculation is not warranted.

Subsequent to the preparation of the Draft EIR, the project was revised to replace eight parking spaces on 7th Street adjacent to Shorty Garcia Park. These spaces would replace on-street parking eliminated between Decoto Road and K Street as a result of the project. These spaces would require approximately 2,530 square feet and would be accommodated by widening 7th Street only where the eight-stall parking bay is located.

This potential change to the project would not result in any changes to any of the Draft EIR's impact conclusions or mitigation measures.

Regarding transportation, other characteristics of this segment of 7th Street, such as the number of automobile and bicycle lanes in each direction and the provision of sidewalks on both sides of the street, would continue to be the same as assumed in the Draft EIR. In addition, the design for 7th Street would continue to comply with the applicable design standards.

Regarding air quality and noise, this revision to the project would only add additional construction days and haul trips to the demolition and grading phases; the overall duration of construction and construction intensity would remain the same as assumed in the Draft EIR. Nonetheless, in an abundance of caution and to ensure there would be no changes to the air quality impacts disclosed in the Draft EIR, the criteria pollutant emissions for the proposed project (including the revisions to the project) were remodeled; the results of the remodeling are provided in Section 4.1, *Air Quality*, below. As discussed therein, as a result of this revision to the project, there would be no changes to any of the air quality impact conclusions disclosed in the Draft EIR. Similarly, the small change in construction greenhouse gas emissions as a result of this revision to the project would not change the energy consumption for the project and there would be no changes to the energy impacts disclosed in the Draft EIR.

Revisions to the Draft EIR text are shown using ~~striketrough~~ to show where text has been deleted and underline font to show where text has been added. All page references are to the Draft EIR.

Acronyms and Abbreviations

Page viii:

ROG Emissions—Reactive Organic Gas Emissions

Chapter 1, Executive Summary

Table 1-1. Summary of Potential Project Impacts and Mitigation Measures:

Impacts	Mitigation Measures	Resulting Level of Significance
Less-than-Significant Impacts after Mitigation		
<p>Impact AQ-2b: The proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or State ambient air quality standard during concurrent construction and operation.</p>	<p>Implement Mitigation Measures AQ-2a, AQ-2b, AQ-2c, and AQ-2d, described above.</p> <p>Mitigation Measure AQ-2e: Require Low-VOC Coatings during Operation The project applicant shall <u>provide in their CC&Rs a provision to</u> require their contractors, as a condition of contract, to reduce operation-related fugitive ROG emissions by ensuring that low-VOC coatings that have a VOC content of 10 grams/liter (g/L) or less are used during operation. Prior to the completion of construction, the project applicant shall submit evidence to the City documenting the use of low-VOC coatings.</p> <p>Mitigation Measure AQ-2f: Require Use of Green Consumer Products during Operation The project applicant shall provide <u>in their CC&Rs for education of</u> for residential and commercial <u>occupants requiring tenants concerning</u> green consumer products. Prior to receipt of any certificate of final occupancy, the project applicant shall work with the City of Union City to <u>develop appropriate communications regarding electronic correspondence to be distributed by email to new residential and commercial tenants that require the purchase of</u> consumer products that generate lower than typical VOC emissions. Examples of green products may include low-VOC cleaning supplies and consumer products.</p>	LTSM
<p>Impact GHG-1a: The proposed project could generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment during construction.</p>	<p>Mitigation Measure GHG-1a: Require Implementation of BAAQMD-recommended Construction BMPs The project sponsor shall require their contractors, as a condition of contracts (e.g., standard specifications), to reduce construction-related GHG emissions by implementing BAAQMD's recommended best management practices, including (but not limited to) the following measures (based on BAAQMD's CEQA Guidelines). The project applicant shall submit evidence of compliance to the City prior to permit issuance.</p> <ul style="list-style-type: none"> • Ensure alternative fueled (e.g. biodiesel, electric) construction vehicles/equipment make up at least 15 percent of the fleet • Use local building materials of at least 10 percent (sourced from within 100 miles of the Planning Area) • Recycle and reuse at least 50<u>65</u> percent of construction waste or demolition materials 	LTSM

Impacts	Mitigation Measures	Resulting Level of Significance
<p>Impact GEO-7: The project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.</p>	<p>Mitigation Measure GEO-7: Paleontological Monitoring and Mitigation Plan</p> <p>Prior to initial ground disturbance in previously undisturbed strata of geologic units with high sensitivity, the applicant shall retain a Qualified Paleontologist, as defined by the Society of Vertebrate Paleontology, to direct all mitigation measures related to paleontological resources and design a Paleontological Mitigation and Monitoring Program (PMMP) for the proposed project. The PMMP shall include measures for a preconstruction survey, a training program for construction personnel, paleontological monitoring, fossil salvage, curation, and final reporting, as applicable.</p>	LTSM
<p>Impact HAZ-2: The project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.</p>	<p>Mitigation Measure HAZ-2a: Site Management Plan</p> <p>Prior to issuance of a grading permit, the project sponsor shall retain the services of a qualified environmental engineering firm to prepare and implement, during site preparation and grading activities, a Site Management Plan (SMP). The SMP shall be designed to protect human health and the environment and include protocols, measures, and techniques for the proper handling, management, and disposition of affected soils <u>and groundwater associated with construction dewatering (if any)</u> found on the site and any areas of off-site work during site preparation and grading activities. The SMP shall also be designed to protect workers and off-site receptors during site activities and ensure the proper characterization, management, and/or disposal of contaminated environmental media that is above applicable Environmental Screening Levels (ESLs). <u>established by the RWQCB, regional screening levels established by EPA, or other screening thresholds approved for the project. The environmental engineering firm shall determine the applicability of Bay Area Air Quality Management District (or other agency) rules for fugitive dust control and/or VOC emissions during earthwork, and the SMP shall provide compliance protocols to be adhered to, including air monitoring protocols, if required.</u> The SMP shall be prepared by a commercial environmental engineering firm with demonstrated expertise and experience in the preparation of SMPs and be stamped by an appropriately licensed professional. The SMP shall be submitted for City and outside agency review in conformance with DIPSA Specific Plan, Toxic and Hazardous Substances Policy 5, and implemented throughout all ground-disturbing work.</p> <p>The SMP shall establish protocols and measures for addressing the discovery of presently unknown environmental conditions or subsurface structures such</p>	LTSM

Impacts	Mitigation Measures	Resulting Level of Significance
	<p>as USTs or sumps. <u>At a minimum, there shall be protocols for the sampling and testing of soil unearthed during the construction of new or replacement of existing water mains off-site.</u> If the environmental engineering firm subsequently identifies the need for further sampling, the project sponsor shall implement this and any other requirements identified in the SMP. The project sponsor shall enter into a voluntary agreement with the San Francisco Bay Regional Water Quality Control Board (RWQCB) for review and approval of the SMP. As lead agency for the site cleanup, the RWQCB will also have oversight authority pertaining to implementation of the SMP. If directed by the RWQCB, additional site investigation and characterization may be required prior to construction to ensure that hazardous materials in the soil, soil vapor, and/or groundwater do not exceed applicable regulatory thresholds. If additional site investigation and characterization is required prior to construction, the project sponsor shall implement said studies (and their respective recommendations, if necessary) prior to construction. The RWQCB will also consult and coordinate with the ACWD on the scope of the SMP. The project sponsor shall provide a copy of the SMP to the ACWD at the same time the SMP is submitted to the RWQCB for review and comment. <u>As part of its review of the SMP, the ACWD shall also review the design of long-term drainage and stormwater treatment plans. The project sponsor shall incorporate all recommendations and requirements from the ACWD into the SMP and drainage/stormwater treatment plans as appropriate.</u> As the oversight agency, the RWQCB shall provide the project sponsor with comments on the SMP. Prior to issuance of the grading permit, the project sponsor shall provide the City with a copy of the approved SMP and implement the SMP during site preparation and grading under the approving agency's oversight at the project sponsor's cost.</p> <p>Mitigation Measure HAZ-2b: Engineering Controls on the Project Site Prior to the issuance of grading permits, the project sponsor shall demonstrate compliance with the recommendations in the <i>Step-out Soil Gas Assessment</i> (ENGEO 2013) to address vapor intrusion concerns. Implementation of engineering controls shall be implemented on the project site in accordance with the <i>Step-out Soil Gas Assessment</i> (ENGEO 2013) to address the presence of elevated VOCs (in areas where TCE and PCE concentrations exceeded residential screening levels). Engineering controls shall be installed to redirect and or minimize VOC concentrations. Said</p>	

Impacts	Mitigation Measures	Resulting Level of Significance
	<p>engineering controls shall consist of controls that allow for passive <u>appropriate</u> ventilation and discharge of the vapors into the atmosphere.</p> <p>Specific engineering controls may include, but will not be limited to:</p> <ul style="list-style-type: none"> • Installation of subsurface migration barriers; and/or • Inclusion of ventilated foundations for any proposed structures; and/or • The use and implementation of an alternative method or structural design that would address soil gas releases and reduce the potential for hazardous conditions to occur. <p>Appropriate engineering control system(s) shall be determined with concurrence, approval, and oversight of the DTSC and RWQCB, and shall be dependent on future building placement and construction. (as applicable) <u>and shall be dependent on future building placement and construction. Any DTSC requirements for long-term operation, monitoring, and maintenance (OMM) of the vapor mitigation systems shall be complied with, including any requirements to secure the cost of such OMM with a financial security instrument such as a performance bond. Any land use covenant required by DTSC to ensure the long-term efficacy of the vapor mitigation systems shall be recorded in property title records by the project sponsor or successor owner.</u> If monitoring or extraction wells remain in place at the time that engineering controls are submitted to DTSC and RWQCB, the <u>placement of such</u> engineering controls shall <u>ensure that building placement will either</u> not interfere with operation of the well facilities; or that DTSC and/or RWQCB <u>shall</u> have approved any required modifications to the well facilities.</p> <p><u>Prior to project grading, the project sponsor shall enter into a voluntary oversight agreement (or CLRRRA agreement) with DTSC and submit for DTSC's approval a remedial plan for the evaluation and removal of known hazardous substances present in soil. The remedial plan shall specify risk-based screening levels appropriate for future residential use (in the residential areas) and for commercial use (in the commercial areas). The project sponsor shall implement the approved remedial plan under DTSC's oversight. Confirmation sampling shall document that all soil exceeding the screening levels has been successfully removed. Prior to commencement of project grading, DTSC shall have issued written concurrence that known soil contamination has been satisfactorily addressed. The project sponsor shall</u></p>	

Impacts	Mitigation Measures	Resulting Level of Significance
	<p><u>provide a copy of DTSC's written concurrence to the City.</u></p> <p>Mitigation Measure HAZ-2c: Conduct a Hazardous Building Materials Survey prior to Demolition Activities</p> <p>Prior to the issuance of a demolition permit, a comprehensive Hazardous Building Materials Assessment shall be conducted by a licensed contractor prior to demolition activities associated with the project. Should this assessment determine that lead-based paint, <u>treated-wood waste</u>, and/or asbestos or other hazardous building materials are present, the following actions shall be implemented:</p> <ul style="list-style-type: none"> • A health and safety plan shall be developed by a certified industrial hygienist for potential lead-based paint, asbestos or other hazardous building materials risks present during demolition. The health and safety plan shall then be implemented by a licensed contractor. • Both the federal Occupational Safety and Health Administration (OSHA) and the California Occupational Safety and Health Administration (Cal/OSHA) regulate worker exposure during construction activities that affect lead-based paint. The Interim Final Rule found in 29 Code of Federal Regulations, Part 1926.62 covers construction work in which employees may be exposed to lead during such activities as demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance. • Acquire necessary approvals from the City and/or County for specifications or commencement of abatement activities. Abatement activities shall be conducted by a licensed contractor. • Prior to demolition of construction debris containing asbestos the Bay Area Air Quality Management District (BAAQMD) shall be notified ten days prior to initiating construction and demolition activities. Demolition permit submittal to the City shall include BAAQMD Asbestos Demolition/Renovation job number (J#) and related BAAQMD acknowledgement letter. • Asbestos shall be disposed of at a licensed disposal facility. Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. • The local office of the Cal/OSHA shall be notified of asbestos abatement activities. 	

Impacts	Mitigation Measures	Resulting Level of Significance
	<ul style="list-style-type: none"> Asbestos abatement contractors shall follow State regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos containing material. Asbestos removal contractors shall be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur shall have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services in Sacramento. Contractors and subcontractors shall comply with Union City Municipal Code 13.42.050 in performing a priority building materials screening assessment. <p>The contractor and hauler of hazardous building materials shall file a Hazardous Waste Manifest that details the hauling of the material from the site and the disposal of it. Pursuant to California law, the City of Union City shall not issue the required permit until the applicant has complied with the notice requirements described above.</p>	
<p>Impact NOI-1: The project could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.</p>	<p>Mitigation Measure NOI-1a: Construction Noise Control Plan</p> <p>Prior to demolition or grading permit issuance, the project applicant shall submit a noise control plan to reduce construction noise levels such that project construction noise would be in compliance with the City's Community Noise Ordinance, as determined by a qualified acoustical consultant, for approval by the Economic and Community Development Department. The plan shall require one of the following measures in order to achieve this result:</p> <ul style="list-style-type: none"> Noise producing construction activities shall be restricted to the hours of 8:00 a.m. to 8:00 p.m. during weekdays; 9:00 a.m. to 8:00 p.m. on Saturdays; and 10:00 a.m. to 6:00 p.m. on Sundays and holidays. In addition, permitted construction activities shall meet at least one of the following noise limitations: <ul style="list-style-type: none"> No individual piece of equipment shall be permitted to produce a noise level exceeding 83 dBA as measured at a distance of 25 feet. This could be achieved in a variety of ways, including but not limited to selecting quieter equipment that generates noise levels of less than 83 dBA L_{max} at a distance of 25 feet, or incorporating sound muffling devices on construction equipment; 	LTSM

Impacts	Mitigation Measures	Resulting Level of Significance
	<p>OR</p> <ul style="list-style-type: none"> ○ The noise levels at any point outside the property plane¹ of the project shall not exceed 86 dBA. This could be achieved in a variety of ways, including but not limited to ensuring equipment is operating at sufficient distances from the edge of the project site property line, incorporating sound muffling devices on construction equipment, or utilizing temporary noise barriers to reduce construction noise when construction equipment must be in proximity to the edge of the property line (particularly near noise-sensitive land uses). ● All construction equipment shall have appropriate sound muffling devices, which shall be properly maintained and used at all times such equipment is in operation. ● The project contractor shall place all stationary construction equipment so that emitted noise is directed away from the closest off-site sensitive receptors. ● The construction contractor shall locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and the noise-sensitive receptors closest to the project construction areas. ● A publicly visible sign shall be posted with the telephone number and contact information for the designated on-site construction manager available to receive and respond to noise complaints. This person shall report all complaints to the City of Union City Public Works Department. <p>Mitigation Measure NOI-1b: Operational Equipment Noise Control Plan</p> <p>An Operational Equipment Noise Control Plan shall be prepared prior to issuance of the first City-issued building permit for the proposed development for approval by the Public Works Department and Building Division. The plan shall include a noise analysis for the project that evaluates HVAC and other stationary mechanical equipment with the potential to generate noise levels in excess of ambient noise levels by 10 dB on new residential properties and by 12 dB on new commercial properties.</p> <p>The analysis shall be prepared by persons qualified in acoustical analysis and/or engineering and demonstrate with reasonable certainty that the operational noise sources associated with the project would not result in a</p>	

¹ For the purposes of this analysis, the “property plane” is assumed to be the boundaries of the project site.

Impacts	Mitigation Measures	Resulting Level of Significance
	noise level that would be in excess of the Community Noise Ordinance. All recommendations from the acoustical analysis necessary for ensuring that noise sources would meet applicable requirements of the noise ordinance and would not result in 10 dB (for sources on residential properties) or 12 dB (for sources on commercial properties) increases in ambient noise levels shall be incorporated into plans submitted for building permit issuance and building operation.	

Chapter 2, Introduction

Page 2-1:

The EIR is intended to enable City decision makers, public agencies, and interested ~~citizens~~ people to evaluate the environmental issues associated with the proposed project.

Chapter 3, Project Description

Page 3-20:

The existing traffic signal at the 7th Street and Decoto Road intersection would be upgraded to provide protected left turns.

Page 3-20:

The project would also provide buffered bike lanes on both sides of 7th Street between Decoto Road and Bradford Way within the existing right-of-way by eliminating the existing on-street parking on the west side of the street between Decoto Road ~~K Street~~ and Bradford Way and eliminating the existing on-street parking on the east ~~both~~ sides of the street between Decoto Road and K Street; however, the project would replace eight parking spaces on 7th Street adjacent to Shorty Garcia Park by widening the street only where the eight-stall parking bay will be included.

A future proposed two-way bike path ~~would~~ may ultimately be ~~provided~~ completed by others in the future on the east side of 7th Street south of Bradford Way by eliminating on-street parking on one side of the street; however, this is not ~~is not~~ part of the project. The future two-way bike path on 7th Street ~~would~~ may continue south and connect with the planned path adjacent to the future Quarry Lakes Parkway.

Page 3-28 (added to list of ministerial actions required for the project):

- Drilling permit (in the event that dewatering is required during project construction)

Section 4.1, Air Quality

Page 4.1-14:

The BAAQMD has local air quality jurisdiction over projects in the SFBAAB, including ~~San Mateo County~~ Alameda County.

Page 4.1-20:

As described in Section 4, Environmental Impact Analysis Corrections and Additions to the Draft EIR, subsequent to the drafting of this EIR, the applicant indicated that the residential units associated with proposed project would increase by 10, from 964 to 974 units subsequent to the preparation of the Draft EIR, the project was revised to replace eight parking spaces (approximately 2,530 square feet) on 7th Street adjacent to Shorty Garcia Park by widening the street. As described therein, the analysis presented throughout this EIR adequately accounts for the potential environmental impacts of the buildout modeled in the Draft EIR of the 974 new

~~residential units and the additional eight parking spaces on 7th Street adjacent to Shorty Garcia Park.~~

Page 4.1-26:

Horizontal construction would include all major streets on the entire project site as well as required off-site street improvements, including a new approximately 2,530-square foot parking area along 7th Street adjacent to Shorty Garcia Park, to replace the eliminated on-street parking on both sides of the street between Decoto Road and K Street.

Page 4.1-27:²

Table 4.1-5. Estimated Unmitigated Criteria Pollutant Emissions from Construction of the Proposed Project (pounds/day)

Construction Year	ROG	NO _x	CO	PM ₁₀		PM _{2.5}	
				Dust	Exhaust	Dust	Exhaust
2021	<u>8</u> <u>13</u>	<u>103</u> <u>150</u>	<u>58</u> <u>98</u>	9	<u>4</u> <u>6</u>	4	<u>3</u> <u>5</u>
2022	51	<u>71</u>	73	8	3	2	2
2023	47	30	40	8	1	2	1
2024	<u>66</u>	30	41	9	1	2	1
2025	22	19	25	3	1	1	1
BAAQMD Threshold	54	54	None	BMPs	82	BMPs	54
Exceed Threshold?	Yes	Yes	N/A	-	No	-	No

Source: See **Appendix 4.1** for CalEEMod outputs.

Notes:

Exceedances of the BAAQMD thresholds are underlined.

Subsequent to the preparation of the Draft EIR, the project was revised to replace eight parking spaces on 7th Street adjacent to Shorty Garcia Park by widening the street. This new eight-space parking area (approximately 2,530 square feet) would involve an additional day of construction during the demolition and grading phase under Phase 1 only, thus increasing the criteria pollutant emissions from construction during 2021. Table 4.1-5 of the Draft EIR has been revised to show this increase.

ROG= reactive organic gases; NO_x = nitrogen oxide; CO = carbon monoxide; PM₁₀ = particulate matter no more than 10 microns in diameter; PM_{2.5} = particulate matter no more than 2.5 microns in diameter; BAAQMD = Bay Area Air Quality Management District; BMPs = best management practices.

Page 4.1-28:

Although construction of the proposed project would contribute to future ROG and NO_x emissions, maximum daily construction-generated emissions represent approximately 0.01 percent of total ROG and 0.03 percent NO_x in the SFBAAB, respectively.³

² Revisions to the Draft EIR in this table are double underlined; exceedances of the BAAQMD thresholds are underlined.

³ ROG and NO_x emissions reported in the 2017 Clean Air Plan totaled 259 and 300 tons per day, respectively. Maximum unmitigated project-generated ROG and NO_x emissions would be 66 and ~~145~~ 150 pounds per day, respectively, which equates to 0.033 and ~~0.0725~~ 0.0750 tons per day, respectively.

Page 4.1-28:

Table 4.1-6. Estimated Mitigated Criteria Pollutant Emissions from Construction of the Proposed Project (pounds/day)

Construction Year	ROG	NO _x	CO	PM ₁₀		PM _{2.5}	
				Dust	Exhaust	Dust	Exhaust
2021	23	1822	59101	78	< 1	2	< 1
2022	8	7	74	7	< 1	2	< 1
2023	7	4	46	7	< 1	2	< 1
2024	9	4	40	8	< 1	2	< 1
2025	3	3	26	3	< 1	1	< 1
BAAQMD Threshold	54	54	None	BMPs	82	BMPs	54
Exceed Threshold?	No	No	N/A	--	No	--	No

Source: See **Appendix 4.1** for CalEEMod outputs.

Notes:

Emissions assumes the implementation of Mitigation Measures AQ-2a through AQ-2c. However, implementation of dust BMPs have not been explicitly quantified, other than watering two times a day and limiting speed to 15 miles per hour per Mitigation Measure AQ-2d, but would be required.

Subsequent to the preparation of the Draft EIR, the project was revised to replace eight parking spaces on 7th Street adjacent to Shorty Garcia Park by widening the street. This new eight-space (approximately 2,530 square feet) would involve an additional day of construction during the demolition and grading phase under Phase 1 only, thus increasing the criteria pollutant emissions from construction during 2021. Table 4.1-6 of the Draft EIR has been revised to show this increase.

ROG= reactive organic gases; NO_x = nitrogen oxide; CO = carbon monoxide; PM₁₀ = particulate matter no more than 10 microns in diameter; PM_{2.5} = particulate matter no more than 2.5 microns in diameter; BAAQMD = Bay Area Air Quality Management District; BMPs = best management practices.

Page 4.1-31:

Mitigation Measure AQ-2e: Require Low-VOC Coatings during Operation

The project applicant shall provide in their CC&Rs a provision to require their contractors, as a condition of contract, to reduce operation-related fugitive ROG emissions by ensuring that low-VOC coatings that have a VOC content of 10 grams/liter (g/L) or less are used during operation. ~~Prior to the completion of construction, the project applicant shall submit evidence to the City documenting the use of low-VOC coatings.~~

Page 4.1-32:

Mitigation Measure AQ-2f: Require Use of Green Consumer Products during Operation

The project applicant shall provide in their CC&Rs for education of ~~for~~ residential and commercial occupants requiring tenants concerning green consumer products. Prior to receipt of any certificate of final occupancy, the project applicant shall work with the City of Union City

Bay Area Air Quality Management District. 2017a. *Final 2017 Clean Air Plan*. Adopted April 19. Available: https://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed: March 16, 2020.

to develop appropriate communications regarding electronic correspondence to be distributed by email to new residential and commercial tenants that require the purchase of consumer products that generate lower than typical VOC emissions. Examples of green products may include low-VOC cleaning supplies and consumer products.

Page 4.1-38:

Subsequent to the preparation of the Draft EIR, the project was revised to replace eight parking spaces on 7th Street adjacent to Shorty Garcia Park by widening the street. The development of this new parking area would add an additional day of construction to the Phase 1 grading and demolition phases, which would fall during the 3rd trimester exposure scenario. Due to this change, the AERMOD model was revised to include this new area in the AREAPOLY for the 3rd trimester scenarios, where Phase 1 demolition and grading occur. The 0-2 year and 2-9-year scenarios did not change from what was previously modeled, as construction of this parking area would be completed prior to these exposure scenarios. The revised emission rates, risk calculations, and AERMOD results are provided in Appendix 4.1. Table 4.1-12 presents the maximum mitigated construction-related health risks for the maximum exposed offsite receptor within 1,000 feet of construction activities and the onsite receptors who would occupy portions of the project site during construction.

Page 4.1-39:

Table 4.1-12. Mitigated Project-level Cancer and Chronic Hazard Risks and PM_{2.5} Concentrations During Construction

Receptor	Cancer Risk (cases per million)	Non-Cancer Hazard Index	Annual PM _{2.5} Concentration (µg/m ³)
Maximum Exposed Offsite Receptor ^a	8.94 8.83	< 0.01	0.22
Maximum Exposed Onsite Receptor ^b	3.57	< 0.01	0.21
Significance Threshold	10	1	0.3
Exceed Threshold?	No	No	No

Source: See **Appendix 4.1** for modeling outputs and calculations.

Notes:

Emissions assumes the implementation of Mitigation Measure AQ-2b and AQ-2c. However, implementation of dust best management practices, other than watering two times a day and limiting speed to 15 miles per hour, have not been explicitly quantified per Mitigation Measure AQ-2d, but would be required.

µg/m³ = micrograms per cubic meter; PM_{2.5} = particulate matter no more than 2.5 microns in diameter

^a The maximum exposed offsite receptor is not the same for cancer risk, non-cancer hazard index, and annual PM_{2.5} concentration. The highest offsite cancer risk and non-cancer hazard index can be found at a residential receptor located adjacent to 7th Street and Bradford Way, while the highest offsite annual PM_{2.5} concentration can be found at Shorty Garcia Park, adjacent to 7th Street. The receptor with the highest PM_{2.5} concentration at Shorty Garcia Park is within the proposed new 7th Street parking area. Therefore, this receptor was removed during the 3rd trimester exposure scenario when construction of this parking area would take place. However, this receptor was kept for the 0-2 year and 2-9-year exposure scenarios as construction of the parking lot would be complete and operational by then. The highest offsite cancer risk, non-cancer hazard index, and annual PM_{2.5} concentration among the receptors are shown in this table.

^b This receptor is located at the center project site.

Page 4.1-40:

Table 4.1-14. Total Project-level Cancer and Chronic Hazard Risks and PM_{2.5} Concentrations (Construction and Operation)

Receptor	Cancer Risk (cases per million)	Non-Cancer Hazard Index	Annual PM _{2.5} Concentration (µg/m ³)
Maximum Exposed Receptor ^a	8.98 8.87	0.01	0.21 0.22
Significance Threshold	10	1	0.3
Exceed Threshold?	No	No	No

Notes: µg/m³ = micrograms per cubic meter; PM_{2.5} = particulate matter no more than 2.5 microns in diameter

^a The maximum exposed receptor is not the same for cancer risk, non-cancer hazard index, and annual PM_{2.5} concentration. The highest cancer risk, non-cancer hazard index, and annual PM_{2.5} concentration from Table 4.1-12 (mitigated) were added to the risks and concentration in Table 4.1-13 and presented in this table.

Page 4.1-43:

Table 4.1-15. Maximum Mitigated Cumulative Health Risks from the Proposed Project

Source	Cancer Risk (case per million)	Non-Cancer Hazard Index	Annual PM _{2.5} Concentration (µg/m ³)
Contribution from Existing Sources^a			
Stationary Sources	7.8	< 0.01	0.01
Roadway Sources	4.0	-	0.08
Rail Sources	11.8	-	0.02
Contribution from Project Construction^b			
Maximum Exposed Receptor ^c	9.5 8.8	0.01	0.22
Contribution from Project Operation			
Maximum Exposed Receptor ^d	< 0.1	< 0.01	< 0.01
Cumulative Totals			
Existing + Construction	32.5 32.4	0.01	0.33
Existing + Operation	23.6	0.00	0.11
Existing + Construction + Operation	32.5 32.4	0.01	0.33
BAAQMD Thresholds	100	10	0.8

Source: See **Appendix 4.1** for modeling outputs and calculations.

Notes:

µg/m³ = micrograms per cubic meter

^a Contribution from existing sources represent the health risks within 1,000 feet of the maximum exposed receptor. As described above, the maximum exposed receptor consists of two offsite receptors during construction. Therefore, the highest risk, index, and concentration amongst the two receptors is reported in this table. See Figure 4.1-1 for existing stationary, roadway, and rail sources.

^b Contributions from project construction reported with implementation of construction mitigation measures.

^c The higher risk, index, and concentration amongst the two offsite receptors is reported in this table.

^d This receptor is an onsite receptor.

Section 4.2, Biological Resources

Page 4.2-2:

The acreage of each existing land cover type on the project site is shown in Table 4.2-1 and Figure 4.2-1. Descriptions of the land cover types are provided below. No wetland, aquatic, or riparian plant communities are located within the project site. Approximately 80 percent of the project site is made up of agriculture and developed land cover types. Agriculture, the predominant land cover type, consists of an inactive a-wheat field in the southern portion of the project site, west of Bradford Street and north of the UPRR tracks.

Page 4.2-15:

The project site is mostly developed with structures or agricultural land cover, surrounded by additional development and agricultural land cover, and void of sensitive natural communities, as shown in Figure 4.2-1. Special-status species are, therefore, not anticipated to occur, with the exception of roosting bats, and migratory nesting birds. ~~Although a Golden eagle, northern harrier, peregrine falcon, and tricolored blackbird may occasionally forage within or over the project site,~~ human presence and disturbance within and surrounding the project site reduce the likelihood of foraging. ~~In addition, n~~ Nesting habitat is absent for golden eagle, and peregrine falcon and considered marginal for tricolored blackbird and marginal for northern harrier.

Tricolored blackbirds nest in a wide variety of vegetation but are most often found in freshwater marsh, Himalayan blackberry copses, weedy fields dominated by milk thistle and/or mallow and mustard, and weed- infested grain fields (often triticale) adjacent to dairies.⁴ Because much native nesting habitat has been converted to agricultural uses or urbanized, and because stored grains provide an essentially limitless food resource, tricolored blackbirds have for several decades nested in large numbers in areas associated with dairies; the close association between nesting tricolored blackbirds and dairies has been especially pronounced since the 1990s, when many dairies moved from Southern California to the San Joaquin Valley.⁵ Only three presumed-extant CNDDDB occurrences for the species occur within 10 miles of the project site (#25, #27, and #995), the closest occurrence being 3.4 miles southwest of the site at Coyote Hills Regional Park; nesting was documented in areas with direct proximity to open freshwater sources (i.e., marsh and freshwater ponds) and did not occur in grain fields such as are present on the project site.⁶ The nearest freshwater source to the project site, excluding ephemeral riverine drainages, are the freshwater ponds located 0.65 mile northeast and southwest of the project site.⁷

Northern harriers breed and forage in a variety of open habitats that provide adequate vegetative cover, an abundance of suitable prey, and scattered perches, such as shrubs or fence posts. In California, such habitats include freshwater marshes; brackish and saltwater marshes;

⁴ Meese, R. J. 2017. *Results of the 2017 Tricolored Blackbird Statewide Survey*. California Department of Fish and Wildlife, Sacramento, CA.

⁵ Ibid.

⁶ California Department of Fish and Wildlife. 2020. *California Natural Diversity Database*. RareFind Records Search for Tricolored Blackbird in Alameda County. RareFind Version 5. Available: <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed: January 19, 2021.

⁷ U.S. Fish and Wildlife Service. 2019. *National Wetland Inventory*. Updated: May 23, 2019. Available: <https://www.fws.gov/wetlands/>. Accessed: January 19, 2021.

wet meadows; the weedy borders of lakes, rivers, and streams; annual and perennial grasslands, including those with vernal pools, weedy fields, and ungrazed or lightly grazed pastures; some croplands, especially alfalfa, grain, sugar beets, tomatoes, and melons; sagebrush flats; and desert sinks.⁸ The species nests predominantly in emergent wetlands or along rivers or lakes.⁹ Northern harriers nest on the ground; most nests are built within patches of dense, often tall, vegetation (e.g., cattails, meadowsweet [*Spirea*]) in undisturbed areas.¹⁰ It forages on the wing, capturing a wide range of vertebrate prey, primarily small and medium-sized mammals and birds, while coursing low over the ground.

Northern harrier nesting on the project site is not anticipated because preferred nesting habitats (i.e., emergent wetlands and water bodies) are not present on-site, and the grassland and grain fields with potential for nesting on the project site are surrounded by human disturbance and bounded by development. Furthermore, tricolored blackbird nesting is not anticipated on the project site because the potential nesting habitat, the wheat field, is not associated with a dairy and there is no readily accessible standing water. The likelihood of northern harrier and tricolored blackbird nesting is further reduced by the amount of development within and surrounding the project site, the lack of connection between the project site and natural corridors and open spaces, and the presence of tens of thousands of acres of grasslands and woodlands less than 1 mile to the east as well as thousands of acres of tidal wetlands and open water 5 miles to the west.

Although golden eagle, northern harrier, peregrine falcon, and tricolored blackbird may forage within the annual grassland, agricultural, and ruderal land cover types (approximately 17 acres) on the project site, the likelihood of foraging is low because of the amount of development surrounding the project site; human presence and disturbance within and surrounding the project site; the lack of quality habitat on the project site, including wetland, aquatic, or riparian plant communities; the lack of connection between the project site and natural corridors and open spaces; and the presence of tens of thousands of acres of grasslands and woodlands less than 1 mile to the east as well as thousands of acres of tidal wetlands and open water 5 miles to the west.

Burrowing owls prefer areas of flat open ground with short grass or bare soil and mammal burrows for refuge. Potential for burrowing owls is low on the project site, as it has little preferred habitat. The preferred habitat that is within the project site is highly fragmented. In addition, a majority of the preferred habitat within the project site is not open because it is situated near trees, an inactive a-wheat field, buildings, or other infrastructure.

⁸ Shuford, W. D., and Gardali, T. (eds.). 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of birds of Immediate Conservation Concern in California. In *Studies of Western Birds 1*. Western Field Ornithologists, Camarillo, CA, and California Department of Fish and Game, Sacramento, CA. Available: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=10393&inline>. Accessed: January 22, 2021.

⁹ California Department of Fish and Wildlife. n.d. *California Wildlife Habitat Relationship, Life History and Range*. Available: <https://wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. Accessed January 21, 2021.

¹⁰ MacWhirter, B., and K. L. Bildstein. 1996. Northern Harrier (*Circus cyaneus*). In *The Birds of North America*, No. 210, A. Poole and F. Gill (eds.). The Academy of Natural Sciences and the American Ornithologists' Union, Philadelphia, PA, and Washington, D.C. Available: <https://www.hawkmountain.org/download/?id=4838>. Accessed: January 22, 2021.

Page 4.2-20:

There are no wetlands or running waters within the vicinity of the project site; therefore, the project would have no impact on fish movement. The nearest fish habitat is Dry Creek, approximately 0.6 mile northwest of the project site, and Alameda Creek, approximately 1.2 miles south of the project site. Use of the project site by wildlife as a travel corridor is highly unlikely for the following reasons. The project site has approximately 4.7 acres of natural land cover (i.e., annual grassland and ruderal land cover), which covers 18 percent of the project site. The project site is surrounded by dense urban development with high levels of human activity. The project site is not within or adjacent to any known regional wildlife movement corridors or any other sensitive biological areas, as indicated by the USFWS Critical Habitat Portal or the CDFW Biogeographic Information and Observations System (BIOS). Within the BIOS, a map produced by CDFW (Terrestrial Connectivity, Areas of Conservation Emphasis) shows the project site within an area that has been assigned a connectivity rank of *Limited Connectivity Opportunity*, which is the lowest available rank, and a statewide terrestrial biodiversity rank of *Low*, also the lowest available rank.¹¹ Lastly, no ~~natural~~ wildlife corridors connect to the site; therefore, the project would have no impact on these resources.

Page 4.2-20 and 4.2-21:

Specifications regarding the protection of burrowing owls are addressed in the DIPSA Specific Plan, Plan Element H: Environmental, Policy and Standards 4. As discussed under Impact BIO-1, there is potential burrowing owl habitat (i.e., grassland and ruderal cover) on the project site. ~~Implementation of Mitigation Measures BIO-1a (Burrowing Owl Protection) would follow this DIPSA Specific Plan policy, thereby ensuring consistency.~~

A tree inventory was performed by ICF at the project site on April 15, 2019 (Appendix 4.2-1). A total of 68 trees were documented on the project site, 47 of which are protected under the Union City Municipal Code. The project would require the removal of all 68 trees on the project site because of conflicts with the design of the project. The project plans include the planting of 735 trees,²⁰ which is substantially more than the 68 trees that would be removed. This impact would be significant. Implementation of Mitigation Measures BIO-1a (Burrowing Owl Protection) would follow this DIPSA Specific Plan policy, thereby ensuring consistency. The species of the trees to be planted would include, but would not be limited to, Skinny Genes English oak, sweet bay standard, and burgundy willow myrtle. The project would also include new landscaping along the perimeter of the site as well as between the proposed buildings. Landscaping would adhere to Chapter 18,112, Water-Efficient Landscape Ordinance, of the Union City Municipal Code, and the adopted Landscape Standard Policy Statement.²¹ ~~Because the project would be designed in compliance with the Union City Municipal Code and policy statement and no additional local policies or ordinances for protecting biological resources would apply to the project, this impact would be~~ ***less than significant with mitigation.***

¹¹ California Department of Fish and Wildlife. n.d. *Biogeographic Information and Observation System*. Areas of Conservation Emphasis. Version 3.20.10. Available: <https://doi.org/10.2173/bow.norhar2.01>. Accessed: January 20, 2021.

Page 4.2-21:

According to the General Plan EIR, future development in the City could result in the destruction of significant ecological resources. Implementation of the General Plan could result in regional impacts on special-status species; riparian, wetland, or other sensitive natural communities; and wildlife movement, resulting in a significant cumulative impact. The Draft EIR, then, is properly focused on whether it would contribute considerably to this significant cumulative impact. Regarding the project site, the majority of it is developed with structures or agriculture land cover and the surrounding area is also mostly developed. The project site and surrounding area retain little natural habitat and exhibit a high level of disturbance. The proposed project would not result in impacts on or a loss of wetlands, riparian habitats, or other sensitive natural communities or wildlife movement corridors and, therefore, would not contribute considerably to the significant cumulative impact on such resources identified in the General Plan EIR. The project would convert grassland to an urban use; however, grassland is not a sensitive natural community.

As discussed in Impact BIO-1 of the Draft EIR, the proposed project has a potential to result in impacts on special-status species; however, such impacts would be limited to a loss of low-quality foraging habitat for special-status birds (golden eagle, peregrine falcon, northern harrier, and tricolored blackbird), potential disturbance of burrowing owls (if occupying the site prior to construction), and loss of potential special-status bat roosting habitat (trees and structures).

Taking into consideration the quality of the special-status bird foraging habitat (with past and ongoing disturbance) and the quantity, consisting of a wheat field (12.3 acres), ruderal land cover (2.7 acres), and grassland (2.0 acres), relative to the abundant foraging habitat less than 1 mile east of the project site, with tens of thousands of acres of grassland and oak woodland, the loss of this low-quality foraging habitat due to the proposed project would not be cumulatively considerable. Furthermore, implementation of Mitigation Measures BIO-1a, Burrowing Owl Protection, and BIO-1b, Bat Protection, would ensure that potential impacts on burrowing owl associated with construction would be avoided and minimized. Implementation of Mitigation Measure BIO-1c would ensure protection of nesting and roosting birds prior to structure and tree removal. With implementation of such measures, the project would not contribute considerably to the significant cumulative impact.

The loss of special-status bat roosting habitat would also not be cumulatively considerable, considering the availability of landscaping, including the 735 trees proposed by the project, as well as industrial and residential buildings within the city and region that could be used by roosting bats.

Considering the baseline quality of the habitat, as well as the levels of ongoing disturbance from industrial, residential, agricultural activities within and adjacent to the project site, and implementation of the General Plan's goals and policies, as well as mitigation measures, construction of the proposed project would not contribute considerably to the significant cumulative impact on special-status species.

However, the project site has the potential to have a significant impact on biological resources, as discussed above, resulting in the potential to have a cumulatively considerable contribution to a cumulative impact. Implementation of Mitigation Measures BIO-1a (Burrowing Owl Protection) would ensure the protection of nesting burrowing owls, which would reduce the project's impact on this special-status species and conflict with local policies or ordinances

protecting burrowing owl to a less than significant level. Implementation of Mitigation Measures BIO-1b (Bat Protection) and BIO-1c (Nesting Bird Protection) would ensure the protection of nesting and roosting birds and bats, which would reduce the project's impact on residing bat or bird species and impeding the use of native wildlife nursery sites to a less than significant level. As discussed in Impact BIO-3, the project would require the removal of all 68 trees on the project site, including 47 protected trees. The project design would adhere to the Union City Municipal Code (Chapter 12.60.170) and Tree Conservation Ordinance. With implementation of Mitigation Measures BIO-1a, BIO-1b, and BIO-C, the project's contribution to cumulative biological resources impacts would be less than cumulatively considerable. Therefore, the cumulative impact would be ***less than significant with mitigation***.

Golden eagles are known to be sensitive to human disturbance; they require open terrain for hunting.^{11, 12} Golden eagles are known to forage east of the project site where there is prime foraging habitat with a high prey base; no evidence of ground squirrels was present on the project site, a main prey item for golden eagles (in addition to other species in the Scuridae and Leporidae families). Peregrine falcons are known to hunt mostly birds in the air, with favored prey being pigeons around cities.¹³ The project would not impede peregrines from this preferred method of foraging because the space above the project site would not be significantly affected by the project. In addition, the project would not preclude the transmission tower near the project site from being used as a perch by species, including peregrine falcon, which, as stated in the comment, has been observed. Peregrine falcon is designated as fully protected by CDFW and not listed as endangered under the California Endangered Species Act, as stated by the commenter; the species was delisted in 1999.

Based on the foregoing, impacts on golden eagle, peregrine falcon, northern harrier, and tricolored blackbird would ~~not be affected~~ be less than significant. Queries of the USFWS, CDFW's CNDDDB, and CNPS regarding species with potential to occur in the region are included in Appendix 4.2-2.

¹¹ Katzner, T. E., M. N. Kochert, K. Steenhof, C. L. McIntyre, E. H. Craig, and T. A. Miller. 2020. Golden Eagle (*Aquila chrysaetos*). Version 2.0. In *Birds of the World*, P. G. Rodewald and B. K. Keeney (eds.). Cornell Lab of Ornithology, Ithaca, NY. Available: <https://birdsoftheworld.org/bow/species/goleag/cur/conservation#human>. Accessed: January 22, 2021.

¹² California Department of Fish and Wildlife. n.d. *California Wildlife Habitat Relationship, Life History and Range*. Available: <https://wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. Accessed: January 21, 2021.

¹³ National Audubon Society. 2018. *Guide to North American Birds – Peregrine Falcon*. Available: <https://www.audubon.org/field-guide/bird/peregrine-falcon>. Accessed: January 15, 2021.

Section 4.5, Geology, Soils, and Paleontological Resources

Page 4.5-17:

Mitigation Measure GEO-7: Paleontological Monitoring and Mitigation Plan

Prior to initial ground disturbance in previously undisturbed strata of geologic units ~~with high sensitivity~~, the applicant shall retain a Qualified Paleontologist, as defined by the Society of Vertebrate Paleontology, to direct all mitigation measures related to paleontological resources

and design a Paleontological Mitigation and Monitoring Program (PMMP) for the proposed project. The PMMP shall include measures for a preconstruction survey, a training program for construction personnel, paleontological monitoring, fossil salvage, curation, and final reporting, as applicable.

Section 4.6, Greenhouse Gas Emissions

Page 4.6-8 (footnote 20):

²⁰ ~~The project does not qualify for streamlined CEQA review because it is not a mixed-used and transit priority project. This Draft EIR does not employ the CEQA streamlining option.~~

Page 4.6-16:

As described in Section 4, ~~Environmental Impact Analysis~~ Corrections and Additions to the Draft EIR, subsequent to the drafting of this EIR, the applicant indicated that the residential units associated with proposed project would increase by 10, from 964 to 974 units subsequent to the preparation of the Draft EIR, the project was revised to replace eight parking spaces (2,530 SF) on 7th Street adjacent to Shorty Garcia Park by widening the street. As described therein, the analysis presented throughout this EIR adequately accounts for the potential environmental impacts of the buildout modeled in the Draft EIR of the 974 new residential units and the additional eight parking spaces on 7th Street adjacent to Short Garcia Park.

Page 4.6-17:

The estimated construction GHG emissions are presented in Table 4.6-3, which estimates that construction would generate approximately ~~6,594~~ 6,599 metric tons of MTCO₂e for the total construction period between 2021 and 2025. Emissions would range from a minimum of ~~739~~ 742 MT CO₂e (in 2025) to a maximum of 1,815 1820.59 MT CO₂e (in 2022).

Page 4.6-17:

Table 4.6-3. Estimated Construction GHG Emissions from the Proposed Project (metric tons)^a

Construction Year	CO ₂	CH ₄	N ₂ O	CO ₂ e
2021	1,119 <u>1,124</u>	<1	<1	1,125 <u>1,130</u>
2022	1,815	<1	<1	1,821
2023	1,601	<1	<1	1,604
2024	1,300	<1	<1	1,303
2025	739	<1	<1	742
Total ^b	6,575 <u>6,580</u>	1	<1	6,594 <u>6,599</u>

Source: See **Appendix 4.1** for CalEEMod model outputs and construction energy calculations.

Notes: CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrous oxide

^a Emissions represent the sum of emissions from the CalEEMod construction output and energy consumption (approximately 166,188 kilowatt-hours per year) during construction.

^b Values may not total due to rounding.

Page 4.6-18:

Mitigation Measure GHG-1a: Require Implementation of BAAQMD-recommended Construction BMPs

The project sponsor shall require their contractors, as a condition of contracts (e.g., standard specifications), to reduce construction-related GHG emissions by implementing BAAQMD's recommended best management practices, including (but not limited to) the following measures (based on BAAQMD's CEQA Guidelines³⁴). The project applicant shall submit evidence of compliance to the City prior to permit issuance.

- Ensure alternative fueled (e.g. biodiesel, electric) construction vehicles/equipment make up at least 15 percent of the fleet
- Use local building materials of at least 10 percent (sourced from within 100 miles of the Planning Area)
- Recycle and reuse at least ~~50~~65 percent of construction waste or demolition materials

³⁴ Bay Area Air Quality Management District. 2017b. *California Environmental Quality Act. Air Quality Guidelines*. May. Available: https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed: March 16, 2020.

Page 4.6-24:

Though the City's CAP does not address post-2020 emissions generated by the proposed project when it becomes fully operational in 2025, the proposed project would not conflict with its GHG reduction strategies. More specifically, the proposed project would include green building techniques, as well as energy efficiency, water conservation, and waste reduction measures. In addition, the proposed project would promote a transit/pedestrian/bicycle-friendly environment that would support GHG reductions from mobile sources. The proposed project would also result in a net increase in trees and expand the City's urban forest. Thus, the project is consistent with the City's General Plan goals and policies related to GHG emissions and would not conflict with strategies outlined in the City's CAP to support GHG emissions reductions. As noted, the CAP does not address post-2020 emissions generated by the proposed project and is thus not considered to be a qualified CAP. Consequently, the proposed project is determined to not conflict with the CAP, but this does not preclude a significant impact conclusion for any other evaluation of significance in this section. However, because the project is compliant with applicable regulatory programs, the GHG impact is less than significant. Therefore, this impact would be *less than significant*.

Section 4.7, Hazards and Hazardous Materials

Page 4.7-16:

Alameda County Water District's Groundwater Protection Program

The Alameda County Water District's Groundwater Protection Program is designed to protect and preserve the community's drinking water resources. As part of the Groundwater Protection Program, ACWD has entered into Cooperative Agreements with both the San Francisco Bay Regional Water Quality Control Board and the City of Union City. These agreements allow ACWD to provide technical oversight for the investigation and remediation of Leaking Underground

Fuel Tank (LUFT) sites and sites where the pollution is attributed to spills or leaks from structures other than underground fuel tanks.

Page 4.7-21:

Mitigation Measure HAZ-2a: Site Management Plan

Prior to issuance of a grading permit, the project sponsor shall retain the services of a qualified environmental engineering firm to prepare and implement, during site preparation and grading activities, a Site Management Plan (SMP). The SMP shall be designed to protect human health and the environment and include protocols, measures, and techniques for the proper handling, management, and disposition of affected soils and groundwater associated with construction dewatering (if any) found on the site and any areas of off-site work during site preparation and grading activities. The SMP shall also be designed to protect workers and off-site receptors during site activities and ensure the proper characterization, management, and/or disposal of contaminated environmental media that is above applicable Environmental Screening Levels (ESLs) established by the RWQCB, regional screening levels established by EPA, or other screening thresholds approved for the project. The environmental engineering firm shall determine the applicability of Bay Area Air Quality Management District (or other agency) rules for fugitive dust control and/or VOC emissions during earthwork, and the SMP shall provide compliance protocols to be adhered to, including air monitoring protocols, if required. The SMP shall be prepared by a commercial environmental engineering firm with demonstrated expertise and experience in the preparation of SMPs and be stamped by an appropriately licensed professional. The SMP shall be submitted for City and outside agency review in conformance with DIPSA Specific Plan, Toxic and Hazardous Substances Policy 5, and implemented throughout all ground-disturbing work.

The SMP shall establish protocols and measures for addressing the discovery of presently unknown environmental conditions or subsurface structures such as USTs or sumps. At a minimum, there shall be protocols for the sampling and testing of soil unearthed during the construction of new or replacement of existing water mains off-site. If the environmental engineering firm subsequently identifies the need for further sampling, the project sponsor shall implement this and any other requirements identified in the SMP. The project sponsor shall enter into a voluntary agreement with the San Francisco Bay Regional Water Quality Control Board (RWQCB) for review and approval of the SMP. As lead agency for the site cleanup, the RWQCB will also have oversight authority pertaining to implementation of the SMP. If directed by the RWQCB, additional site investigation and characterization may be required prior to construction to ensure that hazardous materials in the soil, soil vapor, and/or groundwater do not exceed applicable regulatory thresholds. If additional site investigation and characterization is required prior to construction, the project sponsor shall implement said studies (and their respective recommendations, if necessary) prior to construction. The RWQCB will also consult and coordinate with the ACWD on the scope of the SMP. The project sponsor shall provide a copy of the SMP to the ACWD at the same time the SMP is submitted to the RWQCB for review and comment. As part of its review of the SMP, the ACWD shall also review the design of long-term drainage and stormwater treatment plans. The project sponsor shall incorporate all recommendations and requirements from the ACWD into the SMP and drainage/stormwater treatment plans as appropriate. As the oversight agency, the RWQCB shall provide the project sponsor with comments on the SMP. Prior to issuance of the grading permit, the project sponsor

shall provide the City with a copy of the approved SMP and implement the SMP during site preparation and grading under the approving agency's oversight at the project sponsor's cost.

Page 4.7-23:

Mitigation Measure HAZ-2b: Engineering Controls on the Project Site

Prior to the issuance of grading permits, the project sponsor shall demonstrate compliance with the recommendations in the *Step-out Soil Gas Assessment* (ENGEO 2013) to address vapor intrusion concerns. Implementation of engineering controls shall be implemented on the project site in accordance with the *Step-out Soil Gas Assessment* (ENGEO 2013) to address the presence of elevated VOCs (in areas where TCE and PCE concentrations exceeded residential screening levels). Engineering controls shall be installed to redirect and or minimize VOC concentrations. Said engineering controls shall consist of controls that allow for ~~passive~~ appropriate ventilation and discharge of the vapors into the atmosphere.

Specific engineering controls may include, but will not be limited to:

- Installation of subsurface migration barriers; and/or
- Inclusion of ventilated foundations for any proposed structures; and/or
- The use and implementation of an alternative method or structural design that would address soil gas releases and reduce the potential for hazardous conditions to occur.

Appropriate engineering control system(s) shall be determined with concurrence, approval, and oversight of the DTSC and RWQCB, ~~and shall be dependent on future building placement and construction.~~ (as applicable) and shall be dependent on future building placement and construction. Any DTSC requirements for long-term operation, monitoring, and maintenance (OMM) of the vapor mitigation systems shall be complied with, including any requirements to secure the cost of such OMM with a financial security instrument such as a performance bond. Any land use covenant required by DTSC to ensure the long-term efficacy of the vapor mitigation systems shall be recorded in property title records by the project sponsor or successor owner. If monitoring or extraction wells remain in place at the time that engineering controls are submitted to DTSC and RWQCB, the placement of such engineering controls shall ensure that building placement will either not interfere with operation of the well facilities; or that DTSC and/or RWQCB shall have approved any required modifications to the well facilities.

Prior to project grading, the project sponsor shall enter into a voluntary oversight agreement (or CLRRRA agreement) with DTSC and submit for DTSC's approval a remedial plan for the evaluation and removal of known hazardous substances present in soil. The remedial plan shall specify risk-based screening levels appropriate for future residential use (in the residential areas) and for commercial use (in the commercial areas). The project sponsor shall implement the approved remedial plan under DTSC's oversight. Confirmation sampling shall document that all soil exceeding the screening levels has been successfully removed. Prior to commencement of project grading, DTSC shall have issued written concurrence that known soil contamination has been satisfactorily addressed. The project sponsor shall provide a copy of DTSC's written concurrence to the City.

Page 4.7-24:

Mitigation Measure HAZ-2c: Conduct a Hazardous Building Materials Survey prior to Demolition Activities.

Prior to the issuance of a demolition permit, a comprehensive Hazardous Building Materials Assessment shall be conducted by a licensed contractor prior to demolition activities associated with the project. Should this assessment determine that lead-based paint, treated-wood waste, and/or asbestos or other hazardous building materials are present, the following actions shall be implemented:

- A health and safety plan shall be developed by a certified industrial hygienist for potential lead-based paint, asbestos or other hazardous building materials risks present during demolition. The health and safety plan shall then be implemented by a licensed contractor.
 - Both the federal Occupational Safety and Health Administration (OSHA) and the California Occupational Safety and Health Administration (Cal/OSHA) regulate worker exposure during construction activities that affect lead-based paint. The Interim Final Rule found in 29 Code of Federal Regulations, Part 1926.62 covers construction work in which employees may be exposed to lead during such activities as demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance.
- Acquire necessary approvals from the City for specifications or commencement of abatement activities. Abatement activities shall be conducted by a licensed contractor.
- Prior to demolition of construction debris containing asbestos the Bay Area Air Quality Management District (BAAQMD) shall be notified ten days prior to initiating construction and demolition activities. Demolition permit submittal to the City shall include BAAQMD Asbestos Demolition/Renovation job number (J#) and related BAAQMD acknowledgement letter.
 - Asbestos shall be disposed of at a licensed disposal facility. Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos.
 - The local office of the Cal/OSHA shall be notified of asbestos abatement activities.
 - Asbestos abatement contractors shall follow State regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos containing material.
 - Asbestos removal contractors shall be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur shall have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services in Sacramento.
- Contractors and subcontractors shall comply with Union City Municipal Code 13.42.050 in performing a priority building materials screening assessment.
- The contractor and hauler of hazardous building materials shall file a Hazardous Waste Manifest that details the hauling of the material from the site and the disposal of it. Pursuant

to California law, the City of Union City shall not issue the required permit until the applicant has complied with the notice requirements described above.

Section 4.8, Hydrology and Water Quality

Page 4.8-2:

Groundwater

The project site is located in the Santa Clara Valley – Niles Cone Groundwater Subbasin (Niles Cone Subbasin 2-09.01 or Niles Cone), part of the larger Santa Clara Valley Groundwater Basin, which supplies water to and is managed by the Alameda County Water District (ACWD) with other regional partners. For over 100 years, ACWD has managed the groundwater of the Niles Cone Groundwater Basin through comprehensive programs that protect and improve water supplies for all groundwater users. ACWD is identified within the Sustainable Groundwater Management Act (SGMA) as an agency created by statute to manage groundwater and deemed to be the exclusive local agency within its statutory boundaries to comply with SGMA. Beneficial uses for the groundwater basin include municipal and domestic water supply, industrial process and service water supply, and agricultural water supply. The Santa Clara Valley Groundwater Basin has a history of groundwater overdraft. The Alameda County Water District diverts impounded water from behind ~~three~~ two dams in the Alameda Creek flood control channel to groundwater recharge ponds in the Quarry Lakes Regional Recreation Area in Fremont. This water percolates into aquifers and supplies up to 50 percent of the water used in Fremont, Newark, and Union City. Seawater intrusion is common in the basin and has moved landward and into deeper aquifers since first recorded in the 1920s.

Page 4.8-3:

The Alameda County Water District ~~has begun~~ began treating brackish groundwater in 2003 to allow previously unused groundwater to be used as potable water.

Page 4.8-14:

On-site LID treatment would be optimized throughout the project site. Multiple drainage management areas would be created to treat runoff from proposed public streets within small bio-retention areas. The at-grade surface parking would be routed to LID treatment areas within the public right of way. The proposed community parks and paseo design are not yet complete; however, treatment methods, such as self-treating areas, self-retaining areas and reduced impervious surfaces, would be implemented to the extent feasible once park design and features are finalized. Considering the potential for contaminated groundwater, appropriate stormwater management practices and designs would be evaluated to determine the feasibility of the treatment method and the underlying site-specific conditions prior to implementation and approvals. The project also proposes to construct stormwater treatment facilities for the north side of existing Bradford Way. The project has incorporated stormwater treatment to the maximum extent practicable. Preliminary stormwater calculations indicate 55.6 percent of the site would be treated by LID treatment measures and 44.4 percent by non-LID treatment devices, such as certified media filters. The site would treat approximately 0.6 percent more stormwater through bio-retention areas than required (per the applicable LID reduction credits).

Page 4.8-15:

The project would be designed and maintained in accordance with City, Alameda County, and San Francisco Bay RWQCB water quality requirements, such as the San Francisco Bay MS4 Permit, Alameda Countywide Clean Water Program, General Plan and DIPSA Specific Plan policies, ~~and~~ local municipal codes, and applicable drainage and stormwater ordinances. Stormwater runoff would be treated using LID measures, as required, such as bio-retention areas. Therefore, implementation of the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality. Therefore, this impact would be *less than significant*.

Section 4.9, Land Use and Planning

Page 4.9-11:

Site development review approval is required for construction of all projects ~~multi-family developments~~.

Page 4.9-13:

A future proposed two-way bike path ~~would~~ may ultimately be ~~provided~~ completed by others in the future on the east side of 7th Street south of Bradford Way by eliminating on-street parking on one side of the street; however, this is not part of the project. The future two-way bike path on 7th Street ~~would~~ may continue south and connect with the planned path adjacent to the future Quarry Lakes Parkway.

Section 4.10, Noise

Page 4.10-24:

¹⁰ HVAC systems at PA-1, 2, 3, 4, 9 and ~~9-10~~ would be roof mounted.

Page 4.10-25:

Mitigation Measure NOI-1b: Operational Equipment Noise Control Plan

An Operational Equipment Noise Control Plan shall be prepared prior to issuance of the first City-issued building permit for the proposed development for approval by the ~~Public Works Department and~~ Building Division. The plan shall include a noise analysis for the project that evaluates HVAC and other stationary mechanical equipment with the potential to generate noise levels in excess of ambient noise levels by 10 dB on new residential properties and by 12 dB on new commercial properties.

The analysis shall be prepared by persons qualified in acoustical analysis and/or engineering and demonstrate with reasonable certainty that the operational noise sources associated with the project would not result in a noise level that would be in excess of the Community Noise Ordinance. All recommendations from the acoustical analysis necessary for ensuring that noise sources would meet applicable requirements of the noise ordinance and would not result in 10 dB (for sources on residential properties) or 12 dB (for sources on commercial properties)

increases in ambient noise levels shall be incorporated into plans submitted for building permit issuance and building operation.

Section 4.14, Transportation

Page 4.14-31:

The project would also provide buffered bicycle lanes on both sides of 7th Street between Decoto Road and Bradford Way within the existing right-of-way by eliminating the existing on-street parking on the west both sides of the street between Decoto Road and Bradford Way ~~K Street and eliminating the existing on-street parking on the east side of the street between Decoto Road and K Street; however, {the project would replace~~ eight parking spaces on 7th Street adjacent to Shorty Garcia Park by widening the street only where the eight-stall parking bay would be included}, and by eliminating on-street parking on one side of the street between K Street and Bradford Way. South of Bradford Way, there is a proposed two-way bicycle path that would may be completed by others in the future ~~would be provided~~ on the east side of 7th Street by eliminating on-street parking on one side of the street.

The two-way bicycle path on 7th Street ~~would may~~ be extended southward and connect to the planned multi-use path adjacent to the future Quarry Lakes Parkway.

Section 4.15, Utilities and Service Systems

Page 4.15-1:

~~No comments regarding utilities and service systems were received in response to the Notice of Preparation (NOP). In response to the Notice of Preparation (NOP), comments were received that identified concerns related to the water supply, groundwater facilities, water efficiency measures, and the removal or modification of utility and service systems. The comments are addressed in the environmental analysis discussion in this section.~~

Page 4.15-3:

ACWD operates ~~two~~ one surface water treatment plants that treats SWP water and local surface water from Del Valle Reservoir. In addition, the NDF treats brackish groundwater to remove salts and other impurities; the Blending Facility blends San Francisco Regional Water System water with local fresh groundwater; and a Regional Water System Direct Takeoff received direct supplies of San Francisco Regional Water System water. Details of the facilities operated by the ACWD are as follows:

- ~~• **Mission San Jose Water Treatment Plant (MSJWTP):** The facility uses membrane ultra-filtration technology for treatment of surface water from the South Bay Aqueduct. The MSJWTP is located near I-680 on Vargas Road. The sustainable production rate at MSJWTP is 3.2 mgd.~~

Section 4.16, Less-than-Significant

Page 4.16-5:

The project site is in a developed urban area of the City with a mix of industrial, mixed-use commercial, residential, and other uses. As discussed in Section 4.2, *Biological Resources*, agriculture, the predominant land cover type on the project site, consists of ~~an inactive~~ a wheat field in the southern portion of the project site, west of Bradford Street and north of the UPRR tracks. However, the project site is designated as “Urban and Built-up Land,” which is defined as land with a building density of at least one unit to 1.5 acres or six structures per 10 acres, as well as land used for residential, industrial, and commercial purposes, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures on the *2016 Alameda County Important Farmland* map.¹² In addition, no land adjacent to or in the vicinity of the project site is designated or used as ~~farmland~~ Farmland. Therefore, the proposed project would have **no impact** on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

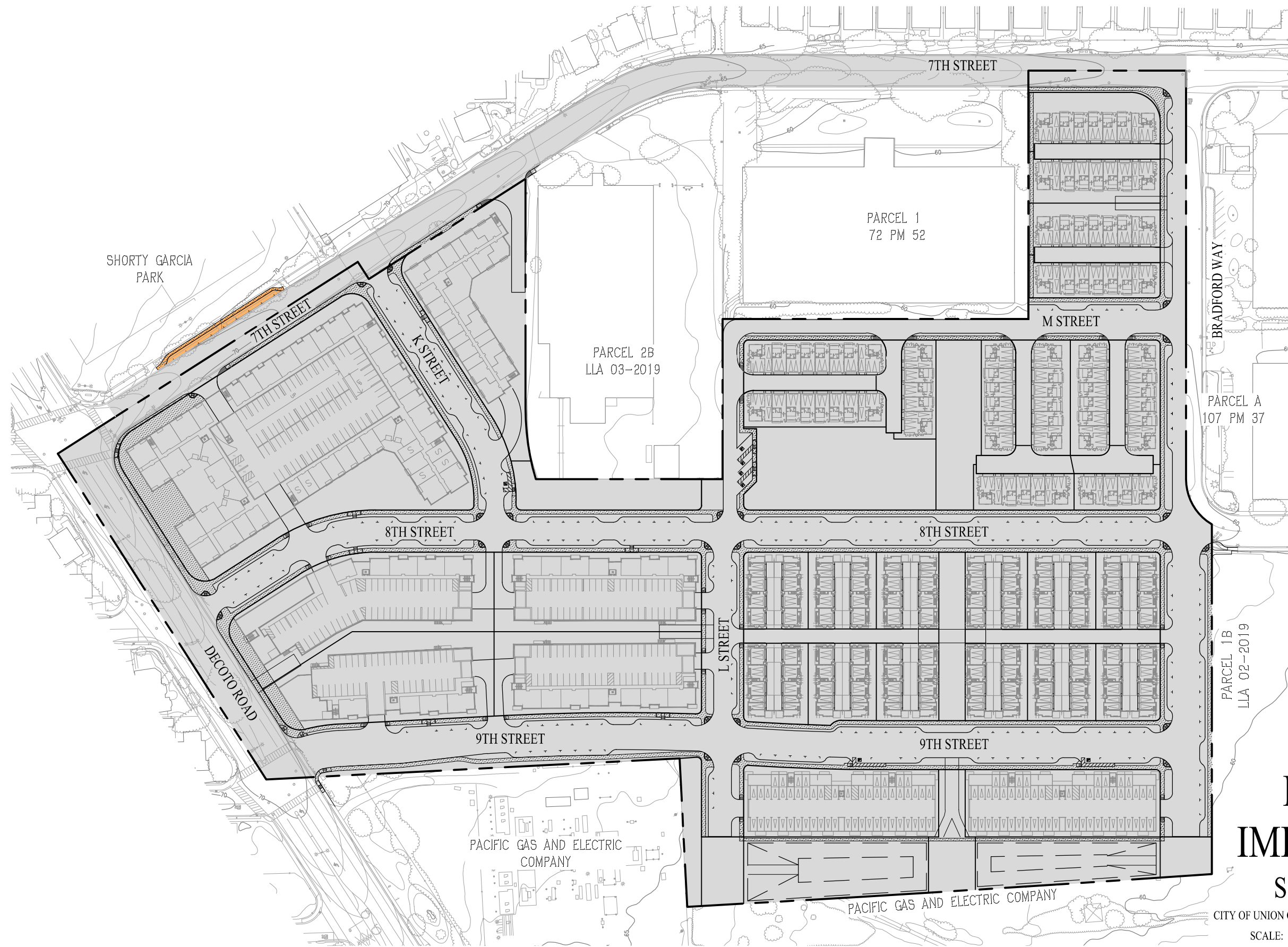
Page 4.16-6:

As mentioned above, the project site is within a developed urban area of the City, and is comprised of existing and vacant industrial uses, surface parking lots, asphalt or concrete storage lots, railroad spur improvements, and vacant and unpaved areas, including agricultural, annual grassland, landscaped, and ruderal areas. Portions of the project site were previously used for agricultural purposes; however, the project site has not been used for active agricultural uses for many years. The project site is not designated as agricultural land under the General Plan or the City’s Zoning Code. There are no forest uses within or adjacent to the project site and no agricultural uses adjacent to the project site. Although the project would include infrastructure improvements, these improvements would be completed in an already urbanized area of the City and would not extend into an undeveloped area. In addition, the project would not result in the development of urban uses on a previously undeveloped greenfield site or other physical changes that would result in the conversion of ~~farmland~~ Farmland to non-agricultural uses or forestland to non-forest uses. Therefore, the proposed project would have **no impact** on agricultural and forestry resources.

¹² California Department of Conservation. 2018. *Alameda County Important Farmland 2016*. August. Available: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/>. Accessed: March 5, 2020.

Appendix 4.1-1, Air Quality and Greenhouse Gases Construction Analysis

Construction Analysis



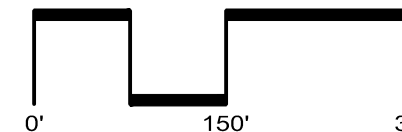
LEGEND

- INITIAL AREA OF IMPACT
(1,277,186 SF)
- 7TH ST PARKING AREA OF IMPACT
(2,530 SF) 0.20% OF TOTAL AREA

PROJECT IMPACT AREA STATION EAST

CITY OF UNION CITY ALAMEDA COUNTY CALIFORNIA

SCALE: 1" = 150' DATE: FEBRUARY 24, 2021



SAN RAMON (925) 866-0322
ROSEVILLE (916) 788-4456
WWW.CBANDG.COM

CIVIL ENGINEERS ■ SURVEYORS ■ PLANNERS

Estimated Unmitigated Construction Criteria Pollutants and Precursors for Buildout of Station East

Year	Tons per Year									
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Ex	PM10 Total	PM2.5 Dust	PM2.5 Ex	PM2.5 Total
2021	0.6	7.3	4.5	0.0	0.5	0.3	0.8	0.2	0.3	0.5
2022	2.7	6.9	7.1	0.0	0.8	0.2	1.1	0.2	0.2	0.4
2023	5.9	3.8	5.0	0.0	1.0	0.1	1.1	0.3	0.1	0.4
2024	4.7	3.5	4.6	0.0	0.9	0.1	1.0	0.2	0.1	0.3
2025	2.0	2.3	3.0	0.0	0.4	0.1	0.5	0.1	0.1	0.2

Mitigated Construction Criteria Pollutants and Precursors for Buildout of Station East

Year	Tons per Year									
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Ex	PM10 Total	PM2.5 Dust	PM2.5 Ex	PM2.5 Total
2021	0.1	1.1	4.6	0.0	0.4	0.0	0.4	0.1	0.0	0.1
2022	2.0	0.7	7.1	0.0	0.7	0.0	0.7	0.2	0.0	0.2
2023	5.2	0.5	5.7	0.0	0.9	0.0	0.9	0.2	0.0	0.2
2024	4.1	0.5	4.5	0.0	0.8	0.0	0.8	0.2	0.0	0.2
2025	1.6	0.3	3.1	0.0	0.3	0.0	0.3	0.1	0.0	0.1

Estimated Unmitigated Construction GHGs for Buildout of Station East

Year	Metric Tons per Year					
	CO2	CH4	N2O	CO2e		
2021	1,147	0	0	1,154		
2022	399	0	0	402		
2023	11	0	0	11		
2024	327	0	0	328		
2025	739	0	0	742		
Total	2,624	0	0	2,636		

Estimated Energy Consumption for Buildout of Station East

Annual Energy	166	Mwh
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Estimated Fuel Consumption for Buildout of Station East

Year	Gasoline	Diesel
2021	2,221	106,886
2022	63,455	122,493
2023	81,127	86,273
2024	59,880	75,154
2025	26,323	49,211
Total	233,007	440,017

Max Daily Unmitigated Construction Emissions (lbs/day)

Maxiumn Daily Emissions (entire project)										
Year	ROG	NOx	CO	SO2	PM10 Dust	PM10 Ex	PM10 Total	PM2.5 Dust	PM2.5 Ex	PM2.5 Total
2021	13	150	98	0	9	6	15	4	5	9
2022	51	71	73	0	8	3	11	2	2	5
2023	47	30	40	0	8	1	9	2	1	3
2024	66	30	41	0	9	1	10	2	1	3
2025	22	19	25	0	3	1	4	1	1	1

Max Daily Emissions (lbs/day)

Maxiumn Daily Mitigated Emissions (entire project)										
Year	ROG	NOx	CO	SO2	PM10 Dust	PM10 Ex	PM10 Total	PM2.5 Dust	PM2.5 Ex	PM2.5 Total
2021	3	22	101	0	8	0	8	2	0	3
2022	8	8	74	0	7	0	8	2	0	2
2023	7	4	46	0	7	0	7	2	0	2
2024	9	4	40	0	8	0	8	2	0	2
2025	3	3	26	0	3	0	3	1	0	1

Station East - Phase 1 Construction FEIR - Alameda County, Summer

Station East - Phase 1 Construction FEIR

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	1,124.00	Space	5.12	449,600.00	0
Parking Lot	214.00	Space	0.98	85,600.00	0
Parking Lot	2.53	1000sqft	0.06	2,530.00	0
Apartments Mid Rise	683.00	Dwelling Unit	14.57	1,278,379.00	1953
Regional Shopping Center	30.77	1000sqft	0.34	30,770.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2022
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 - Construction analysis only, FEIR Update.

Land Use - lot acreage scaled by SF; land use data provided by applicant. Added new 7th street parking area of 2,530 sf.

Construction Phase - schedule provided by applicant, update includes an additional day of grading.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - defaults from RCEM for utilities phase

Trips and VMT - total hauling trips for demolition provided by applicant; 3 more trips added for 7th street parking.

Demolition - Extra 25 tons from 7th street parking, 2,200 tons in total.

Grading - provided by applicant; assumed entire site graded. Added 25 CY for 7th street parking.

Architectural Coating -

Woodstoves -

Energy Use -

Construction Off-road Equipment Mitigation - assumed Tier 4 final mitigation; and implementation of BAAQMD's Construction Measures

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	32264	32112
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	435.00
tblConstructionPhase	NumDays	370.00	640.00
tblConstructionPhase	NumDays	20.00	108.00
tblConstructionPhase	NumDays	35.00	108.00
tblConstructionPhase	NumDays	20.00	28.00
tblGrading	AcresOfGrading	270.00	26.50
tblGrading	MaterialExported	0.00	80,025.00
tblLandUse	LandUseSquareFeet	683,000.00	1,278,379.00
tblLandUse	LotAcreage	10.12	5.12
tblLandUse	LotAcreage	1.93	0.98
tblLandUse	LotAcreage	17.97	14.57
tblLandUse	LotAcreage	0.71	0.34
tblTripsAndVMT	WorkerTripNumber	727.00	726.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	12.1941	143.9628	90.1001	0.2427	8.9518	5.4256	14.3774	4.0021	5.0467	9.0488	0.0000	24,170.9363	24,170.9363	4.8829	0.0000	24,293.0082
2022	47.7385	46.7739	45.6764	0.1433	8.2799	2.1069	9.2473	2.2217	1.9720	3.1364	0.0000	14,405.7767	14,405.7767	2.2115	0.0000	14,431.2912
2023	47.2756	30.0575	40.0621	0.1393	8.2799	0.8282	9.1081	2.2217	0.7829	3.0046	0.0000	14,010.4404	14,010.4404	0.9514	0.0000	14,034.2257
2024	46.9872	28.8012	38.4307	0.1364	8.2799	0.7308	9.0108	2.2218	0.6904	2.9122	0.0000	13,719.9742	13,719.9742	0.9312	0.0000	13,743.2550
Maximum	47.7385	143.9628	90.1001	0.2427	8.9518	5.4256	14.3774	4.0021	5.0467	9.0488	0.0000	24,170.9363	24,170.9363	4.8829	0.0000	24,293.0082

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.8960	33.5812	95.4585	0.2427	5.2107	0.3398	5.5505	2.1227	0.3362	2.4590	0.0000	24,170.9363	24,170.9363	4.8829	0.0000	24,293.0082
2022	46.1852	20.6413	51.2992	0.1433	8.2799	0.1355	8.4013	2.2217	0.1353	2.3382	0.0000	14,405.7767	14,405.7767	2.2115	0.0000	14,431.2912
2023	45.8687	16.7331	41.2997	0.1393	8.2799	0.1024	8.3823	2.2217	0.0984	2.3201	0.0000	14,010.4404	14,010.4404	0.9514	0.0000	14,034.2257
2024	45.6924	16.5021	39.7464	0.1364	8.2799	0.1014	8.3813	2.2218	0.0974	2.3191	0.0000	13,719.9742	13,719.9742	0.9312	0.0000	13,743.2550
Maximum	46.1852	33.5812	95.4585	0.2427	8.2799	0.3398	8.4013	2.2218	0.3362	2.4590	0.0000	24,170.9363	24,170.9363	4.8829	0.0000	24,293.0082

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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Percent Reduction	8.79	64.96	-6.32	0.00	11.07	92.53	26.42	17.62	92.14	47.87	0.00	0.00	0.00	0.00	0.00	0.00
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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	4/15/2021	9/13/2021	5	108	
2	Grading	Grading	4/15/2021	9/13/2021	5	108	
3	Trenching	Trenching	9/13/2021	3/11/2022	5	130	
4	Paving	Paving	2/1/2022	3/10/2022	5	28	
5	Building Construction	Building Construction	3/12/2022	8/24/2024	5	640	
6	Architectural Coating	Architectural Coating	9/1/2022	5/1/2024	5	435	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 26.5

Acres of Paving: 6.16

Residential Indoor: 2,588,717; Residential Outdoor: 862,906; Non-Residential Indoor: 46,155; Non-Residential Outdoor: 15,385; Striped

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	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Air Compressors	1	8.00	78	0.48

Trenching	Forklifts	1	8.00	89	0.20
Trenching	Generator Sets	1	8.00	84	0.74
Trenching	Graders	1	8.00	187	0.41
Trenching	Plate Compactors	1	8.00	8	0.43
Trenching	Pumps	1	8.00	84	0.74
Trenching	Rubber Tired Dozers	0	8.00	247	0.40
Trenching	Scrapers	2	8.00	367	0.48
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	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	218.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	10,003.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	10	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	726.00	166.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	145.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

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					0.4359	0.0000	0.4359	0.0660	0.0000	0.0660			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	3.1651	31.4407	21.5650	0.0388	0.4359	1.5513	1.9873	0.0660	1.4411	1.5071		3,747.9449	3,747.9449	1.0549		3,774.3174

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0160	0.5340	0.0975	1.5900e-003	0.0353	1.6500e-003	0.0370	9.6900e-003	1.5800e-003	0.0113		169.5407	169.5407	8.0800e-003		169.7428
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	0.0507	0.0301	0.3907	1.2100e-003	0.1232	8.0000e-004	0.1240	0.0327	7.3000e-004	0.0334		120.9566	120.9566	2.8700e-003		121.0285
Total	0.0667	0.5642	0.4882	2.8000e-003	0.1586	2.4500e-003	0.1610	0.0424	2.3100e-003	0.0447		290.4973	290.4973	0.0110		290.7712

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					0.1962	0.0000	0.1962	0.0297	0.0000	0.0297			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	0.4623	2.0032	23.2798	0.0388	0.1962	0.0616	0.2578	0.0297	0.0616	0.0913	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0160	0.5340	0.0975	1.5900e-003	0.0353	1.6500e-003	0.0370	9.6900e-003	1.5800e-003	0.0113		169.5407	169.5407	8.0800e-003		169.7428
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	0.0507	0.0301	0.3907	1.2100e-003	0.1232	8.0000e-004	0.1240	0.0327	7.3000e-004	0.0334		120.9566	120.9566	2.8700e-003		121.0285
Total	0.0667	0.5642	0.4882	2.8000e-003	0.1586	2.4500e-003	0.1610	0.0424	2.3100e-003	0.0447		290.4973	290.4973	0.0110		290.7712

3.3 Grading - 2021

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					6.3661	0.0000	6.3661	3.3510	0.0000	3.3510			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	4.1912	46.3998	30.8785	0.0620	6.3661	1.9853	8.3514	3.3510	1.8265	5.1775		6,007.0434	6,007.0434	1.9428		6,055.6134

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7336	24.5036	4.4720	0.0732	1.6216	0.0758	1.6974	0.4447	0.0725	0.5172		7,779.4289	7,779.4289	0.3709		7,788.7025
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	0.0676	0.0402	0.5210	1.6200e-003	0.1643	1.0600e-003	0.1654	0.0436	9.8000e-004	0.0446		161.2755	161.2755	3.8300e-003		161.3713
Total	0.8011	24.5438	4.9930	0.0748	1.7859	0.0769	1.8627	0.4882	0.0735	0.5617		7,940.7044	7,940.7044	0.3748		7,950.0738

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					2.8647	0.0000	2.8647	1.5080	0.0000	1.5080			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0620		0.1015	0.1015		0.1015	0.1015	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	0.7616	3.3000	32.9991	0.0620	2.8647	0.1015	2.9663	1.5080	0.1015	1.6095	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7336	24.5036	4.4720	0.0732	1.6216	0.0758	1.6974	0.4447	0.0725	0.5172		7,779.4289	7,779.4289	0.3709		7,788.7025
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	0.0676	0.0402	0.5210	1.6200e-003	0.1643	1.0600e-003	0.1654	0.0436	9.8000e-004	0.0446		161.2755	161.2755	3.8300e-003		161.3713
Total	0.8011	24.5438	4.9930	0.0748	1.7859	0.0769	1.8627	0.4882	0.0735	0.5617		7,940.7044	7,940.7044	0.3748		7,950.0738

3.4 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8856	40.9641	31.5241	0.0623		1.8083	1.8083		1.7021	1.7021		5,983.1518	5,983.1518	1.4947		6,020.5183
Total	3.8856	40.9641	31.5241	0.0623		1.8083	1.8083		1.7021	1.7021		5,983.1518	5,983.1518	1.4947		6,020.5183

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
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Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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	0.0845	0.0502	0.6512	2.0200e-003	0.2054	1.3300e-003	0.2067	0.0545	1.2200e-003	0.0557		201.5944	201.5944	4.7900e-003		201.7141
Total	0.0845	0.0502	0.6512	2.0200e-003	0.2054	1.3300e-003	0.2067	0.0545	1.2200e-003	0.0557		201.5944	201.5944	4.7900e-003		201.7141

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7199	3.1197	33.0471	0.0623		0.0960	0.0960		0.0960	0.0960	0.0000	5,983.1518	5,983.1518	1.4947		6,020.5183
Total	0.7199	3.1197	33.0471	0.0623		0.0960	0.0960		0.0960	0.0960	0.0000	5,983.1518	5,983.1518	1.4947		6,020.5183

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0845	0.0502	0.6512	2.0200e-003	0.2054	1.3300e-003	0.2067	0.0545	1.2200e-003	0.0557		201.5944	201.5944	4.7900e-003		201.7141

Total	0.0845	0.0502	0.6512	2.0200e-003	0.2054	1.3300e-003	0.2067	0.0545	1.2200e-003	0.0557		201.5944	201.5944	4.7900e-003		201.7141
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3.4 Trenching - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4912	35.5771	30.1394	0.0624		1.5369	1.5369		1.4476	1.4476		5,988.1881	5,988.1881	1.4906		6,025.4527
Total	3.4912	35.5771	30.1394	0.0624		1.5369	1.5369		1.4476	1.4476		5,988.1881	5,988.1881	1.4906		6,025.4527

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0784	0.0450	0.5978	1.9500e-003	0.2054	1.2900e-003	0.2067	0.0545	1.1900e-003	0.0557		194.2427	194.2427	4.2900e-003		194.3500
Total	0.0784	0.0450	0.5978	1.9500e-003	0.2054	1.2900e-003	0.2067	0.0545	1.1900e-003	0.0557		194.2427	194.2427	4.2900e-003		194.3500

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7199	3.1197	33.0471	0.0624		0.0960	0.0960		0.0960	0.0960	0.0000	5,988.1881	5,988.1881	1.4906		6,025.4526
Total	0.7199	3.1197	33.0471	0.0624		0.0960	0.0960		0.0960	0.0960	0.0000	5,988.1881	5,988.1881	1.4906		6,025.4526

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0784	0.0450	0.5978	1.9500e-003	0.2054	1.2900e-003	0.2067	0.0545	1.1900e-003	0.0557		194.2427	194.2427	4.2900e-003		194.3500
Total	0.0784	0.0450	0.5978	1.9500e-003	0.2054	1.2900e-003	0.2067	0.0545	1.1900e-003	0.0557		194.2427	194.2427	4.2900e-003		194.3500

3.5 Paving - 2022

Unmitigated Construction On-Site

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

Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2001	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0470	0.0270	0.3587	1.1700e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		116.5456	116.5456	2.5800e-003		116.6100
Total	0.0470	0.0270	0.3587	1.1700e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		116.5456	116.5456	2.5800e-003		116.6100

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.3778	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0470	0.0270	0.3587	1.1700e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		116.5456	116.5456	2.5800e-003		116.6100
Total	0.0470	0.0270	0.3587	1.1700e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		116.5456	116.5456	2.5800e-003		116.6100

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

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
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Category	lb/day										lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Vendor	0.4692	16.7114	3.2736	0.0455	1.1248	0.0316	1.1564	0.3239	0.0302	0.3541		4,802.5800	4,802.5800	0.2407	4,808.5983
Worker	2.2758	1.3057	17.3606	0.0566	5.9639	0.0376	6.0015	1.5819	0.0346	1.6165		5,640.8075	5,640.8075	0.1247	5,643.9245
Total	2.7450	18.0171	20.6342	0.1021	7.0887	0.0692	7.1579	1.9058	0.0648	1.9706		10,443.3875	10,443.3875	0.3654	10,452.5228

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4692	16.7114	3.2736	0.0455	1.1248	0.0316	1.1564	0.3239	0.0302	0.3541		4,802.5800	4,802.5800	0.2407		4,808.5983
Worker	2.2758	1.3057	17.3606	0.0566	5.9639	0.0376	6.0015	1.5819	0.0346	1.6165		5,640.8075	5,640.8075	0.1247		5,643.9245

Total	2.7450	18.0171	20.6342	0.1021	7.0887	0.0692	7.1579	1.9058	0.0648	1.9706		10,443.3875	10,443.3875	0.3654		10,452.5228
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3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3437	12.9638	2.8819	0.0441	1.1249	0.0136	1.1385	0.3239	0.0130	0.3369		4,665.3708	4,665.3708	0.1927		4,670.1882
Worker	2.1166	1.1718	15.9413	0.0544	5.9639	0.0367	6.0006	1.5819	0.0338	1.6157		5,424.9218	5,424.9218	0.1117		5,427.7147
Total	2.4602	14.1356	18.8232	0.0985	7.0888	0.0503	7.1391	1.9058	0.0468	1.9526		10,090.2926	10,090.2926	0.3044		10,097.9029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	0.3278	2.2347	17.4603	0.0269		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3437	12.9638	2.8819	0.0441	1.1249	0.0136	1.1385	0.3239	0.0130	0.3369		4,665.3708	4,665.3708	0.1927		4,670.1882
Worker	2.1166	1.1718	15.9413	0.0544	5.9639	0.0367	6.0006	1.5819	0.0338	1.6157		5,424.9218	5,424.9218	0.1117		5,427.7147
Total	2.4602	14.1356	18.8232	0.0985	7.0888	0.0503	7.1391	1.9058	0.0468	1.9526		10,090.2926	10,090.2926	0.3044		10,097.9029

3.6 Building Construction - 2024

Unmitigated Construction On-Site

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

Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3337	12.8713	2.7617	0.0438	1.1249	0.0135	1.1384	0.3239	0.0129	0.3368		4,632.5841	4,632.5841	0.1904		4,637.3432
Worker	1.9779	1.0564	14.7468	0.0522	5.9639	0.0360	5.9999	1.5819	0.0331	1.6150		5,209.7319	5,209.7319	0.1006		5,212.2465
Total	2.3116	13.9276	17.5085	0.0961	7.0888	0.0494	7.1382	1.9058	0.0460	1.9518		9,842.3161	9,842.3161	0.2909		9,849.5897

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3337	12.8713	2.7617	0.0438	1.1249	0.0135	1.1384	0.3239	0.0129	0.3368		4,632.5841	4,632.5841	0.1904		4,637.3432
Worker	1.9779	1.0564	14.7468	0.0522	5.9639	0.0360	5.9999	1.5819	0.0331	1.6150		5,209.7319	5,209.7319	0.1006		5,212.2465
Total	2.3116	13.9276	17.5085	0.0961	7.0888	0.0494	7.1382	1.9058	0.0460	1.9518		9,842.3161	9,842.3161	0.2909		9,849.5897

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.6282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	42.8327	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

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
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Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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	0.4545	0.2608	3.4673	0.0113	1.1911	7.5100e-003	1.1987	0.3160	6.9100e-003	0.3229		1,126.6076	1,126.6076	0.0249		1,127.2301
Total	0.4545	0.2608	3.4673	0.0113	1.1911	7.5100e-003	1.1987	0.3160	6.9100e-003	0.3229		1,126.6076	1,126.6076	0.0249		1,127.2301

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.6282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	42.6579	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4545	0.2608	3.4673	0.0113	1.1911	7.5100e-003	1.1987	0.3160	6.9100e-003	0.3229		1,126.6076	1,126.6076	0.0249		1,127.2301

Total	0.4545	0.2608	3.4673	0.0113	1.1911	7.5100e-003	1.1987	0.3160	6.9100e-003	0.3229		1,126.6076	1,126.6076	0.0249		1,127.2301
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3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.6282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	42.8199	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4227	0.2340	3.1839	0.0109	1.1911	7.3300e-003	1.1985	0.3160	6.7500e-003	0.3227		1,083.4899	1,083.4899	0.0223		1,084.0477
Total	0.4227	0.2340	3.1839	0.0109	1.1911	7.3300e-003	1.1985	0.3160	6.7500e-003	0.3227		1,083.4899	1,083.4899	0.0223		1,084.0477

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.6282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0168		281.8690
Total	42.6579	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0168		281.8690

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4227	0.2340	3.1839	0.0109	1.1911	7.3300e-003	1.1985	0.3160	6.7500e-003	0.3227		1,083.4899	1,083.4899	0.0223		1,084.0477
Total	0.4227	0.2340	3.1839	0.0109	1.1911	7.3300e-003	1.1985	0.3160	6.7500e-003	0.3227		1,083.4899	1,083.4899	0.0223		1,084.0477

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

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

Archit. Coating	42.6282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	42.8090	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3950	0.2110	2.9453	0.0104	1.1911	7.1800e-003	1.1983	0.3160	6.6100e-003	0.3226		1,040.5112	1,040.5112	0.0201		1,041.0134
Total	0.3950	0.2110	2.9453	0.0104	1.1911	7.1800e-003	1.1983	0.3160	6.6100e-003	0.3226		1,040.5112	1,040.5112	0.0201		1,041.0134

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.6282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0159		281.8443
Total	42.6579	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0159		281.8443

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3950	0.2110	2.9453	0.0104	1.1911	7.1800e-003	1.1983	0.3160	6.6100e-003	0.3226		1,040.5112	1,040.5112	0.0201		1,041.0134
Total	0.3950	0.2110	2.9453	0.0104	1.1911	7.1800e-003	1.1983	0.3160	6.6100e-003	0.3226		1,040.5112	1,040.5112	0.0201		1,041.0134

Station East - Phase 1 Construction FEIR - Alameda County, Annual

Station East - Phase 1 Construction FEIR

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	1,124.00	Space	5.12	449,600.00	0
Parking Lot	214.00	Space	0.98	85,600.00	0
Parking Lot	2.53	1000sqft	0.06	2,530.00	0
Apartments Mid Rise	683.00	Dwelling Unit	14.57	1,278,379.00	1953
Regional Shopping Center	30.77	1000sqft	0.34	30,770.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2022
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 - Construction analysis only, FEIR Update.

Land Use - lot acreage scaled by SF; land use data provided by applicant. Added new 7th street parking area of 2,530 sf.

Construction Phase - schedule provided by applicant, update includes an additional day of grading.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - defaults from RCEM for utilities phase

Trips and VMT - total hauling trips for demolition provided by applicant; 3 more trips added for 7th street parking.

Demolition - Extra 25 tons from 7th street parking, 2,200 tons in total.

Grading - provided by applicant; assumed entire site graded. Added 25 CY for 7th street parking.

Architectural Coating -

Woodstoves -

Energy Use -

Construction Off-road Equipment Mitigation - assumed Tier 4 final mitigation; and implementation of BAAQMD's Construction Measures

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	32264	32112
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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
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
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	20.00	435.00
tblConstructionPhase	NumDays	370.00	640.00
tblConstructionPhase	NumDays	20.00	108.00
tblConstructionPhase	NumDays	35.00	108.00
tblConstructionPhase	NumDays	20.00	28.00
tblGrading	AcresOfGrading	270.00	26.50
tblGrading	MaterialExported	0.00	80,025.00
tblLandUse	LandUseSquareFeet	683,000.00	1,278,379.00
tblLandUse	LotAcreage	10.12	5.12
tblLandUse	LotAcreage	1.93	0.98
tblLandUse	LotAcreage	17.97	14.57
tblLandUse	LotAcreage	0.71	0.34
tblTripsAndVMT	WorkerTripNumber	727.00	726.00

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					
2021	0.6028	7.2266	4.4175	0.0122	0.4767	0.2677	0.7444	0.2144	0.2487	0.4631	0.0000	1,100.9728	1,100.9728	0.2207	0.0000	1,106.4906
2022	2.4441	4.6867	4.9437	0.0156	0.7737	0.1426	0.9162	0.2085	0.1342	0.3427	0.0000	1,415.4614	1,415.4614	0.1380	0.0000	1,418.9103
2023	6.1294	3.9435	5.0097	0.0174	1.0370	0.1077	1.1447	0.2792	0.1018	0.3810	0.0000	1,590.3435	1,590.3435	0.1121	0.0000	1,593.1452
2024	2.2136	2.4101	2.9602	0.0107	0.6310	0.0593	0.6904	0.1700	0.0559	0.2260	0.0000	972.5992	972.5992	0.0705	0.0000	974.3613
Maximum	6.1294	7.2266	5.0097	0.0174	1.0370	0.2677	1.1447	0.2792	0.2487	0.4631	0.0000	1,590.3435	1,590.3435	0.2207	0.0000	1,593.1452

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1451	1.7958	4.6856	0.0122	0.2747	0.0170	0.2917	0.1129	0.0168	0.1298	0.0000	1,100.9720	1,100.9720	0.2207	0.0000	1,106.4898
2022	2.2110	2.2759	5.1704	0.0156	0.7737	0.0151	0.7887	0.2085	0.0146	0.2231	0.0000	1,415.4609	1,415.4609	0.1380	0.0000	1,418.9098
2023	5.9465	2.2114	5.1706	0.0174	1.0370	0.0133	1.0504	0.2792	0.0128	0.2920	0.0000	1,590.3431	1,590.3431	0.1121	0.0000	1,593.1448
2024	2.1097	1.4094	3.0712	0.0107	0.6310	8.1700e-003	0.6392	0.1700	7.8600e-003	0.1779	0.0000	972.5989	972.5989	0.0705	0.0000	974.3610
Maximum	5.9465	2.2759	5.1706	0.0174	1.0370	0.0170	1.0504	0.2792	0.0168	0.2920	0.0000	1,590.3431	1,590.3431	0.2207	0.0000	1,593.1448

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Percent Reduction	8.58	57.89	-4.42	0.00	6.92	90.72	20.76	11.64	90.37	41.77	0.00	0.00	0.00	0.00	0.00	0.00
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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-15-2021	7-14-2021	3.6131	1.0563
2	7-15-2021	10-14-2021	2.9362	0.7536
3	10-15-2021	1-14-2022	1.4496	0.1310
4	1-15-2022	4-14-2022	1.4189	0.3895
5	4-15-2022	7-14-2022	1.2377	0.7580
6	7-15-2022	10-14-2022	1.9610	1.4532
7	10-15-2022	1-14-2023	2.7203	2.1950
8	1-15-2023	4-14-2023	2.5002	2.0267
9	4-15-2023	7-14-2023	2.5133	2.0346
10	7-15-2023	10-14-2023	2.5436	2.0596
11	10-15-2023	1-14-2024	2.5506	2.0722
12	1-15-2024	4-14-2024	2.4768	2.0350
13	4-15-2024	7-14-2024	1.2835	0.8745
14	7-15-2024	9-30-2024	0.4562	0.2753
		Highest	3.6131	2.1950

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	4/15/2021	9/13/2021	5	108	
2	Grading	Grading	4/15/2021	9/13/2021	5	108	
3	Trenching	Trenching	9/13/2021	3/11/2022	5	130	
4	Paving	Paving	2/1/2022	3/10/2022	5	28	
5	Building Construction	Building Construction	3/12/2022	8/24/2024	5	640	
6	Architectural Coating	Architectural Coating	9/1/2022	5/1/2024	5	435	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 26.5

Acres of Paving: 6.16

Residential Indoor: 2,588,717; Residential Outdoor: 862,906; Non-Residential Indoor: 46,155; Non-Residential Outdoor: 15,385; Striped

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	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Air Compressors	1	8.00	78	0.48
Trenching	Forklifts	1	8.00	89	0.20
Trenching	Generator Sets	1	8.00	84	0.74
Trenching	Graders	1	8.00	187	0.41
Trenching	Plate Compactors	1	8.00	8	0.43
Trenching	Pumps	1	8.00	84	0.74
Trenching	Rubber Tired Dozers	0	8.00	247	0.40
Trenching	Scrapers	2	8.00	367	0.48
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	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	218.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	10,003.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	10	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	726.00	166.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	145.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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

3.2 Demolition - 2021

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					0.0235	0.0000	0.0235	3.5600e-003	0.0000	3.5600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1709	1.6978	1.1645	2.1000e-003		0.0838	0.0838		0.0778	0.0778	0.0000	183.6042	183.6042	0.0517	0.0000	184.8962
Total	0.1709	1.6978	1.1645	2.1000e-003	0.0235	0.0838	0.1073	3.5600e-003	0.0778	0.0814	0.0000	183.6042	183.6042	0.0517	0.0000	184.8962

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	8.7000e-004	0.0294	5.4500e-003	9.0000e-005	1.8500e-003	9.0000e-005	1.9400e-003	5.1000e-004	9.0000e-005	5.9000e-004	0.0000	8.2409	8.2409	4.1000e-004	0.0000	8.2511
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5900e-003	1.8400e-003	0.0193	6.0000e-005	6.4000e-003	4.0000e-005	6.4500e-003	1.7000e-003	4.0000e-005	1.7400e-003	0.0000	5.4956	5.4956	1.3000e-004	0.0000	5.4989
Total	3.4600e-003	0.0312	0.0248	1.5000e-004	8.2500e-003	1.3000e-004	8.3900e-003	2.2100e-003	1.3000e-004	2.3300e-003	0.0000	13.7365	13.7365	5.4000e-004	0.0000	13.7500

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					0.0106	0.0000	0.0106	1.6000e-003	0.0000	1.6000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0250	0.1082	1.2571	2.1000e-003		3.3300e-003	3.3300e-003		3.3300e-003	3.3300e-003	0.0000	183.6040	183.6040	0.0517	0.0000	184.8960
Total	0.0250	0.1082	1.2571	2.1000e-003	0.0106	3.3300e-003	0.0139	1.6000e-003	3.3300e-003	4.9300e-003	0.0000	183.6040	183.6040	0.0517	0.0000	184.8960

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Hauling	8.7000e-004	0.0294	5.4500e-003	9.0000e-005	1.8500e-003	9.0000e-005	1.9400e-003	5.1000e-004	9.0000e-005	5.9000e-004	0.0000	8.2409	8.2409	4.1000e-004	0.0000	8.2511
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5900e-003	1.8400e-003	0.0193	6.0000e-005	6.4000e-003	4.0000e-005	6.4500e-003	1.7000e-003	4.0000e-005	1.7400e-003	0.0000	5.4956	5.4956	1.3000e-004	0.0000	5.4989
Total	3.4600e-003	0.0312	0.0248	1.5000e-004	8.2500e-003	1.3000e-004	8.3900e-003	2.2100e-003	1.3000e-004	2.3300e-003	0.0000	13.7365	13.7365	5.4000e-004	0.0000	13.7500

3.3 Grading - 2021

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					0.3438	0.0000	0.3438	0.1810	0.0000	0.1810	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2263	2.5056	1.6674	3.3500e-003		0.1072	0.1072		0.0986	0.0986	0.0000	294.2729	294.2729	0.0952	0.0000	296.6522
Total	0.2263	2.5056	1.6674	3.3500e-003	0.3438	0.1072	0.4510	0.1810	0.0986	0.2796	0.0000	294.2729	294.2729	0.0952	0.0000	296.6522

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	0.0401	1.3487	0.2503	3.9200e-003	0.0847	4.1200e-003	0.0888	0.0233	3.9400e-003	0.0273	0.0000	378.1340	378.1340	0.0188	0.0000	378.6027
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	3.4500e-003	2.4600e-003	0.0257	8.0000e-005	8.5400e-003	6.0000e-005	8.6000e-003	2.2700e-003	5.0000e-005	2.3200e-003	0.0000	7.3275	7.3275	1.8000e-004	0.0000	7.3319

Total	0.0435	1.3511	0.2760	4.0000e-003	0.0933	4.1800e-003	0.0974	0.0256	3.9900e-003	0.0296	0.0000	385.4615	385.4615	0.0189	0.0000	385.9346
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1547	0.0000	0.1547	0.0814	0.0000	0.0814	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.1782	1.7820	3.3500e-003		5.4800e-003	5.4800e-003		5.4800e-003	5.4800e-003	0.0000	294.2726	294.2726	0.0952	0.0000	296.6519
Total	0.0411	0.1782	1.7820	3.3500e-003	0.1547	5.4800e-003	0.1602	0.0814	5.4800e-003	0.0869	0.0000	294.2726	294.2726	0.0952	0.0000	296.6519

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	0.0401	1.3487	0.2503	3.9200e-003	0.0847	4.1200e-003	0.0888	0.0233	3.9400e-003	0.0273	0.0000	378.1340	378.1340	0.0188	0.0000	378.6027
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	3.4500e-003	2.4600e-003	0.0257	8.0000e-005	8.5400e-003	6.0000e-005	8.6000e-003	2.2700e-003	5.0000e-005	2.3200e-003	0.0000	7.3275	7.3275	1.8000e-004	0.0000	7.3319
Total	0.0435	1.3511	0.2760	4.0000e-003	0.0933	4.1800e-003	0.0974	0.0256	3.9900e-003	0.0296	0.0000	385.4615	385.4615	0.0189	0.0000	385.9346

3.4 Trenching - 2021

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	0.1554	1.6386	1.2610	2.4900e-003		0.0723	0.0723		0.0681	0.0681	0.0000	217.1130	217.1130	0.0542	0.0000	218.4689
Total	0.1554	1.6386	1.2610	2.4900e-003		0.0723	0.0723		0.0681	0.0681	0.0000	217.1130	217.1130	0.0542	0.0000	218.4689

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	3.1900e-003	2.2800e-003	0.0238	8.0000e-005	7.9100e-003	5.0000e-005	7.9600e-003	2.1000e-003	5.0000e-005	2.1500e-003	0.0000	6.7847	6.7847	1.6000e-004	0.0000	6.7888
Total	3.1900e-003	2.2800e-003	0.0238	8.0000e-005	7.9100e-003	5.0000e-005	7.9600e-003	2.1000e-003	5.0000e-005	2.1500e-003	0.0000	6.7847	6.7847	1.6000e-004	0.0000	6.7888

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	0.0288	0.1248	1.3219	2.4900e-003		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	217.1127	217.1127	0.0542	0.0000	218.4686
Total	0.0288	0.1248	1.3219	2.4900e-003		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	217.1127	217.1127	0.0542	0.0000	218.4686

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	3.1900e-003	2.2800e-003	0.0238	8.0000e-005	7.9100e-003	5.0000e-005	7.9600e-003	2.1000e-003	5.0000e-005	2.1500e-003	0.0000	6.7847	6.7847	1.6000e-004	0.0000	6.7888
Total	3.1900e-003	2.2800e-003	0.0238	8.0000e-005	7.9100e-003	5.0000e-005	7.9600e-003	2.1000e-003	5.0000e-005	2.1500e-003	0.0000	6.7847	6.7847	1.6000e-004	0.0000	6.7888

3.4 Trenching - 2022

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	0.0873	0.8894	0.7535	1.5600e-003		0.0384	0.0384		0.0362	0.0362	0.0000	135.8098	135.8098	0.0338	0.0000	136.6550
Total	0.0873	0.8894	0.7535	1.5600e-003		0.0384	0.0384		0.0362	0.0362	0.0000	135.8098	135.8098	0.0338	0.0000	136.6550

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	1.8500e-003	1.2700e-003	0.0136	5.0000e-005	4.9400e-003	3.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0859	4.0859	9.0000e-005	0.0000	4.0882
Total	1.8500e-003	1.2700e-003	0.0136	5.0000e-005	4.9400e-003	3.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0859	4.0859	9.0000e-005	0.0000	4.0882

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	0.0180	0.0780	0.8262	1.5600e-003		2.4000e-003	2.4000e-003		2.4000e-003	2.4000e-003	0.0000	135.8097	135.8097	0.0338	0.0000	136.6548
Total	0.0180	0.0780	0.8262	1.5600e-003		2.4000e-003	2.4000e-003		2.4000e-003	2.4000e-003	0.0000	135.8097	135.8097	0.0338	0.0000	136.6548

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	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	1.8500e-003	1.2700e-003	0.0136	5.0000e-005	4.9400e-003	3.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0859	4.0859	9.0000e-005	0.0000	4.0882
Total	1.8500e-003	1.2700e-003	0.0136	5.0000e-005	4.9400e-003	3.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0859	4.0859	9.0000e-005	0.0000	4.0882

3.5 Paving - 2022

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	0.0154	0.1558	0.2041	3.2000e-004		7.9500e-003	7.9500e-003		7.3100e-003	7.3100e-003	0.0000	28.0386	28.0386	9.0700e-003	0.0000	28.2653
Paving	1.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0168	0.1558	0.2041	3.2000e-004		7.9500e-003	7.9500e-003		7.3100e-003	7.3100e-003	0.0000	28.0386	28.0386	9.0700e-003	0.0000	28.2653

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	6.2000e-004	4.3000e-004	4.5800e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3729	1.3729	3.0000e-005	0.0000	1.3736

Total	6.2000e-004	4.3000e-004	4.5800e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3729	1.3729	3.0000e-005	0.0000	1.3736
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.9300e-003	0.0170	0.2421	3.2000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	28.0386	28.0386	9.0700e-003	0.0000	28.2653
Paving	1.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.2900e-003	0.0170	0.2421	3.2000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	28.0386	28.0386	9.0700e-003	0.0000	28.2653

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	6.2000e-004	4.3000e-004	4.5800e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3729	1.3729	3.0000e-005	0.0000	1.3736
Total	6.2000e-004	4.3000e-004	4.5800e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3729	1.3729	3.0000e-005	0.0000	1.3736

3.6 Building Construction - 2022

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	0.1792	1.6396	1.7182	2.8300e-003		0.0850	0.0850		0.0799	0.0799	0.0000	243.3115	243.3115	0.0583	0.0000	244.7688
Total	0.1792	1.6396	1.7182	2.8300e-003		0.0850	0.0850		0.0799	0.0799	0.0000	243.3115	243.3115	0.0583	0.0000	244.7688

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	0.0504	1.7708	0.3699	4.7200e-003	0.1145	3.3600e-003	0.1178	0.0331	3.2200e-003	0.0363	0.0000	452.1499	452.1499	0.0240	0.0000	452.7491
Worker	0.2260	0.1553	1.6633	5.5100e-003	0.6027	3.9500e-003	0.6067	0.1603	3.6400e-003	0.1640	0.0000	498.3511	498.3511	0.0111	0.0000	498.6277
Total	0.2765	1.9261	2.0332	0.0102	0.7172	7.3100e-003	0.7245	0.1935	6.8600e-003	0.2003	0.0000	950.5009	950.5009	0.0350	0.0000	951.3768

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	0.0344	0.2346	1.8333	2.8300e-003		4.2800e-003	4.2800e-003		4.2800e-003	4.2800e-003	0.0000	243.3112	243.3112	0.0583	0.0000	244.7685
Total	0.0344	0.2346	1.8333	2.8300e-003		4.2800e-003	4.2800e-003		4.2800e-003	4.2800e-003	0.0000	243.3112	243.3112	0.0583	0.0000	244.7685

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	0.0504	1.7708	0.3699	4.7200e-003	0.1145	3.3600e-003	0.1178	0.0331	3.2200e-003	0.0363	0.0000	452.1499	452.1499	0.0240	0.0000	452.7491
Worker	0.2260	0.1553	1.6633	5.5100e-003	0.6027	3.9500e-003	0.6067	0.1603	3.6400e-003	0.1640	0.0000	498.3511	498.3511	0.0111	0.0000	498.6277
Total	0.2765	1.9261	2.0332	0.0102	0.7172	7.3100e-003	0.7245	0.1935	6.8600e-003	0.2003	0.0000	950.5009	950.5009	0.0350	0.0000	951.3768

3.6 Building Construction - 2023

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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383

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	0.0458	1.6972	0.4003	5.6700e-003	0.1417	1.8000e-003	0.1435	0.0410	1.7200e-003	0.0427	0.0000	543.8784	543.8784	0.0237	0.0000	544.4709
Worker	0.2605	0.1725	1.8857	6.5600e-003	0.7462	4.7700e-003	0.7510	0.1985	4.4000e-003	0.2029	0.0000	593.4084	593.4084	0.0123	0.0000	593.7147
Total	0.3063	1.8697	2.2860	0.0122	0.8880	6.5700e-003	0.8945	0.2395	6.1200e-003	0.2456	0.0000	1,137.2868	1,137.2868	0.0360	0.0000	1,138.1856

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	0.0426	0.2905	2.2698	3.5000e-003		5.3000e-003	5.3000e-003		5.3000e-003	5.3000e-003	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	0.0426	0.2905	2.2698	3.5000e-003		5.3000e-003	5.3000e-003		5.3000e-003	5.3000e-003	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	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	0.0458	1.6972	0.4003	5.6700e-003	0.1417	1.8000e-003	0.1435	0.0410	1.7200e-003	0.0427	0.0000	543.8784	543.8784	0.0237	0.0000	544.4709
Worker	0.2605	0.1725	1.8857	6.5600e-003	0.7462	4.7700e-003	0.7510	0.1985	4.4000e-003	0.2029	0.0000	593.4084	593.4084	0.0123	0.0000	593.7147
Total	0.3063	1.8697	2.2860	0.0122	0.8880	6.5700e-003	0.8945	0.2395	6.1200e-003	0.2456	0.0000	1,137.2868	1,137.2868	0.0360	0.0000	1,138.1856

3.6 Building Construction - 2024

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	0.1251	1.1427	1.3742	2.2900e-003		0.0521	0.0521		0.0490	0.0490	0.0000	197.0717	197.0717	0.0466	0.0000	198.2368
Total	0.1251	1.1427	1.3742	2.2900e-003		0.0521	0.0521		0.0490	0.0490	0.0000	197.0717	197.0717	0.0466	0.0000	198.2368

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	0.0290	1.1016	0.2507	3.6800e-003	0.0927	1.1600e-003	0.0938	0.0268	1.1100e-003	0.0279	0.0000	353.1500	353.1500	0.0153	0.0000	353.5325
Worker	0.1594	0.1016	1.1381	4.1200e-003	0.4879	3.0600e-003	0.4910	0.1298	2.8100e-003	0.1326	0.0000	372.6192	372.6192	7.2000e-003	0.0000	372.7993

Total	0.1884	1.2033	1.3888	7.8000e-003	0.5806	4.2200e-003	0.5848	0.1566	3.9200e-003	0.1605	0.0000	725.7692	725.7692	0.0225	0.0000	726.3318
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0279	0.1900	1.4841	2.2900e-003		3.4700e-003	3.4700e-003		3.4700e-003	3.4700e-003	0.0000	197.0715	197.0715	0.0466	0.0000	198.2366
Total	0.0279	0.1900	1.4841	2.2900e-003		3.4700e-003	3.4700e-003		3.4700e-003	3.4700e-003	0.0000	197.0715	197.0715	0.0466	0.0000	198.2366

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	0.0290	1.1016	0.2507	3.6800e-003	0.0927	1.1600e-003	0.0938	0.0268	1.1100e-003	0.0279	0.0000	353.1500	353.1500	0.0153	0.0000	353.5325
Worker	0.1594	0.1016	1.1381	4.1200e-003	0.4879	3.0600e-003	0.4910	0.1298	2.8100e-003	0.1326	0.0000	372.6192	372.6192	7.2000e-003	0.0000	372.7993
Total	0.1884	1.2033	1.3888	7.8000e-003	0.5806	4.2200e-003	0.5848	0.1566	3.9200e-003	0.1605	0.0000	725.7692	725.7692	0.0225	0.0000	726.3318

3.7 Architectural Coating - 2022

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	1.8543					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9000e-003	0.0613	0.0789	1.3000e-004		3.5500e-003	3.5500e-003		3.5500e-003	3.5500e-003	0.0000	11.1067	11.1067	7.2000e-004	0.0000	11.1247
Total	1.8632	0.0613	0.0789	1.3000e-004		3.5500e-003	3.5500e-003		3.5500e-003	3.5500e-003	0.0000	11.1067	11.1067	7.2000e-004	0.0000	11.1247

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	0.0187	0.0129	0.1376	4.6000e-004	0.0499	3.3000e-004	0.0502	0.0133	3.0000e-004	0.0136	0.0000	41.2351	41.2351	9.2000e-004	0.0000	41.2580
Total	0.0187	0.0129	0.1376	4.6000e-004	0.0499	3.3000e-004	0.0502	0.0133	3.0000e-004	0.0136	0.0000	41.2351	41.2351	9.2000e-004	0.0000	41.2580

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	1.8543					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2900e-003	5.6000e-003	0.0797	1.3000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	11.1066	11.1066	7.2000e-004	0.0000	11.1247
Total	1.8556	5.6000e-003	0.0797	1.3000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	11.1066	11.1066	7.2000e-004	0.0000	11.1247

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	0.0187	0.0129	0.1376	4.6000e-004	0.0499	3.3000e-004	0.0502	0.0133	3.0000e-004	0.0136	0.0000	41.2351	41.2351	9.2000e-004	0.0000	41.2580
Total	0.0187	0.0129	0.1376	4.6000e-004	0.0499	3.3000e-004	0.0502	0.0133	3.0000e-004	0.0136	0.0000	41.2351	41.2351	9.2000e-004	0.0000	41.2580

3.7 Architectural Coating - 2023

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	5.5417					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	5.5666	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419

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	0.0520	0.0345	0.3766	1.3100e-003	0.1490	9.5000e-004	0.1500	0.0397	8.8000e-004	0.0405	0.0000	118.5182	118.5182	2.4500e-003	0.0000	118.5794
Total	0.0520	0.0345	0.3766	1.3100e-003	0.1490	9.5000e-004	0.1500	0.0397	8.8000e-004	0.0405	0.0000	118.5182	118.5182	2.4500e-003	0.0000	118.5794

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	5.5417					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8600e-003	0.0167	0.2382	3.9000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	5.5455	0.0167	0.2382	3.9000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	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	0.0520	0.0345	0.3766	1.3100e-003	0.1490	9.5000e-004	0.1500	0.0397	8.8000e-004	0.0405	0.0000	118.5182	118.5182	2.4500e-003	0.0000	118.5794
Total	0.0520	0.0345	0.3766	1.3100e-003	0.1490	9.5000e-004	0.1500	0.0397	8.8000e-004	0.0405	0.0000	118.5182	118.5182	2.4500e-003	0.0000	118.5794

3.7 Architectural Coating - 2024

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	1.8756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9500e-003	0.0536	0.0797	1.3000e-004		2.6800e-003	2.6800e-003		2.6800e-003	2.6800e-003	0.0000	11.2343	11.2343	6.3000e-004	0.0000	11.2501
Total	1.8836	0.0536	0.0797	1.3000e-004		2.6800e-003	2.6800e-003		2.6800e-003	2.6800e-003	0.0000	11.2343	11.2343	6.3000e-004	0.0000	11.2501

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	0.0165	0.0105	0.1177	4.3000e-004	0.0504	3.2000e-004	0.0508	0.0134	2.9000e-004	0.0137	0.0000	38.5239	38.5239	7.4000e-004	0.0000	38.5425

Total	0.0165	0.0105	0.1177	4.3000e-004	0.0504	3.2000e-004	0.0508	0.0134	2.9000e-004	0.0137	0.0000	38.5239	38.5239	7.4000e-004	0.0000	38.5425
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3100e-003	5.6700e-003	0.0806	1.3000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	11.2343	11.2343	6.3000e-004	0.0000	11.2501
Total	1.8770	5.6700e-003	0.0806	1.3000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	11.2343	11.2343	6.3000e-004	0.0000	11.2501

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	0.0165	0.0105	0.1177	4.3000e-004	0.0504	3.2000e-004	0.0508	0.0134	2.9000e-004	0.0137	0.0000	38.5239	38.5239	7.4000e-004	0.0000	38.5425
Total	0.0165	0.0105	0.1177	4.3000e-004	0.0504	3.2000e-004	0.0508	0.0134	2.9000e-004	0.0137	0.0000	38.5239	38.5239	7.4000e-004	0.0000	38.5425

Station East - Phase 2 Construction - Alameda County, Annual

Station East - Phase 2 Construction Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	454.00	Space	1.41	181,600.00	0
Apartments Mid Rise	281.00	Dwelling Unit	4.07	525,951.00	804

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	CH4 Intensity	0.029	N2O Intensity	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - construction analysis only

Land Use - lot acreage scaled by sf; land use data provided by applicant

Construction Phase - schedule provided by applicant

Grading -

Construction Off-road Equipment Mitigation - Tier 4 final mitigation; BAAQMD basic construction measures

Off-road Equipment - default equipment from RCEM

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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
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
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	392.00
tblConstructionPhase	NumDays	230.00	343.00
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	PhaseEndDate	3/24/2023	9/1/2025
tblConstructionPhase	PhaseEndDate	1/27/2023	12/17/2025
tblConstructionPhase	PhaseEndDate	2/24/2023	9/6/2022
tblConstructionPhase	PhaseEndDate	3/11/2022	9/7/2022
tblConstructionPhase	PhaseStartDate	2/25/2023	3/1/2024
tblConstructionPhase	PhaseStartDate	3/12/2022	8/25/2024
tblConstructionPhase	PhaseStartDate	1/28/2023	8/1/2022
tblLandUse	LandUseSquareFeet	281,000.00	525,951.00
tblLandUse	LotAcreage	4.09	1.41
tblLandUse	LotAcreage	7.39	4.07
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Pumps

tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
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2.0 Emissions Summary

2.1 Overall Construction
Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2437	2.4308	2.1651	4.4300e-	0.0143	0.1061	0.1204	3.7900e-	0.0998	0.1036	0.0000	386.4941	386.4941	0.0956	0.0000	388.8829
2024	2.2220	0.9979	1.3393	3.5500e-	0.1679	0.0360	0.2039	0.0451	0.0343	0.0793	0.0000	317.9113	317.9113	0.0320	0.0000	318.7111
2025	1.9587	2.3074	2.9848	8.1500e-	0.3648	0.0732	0.4381	0.0982	0.0691	0.1673	0.0000	731.5101	731.5101	0.0819	0.0000	733.5574
Maximum	2.2220	2.4308	2.9848	8.1500e-003	0.3648	0.1061	0.4381	0.0982	0.0998	0.1673	0.0000	731.5101	731.5101	0.0956	0.0000	733.5574

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0552	0.2197	2.3878	4.4300e-	0.0143	6.7400e-	0.0210	3.7900e-	6.7300e-003	0.0105	0.0000	386.4937	386.4937	0.0956	0.0000	388.8824
2024	2.1530	0.3635	1.4012	3.5500e-	0.1679	3.4700e-	0.1713	0.0451	3.3900e-003	0.0485	0.0000	317.9112	317.9112	0.0320	0.0000	318.7109
2025	1.8160	0.9344	3.1594	8.1500e-	0.3648	8.0200e-	0.3729	0.0982	7.8400e-003	0.1060	0.0000	731.5097	731.5097	0.0819	0.0000	733.5570
Maximum	2.1530	0.9344	3.1594	8.1500e-	0.3648	8.0200e-	0.3729	0.0982	7.8400e-003	0.1060	0.0000	731.5097	731.5097	0.0956	0.0000	733.5570

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	9.05	73.54	-7.08	0.00	0.00	91.54	25.86	0.00	91.16	52.88	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-12-2022	6-11-2022	1.2878	0.1303
2	6-12-2022	9-11-2022	1.3943	0.1453
8	12-12-2023	3-11-2024	0.0815	0.0766
9	3-12-2024	6-11-2024	0.6809	0.6401
10	6-12-2024	9-11-2024	0.8148	0.6946
11	9-12-2024	12-11-2024	1.3559	0.9141
12	12-12-2024	3-11-2025	1.3095	0.9015
13	3-12-2025	6-11-2025	1.3244	0.9159
14	6-12-2025	9-11-2025	1.2495	0.8452
15	9-12-2025	9-30-2025	0.1334	0.0569
		Highest	1.3943	0.9159

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Trenching	Trenching	3/12/2022	9/7/2022	5	128	
2	Building Construction	Building Construction	8/25/2024	12/17/2025	5	343	
3	Paving	Paving	8/1/2022	9/6/2022	5	27	
4	Architectural Coating	Architectural Coating	3/1/2024	9/1/2025	5	392	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.41

Residential Indoor: 1,065,051; Residential Outdoor: 355,017; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Trenching	Rubber Tired Dozers	0	8.00	247	0.40
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	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
Trenching	Air Compressors	1	8.00	78	0.48
Trenching	Forklifts	1	8.00	89	0.20
Trenching	Generator Sets	1	8.00	84	0.74
Trenching	Graders	1	8.00	187	0.41
Trenching	Plate Compactors	1	8.00	8	0.43
Trenching	Pumps	1	8.00	84	0.74
Trenching	Scrapers	2	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor Vehicle	Hauling
Trenching	10	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	56.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	279.00	60.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment
 Water Exposed Area
 Reduce Vehicle Speed on Unpaved Roads

3.2 Trenching - 2022 Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2234	2.2769	1.9289	3.99E-03		0.0984	0.0984		0.0927	0.0927	0	347.6731	347.6731	0.0865	0	349.8367
Total	0.2234	2.2769	1.9289	3.9900e-003		0.0984	0.0984		0.0927	0.0927	0.0000	347.6731	347.6731	0.0865	0.0000	349.8367

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	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	0	0
Worker	4.74E-03	3.26E-03	0.0349	1.20E-04	0.0127	8.00E-05	0.0127	3.37E-03	8.00E-05	3.44E-03	0	10.46	10.46	2.30E-04	0	10.4658
Total	4.7400e-003	3.2600e-003	0.0349	1.2000e-004	0.0127	8.0000e-005	0.0127	3.3700e-003	8.0000e-005	3.4400e-003	0.0000	10.4600	10.4600	2.3000e-004	0.0000	10.4658

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0461	0.1997	2.115	3.99E-03		6.14E-03	6.14E-03		6.14E-03	6.14E-03	0	347.6727	347.6727	0.0865	0	349.8363
Total	0.0461	0.1997	2.1150	3.9900e-003		6.1400e-003	6.1400e-003		6.1400e-003	6.1400e-003	0	347.6727	347.6727	0.0865	0	349.8363

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	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	0	0
Worker	4.74E-03	3.26E-03	0.0349	1.20E-04	0.0127	8.00E-05	0.0127	3.37E-03	8.00E-05	3.44E-03	0	10.46	10.46	2.30E-04	0	10.4658
Total	4.7400e-003	3.2600e-003	0.0349	1.2000e-004	0.0127	8.0000e-005	0.0127	3.3700e-003	8.0000e-005	3.4400e-003	0	10.46	10.46	2.30E-04	0	10.4658

3.3 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0677	0.6184	0.7437	1.24E-03		0.0282	0.0282		0.0265	0.0265	0	106.6506	106.6506	0.0252	0	107.2811
Total	0.0677	0.6184	0.7437	1.24E-03		0.0282	0.0282		0.0265	0.0265	0	106.6506	106.6506	0.0252	0	107.2811

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	5.68E-03	0.2155	0.049	7.20E-04	0.0181	2.30E-04	0.0184	5.24E-03	2.20E-04	5.46E-03	0	69.0782	69.0782	2.99E-03	0	69.1531
Worker	0.0332	0.0211	0.2367	8.60E-04	0.1015	6.40E-04	0.1021	0.027	5.90E-04	0.0276	0	77.4947	77.4947	1.50E-03	0	77.5321
Total	0.0388	0.2366	0.2857	1.58E-03	0.1196	8.70E-04	0.1205	0.0322	8.10E-04	0.033	0	146.5729	146.5729	4.49E-03	0	146.6852

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0151	0.1028	0.8032	1.24E-03		1.88E-03	1.88E-03		1.88E-03	1.88E-03	0	106.6505	106.6505	0.0252	0	107.281
Total	0.0151	0.1028	0.8032	1.2400e-003		1.8800e-003	1.8800e-003		1.8800e-003	1.8800e-003	0	106.6505	106.6505	0.0252	0	107.281

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	5.68E-03	0.2155	0.049	7.20E-04	0.0181	2.30E-04	0.0184	5.24E-03	2.20E-04	5.46E-03	0	69.0782	69.0782	2.99E-03	0	69.1531
Worker	0.0332	0.0211	0.2367	8.60E-04	0.1015	6.40E-04	0.1021	0.027	5.90E-04	0.0276	0	77.4947	77.4947	1.50E-03	0	77.5321
Total	0.0388	0.2366	0.2857	1.58E-03	0.1196	8.70E-04	0.1205	0.0322	8.10E-04	0.033	0	146.5729	146.5729	4.49E-03	0	146.6852

3.3 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1716	1.565	2.0186	3.38E-03		0.0662	0.0662		0.0623	0.0623	0	291.0589	291.0589	0.0684	0	292.7694
Total	0.1716	1.565	2.0186	3.38E-03		0.0662	0.0662		0.0623	0.0623	0	291.0589	291.0589	0.0684	0	292.7694

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0.0151	0.5832	0.129	1.95E-03	0.0495	6.10E-04	0.0501	0.0143	5.80E-04	0.0149	0	187.2266	187.2266	8.05E-03	0	187.4279
Worker	0.0851	0.0523	0.5967	2.24E-03	0.2769	1.71E-03	0.2786	0.0737	1.57E-03	0.0752	0	202.794	202.794	3.70E-03	0	202.8864
Total	0.1002	0.6355	0.7257	4.1900e-003	0.3263	2.3200e-003	0.3286	0.0880	2.1500e-003	0.0901	0.0000	390.0206	390.0206	0.0118	0.0000	390.3143

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0411	0.2805	2.1913	3.38E-03		5.12E-03	5.12E-03		5.12E-03	5.12E-03	0	291.0586	291.0586	0.0684	0	292.769
Total	0.0411	0.2805	2.1913	3.3800e-003		5.1200e-003	5.1200e-003		5.1200e-003	5.1200e-003	0	291.0586	291.0586	0.0684	0	292.769

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vendor	0.0151	0.5832	0.129	1.95E-03	0.0495	6.10E-04	0.0501	0.0143	5.80E-04	0.0149	0	187.2266	187.2266	8.05E-03	0	187.4279
Worker	0.0851	0.0523	0.5967	2.24E-03	0.2769	1.71E-03	0.2786	0.0737	1.57E-03	0.0752	0	202.794	202.794	3.70E-03	0	202.8864
Total	0.1002	0.6355	0.7257	4.1900e-003	0.3263	2.3200e-003	0.3286	0.0880	2.1500e-003	0.0901	0	390.0206	390.0206	0.0118	0	390.3143

3.4 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0149	0.1502	0.1968	3.10E-04		7.67E-03	7.67E-03		7.05E-03	7.05E-03	0	27.0372	27.0372	8.74E-03	0	27.2558
Paving	0					0	0		0	0	0	0	0	0	0	0
Total	0.0149	0.1502	0.1968	3.1000e-004		7.6700e-003	7.6700e-003		7.0500e-003	7.0500e-003	0.0000	27.0372	27.0372	8.7400e-003	0.0000	27.2558

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	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	0	0
Worker	6.00E-04	4.10E-04	4.42E-03	1.00E-05	1.60E-03	1.00E-05	1.61E-03	4.30E-04	1.00E-05	4.40E-04	0	1.3238	1.3238	3.00E-05	0	1.3246
Total	6.0000e-004	4.1000e-004	4.4200e-003	1.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.3238	1.3238	3.0000e-005	0.0000	1.3246

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.79E-03	0.0164	0.2335	3.10E-04		5.00E-04	5.00E-04		5.00E-04	5.00E-04	0	27.0372	27.0372	8.74E-03	0	27.2558
Paving	0					0	0		0	0	0	0	0	0	0	0
Total	3.7900e-003	0.0164	0.2335	3.1000e-004		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	27.0372	27.0372	8.7400e-003	0.0000	27.2558

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	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	0	0
Worker	6.00E-04	4.10E-04	4.42E-03	1.00E-05	1.60E-03	1.00E-05	1.61E-03	4.30E-04	1.00E-05	4.40E-04	0	1.3238	1.3238	3.00E-05	0	1.3246
Total	6.0000e-004	4.1000e-004	4.4200e-003	1.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.3000e-004	1.0000e-005	4.4000e-004	0	1.3238	1.3238	3.00E-05	0	1.3246

3.5 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.08					0	0		0	0	0	0	0	0	0	0
Off-Road	0.0197	0.1329	0.1973	3.20E-04		6.64E-03	6.64E-03		6.64E-03	6.64E-03	0	27.8305	27.8305	1.57E-03	0	27.8696
Total	2.0997	0.1329	0.1973	3.2000e-004		6.6400e-003	6.6400e-003		6.6400e-003	6.6400e-003	0.0000	27.8305	27.8305	1.5700e-003	0.0000	27.8696

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	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	0	0
Worker	0.0158	0.0101	0.1126	4.10E-04	0.0483	3.00E-04	0.0486	0.0128	2.80E-04	0.0131	0	36.8574	36.8574	7.10E-04	0	36.8752
Total	0.0158	0.0101	0.1126	4.1000e-004	0.0483	3.0000e-004	0.0486	0.0128	2.8000e-004	0.0131	0.0000	36.8574	36.8574	7.1000e-004	0.0000	36.8752

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.08					0	0		0	0	0	0	0	0	0	0
Off-Road	3.24E-03	0.014	0.1997	3.20E-04		4.30E-04	4.30E-04		4.30E-04	4.30E-04	0	27.8304	27.8304	1.57E-03	0	27.8696
Total	2.0833	0.0140	0.1997	3.2000e-004		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0	27.8304	27.8304	1.57E-03	0	27.8696

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	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	0	0
Worker	0.0158	0.0101	0.1126	4.10E-04	0.0483	3.00E-04	0.0486	0.0128	2.80E-04	0.0131	0	36.8574	36.8574	7.10E-04	0	36.8752
Total	0.0158	0.0101	0.1126	4.1000e-004	0.0483	3.0000e-004	0.0486	0.0128	2.8000e-004	0.0131	0	36.8574	36.8574	7.10E-04	0	36.8752

3.5 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.6602					0	0		0	0	0	0	0	0	0	0
Off-Road	0.0149	0.0997	0.1574	2.60E-04		4.48E-03	4.48E-03		4.48E-03	4.48E-03	0	22.2133	22.2133	1.21E-03	0	22.2436
Total	1.6751	0.0997	0.1574	2.6000e-004		4.4800e-003	4.4800e-003		4.4800e-003	4.4800e-003	0.0000	22.2133	22.2133	1.2100e-003	0.0000	22.2436

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0	0	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	0	0
Worker	0.0118	7.28E-03	0.083	3.10E-04	0.0385	2.40E-04	0.0388	0.0103	2.20E-04	0.0105	0	28.2172	28.2172	5.10E-04	0	28.2301
Total	0.0118	7.2800e-003	0.0830	3.1000e-004	0.0385	2.4000e-004	0.0388	0.0103	2.2000e-004	0.0105	0.0000	28.2172	28.2172	5.1000e-004	0.0000	28.2301

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.6602					0	0		0	0	0	0	0	0	0	0
Off-Road	2.59E-03	0.0112	0.1594	2.60E-04		3.40E-04	3.40E-04		3.40E-04	3.40E-04	0	22.2133	22.2133	1.21E-03	0	22.2436
Total	1.6628	0.0112	0.1594	2.6000e-004		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0	22.2133	22.2133	1.21E-03	0	22.2436

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0	0	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	0	0
Worker	0.0118	7.28E-03	0.083	3.10E-04	0.0385	2.40E-04	0.0388	0.0103	2.20E-04	0.0105	0	28.2172	28.2172	5.10E-04	0	28.2301
Total	0.0118	7.2800e-003	0.0830	3.1000e-004	0.0385	2.4000e-004	0.0388	0.0103	2.2000e-004	0.0105	0.0000	28.2172	28.2172	5.1000e-004	0.0000	28.2301

Station East - Phase 2 Construction - Alameda County, Summer

Station East - Phase 2 Construction Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	454.00	Space	1.41	181,600.00	0
Apartments Mid Rise	281.00	Dwelling Unit	4.07	525,951.00	804

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	641.35	CH4 Intensity	0.029	N2O Intensity	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - construction analysis only

Land Use - lot acreage scaled by sf; land use data provided by applicant

Construction Phase - schedule provided by applicant

Grading -

Construction Off-road Equipment Mitigation - Tier 4 final mitigation; BAAQMD basic construction measures

Off-road Equipment - default equipment from RCEM

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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
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
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	392.00
tblConstructionPhase	NumDays	230.00	343.00
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	PhaseEndDate	3/24/2023	9/1/2025
tblConstructionPhase	PhaseEndDate	1/27/2023	12/17/2025
tblConstructionPhase	PhaseEndDate	2/24/2023	9/6/2022
tblConstructionPhase	PhaseEndDate	3/11/2022	9/7/2022
tblConstructionPhase	PhaseStartDate	2/25/2023	3/1/2024
tblConstructionPhase	PhaseStartDate	3/12/2022	8/25/2024
tblConstructionPhase	PhaseStartDate	1/28/2023	8/1/2022
tblLandUse	LandUseSquareFeet	281,000.00	525,951.00
tblLandUse	LotAcreage	4.09	1.41
tblLandUse	LotAcreage	7.39	4.07
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Pumps

tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
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2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)
Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	4.7194	46.7739	45.6764	0.0883	0.3286	2.1069	2.4354	0.0872	1.9720	2.0592	0.0000	8,506.636	8,506.6367	2.2115	0.0000	8,561.923
2024	21.7686	19.8023	25.7798	0.0699	3.1585	0.6957	3.8542	0.8470	0.6578	1.5048	0.0000	6,915.514	6,915.5146	0.7354	0.0000	6,933.900
2025	21.5968	18.6729	25.1545	0.0688	3.1585	0.6002	3.7588	0.8470	0.5674	1.4144	0.0000	6,806.935	6,806.9359	0.7262	0.0000	6,825.091
Maximum	21.7686	46.7739	45.6764	0.0883	3.1585	2.1069	3.8542	0.8470	1.9720	2.0592	0.0000	8,506.636	8,506.6367	2.2115	0.0000	8,561.923

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.1258	4.4070	51.2992	0.0883	0.3286	0.1355	0.4641	0.0872	0.1353	0.2225	0.0000	8,506.636	8,506.6367	2.2115	0.0000	8,561.923
2024	20.4738	7.5032	27.0955	0.0699	3.1585	0.0662	3.2247	0.8470	0.0647	0.9117	0.0000	6,915.514	6,915.5146	0.7354	0.0000	6,933.900
2025	20.4160	7.4212	26.5534	0.0688	3.1585	0.0659	3.2244	0.8470	0.0644	0.9114	0.0000	6,806.935	6,806.9359	0.7262	0.0000	6,825.091
Maximum	20.4738	7.5032	51.2992	0.0883	3.1585	0.1355	3.2247	0.8470	0.1353	0.9117	0.0000	8,506.636	8,506.6367	2.2115	0.0000	8,561.923

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent	12.62	77.32	-8.63	0.00	0.00	92.14	31.20	0.00	91.73	58.91	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase	Phase Name	Phase Type	Start Date	End Date	Num Days	Num Days	Phase Description
1	Trenching	Trenching	3/12/2022	9/7/2022	5	128	
2	Building Construction	Building Construction	8/25/2024	12/17/2025	5	343	
3	Paving	Paving	8/1/2022	9/6/2022	5	27	
4	Architectural Coating	Architectural Coating	3/1/2024	9/1/2025	5	392	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.41

Residential Indoor: 1,065,051; Residential Outdoor: 355,017; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Trenching	Rubber Tired Dozers	0	8.00	247	0.40
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	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
Trenching	Air Compressors	1	8.00	78	0.48
Trenching	Forklifts	1	8.00	89	0.20
Trenching	Generator Sets	1	8.00	84	0.74
Trenching	Graders	1	8.00	187	0.41
Trenching	Plate Compactors	1	8.00	8	0.43
Trenching	Pumps	1	8.00	84	0.74
Trenching	Scrapers	2	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment	Worker Trip	Vendor Trip	Hauling Trip	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor	Hauling
Trenching	10	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	56.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	279.00	60.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Trenching - 2022
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4912	35.5771	30.1394	0.0624		1.5369	1.5369		1.4476	1.4476		5,988.1881	5,988.1881	1.4906		6,025.4527
Total	3.4912	35.5771	30.1394	0.0624		1.5369	1.5369		1.4476	1.4476		5,988.1881	5,988.1881	1.4906		6,025.4527

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0784	0.0450	0.5978	1.9500e-003	0.2054	1.2900e-003	0.2067	0.0545	1.1900e-003	0.0557		194.2427	194.2427	4.2900e-003		194.3500
Total	0.0784	0.0450	0.5978	1.9500e-003	0.2054	1.2900e-003	0.2067	0.0545	1.1900e-003	0.0557		194.2427	194.2427	4.2900e-003		194.3500

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7199	3.1197	33.0471	0.0624		0.0960	0.0960		0.0960	0.0960	0.0000	5,988.1881	5,988.1881	1.4906		6,025.4526
Total	0.7199	3.1197	33.0471	0.0624		0.0960	0.0960		0.0960	0.0960	0.0000	5,988.1881	5,988.1881	1.4906		6,025.4526

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0784	0.0450	0.5978	1.9500e-003	0.2054	1.2900e-003	0.2067	0.0545	1.1900e-003	0.0557		194.2427	194.2427	4.2900e-003		194.3500
Total	0.0784	0.0450	0.5978	1.9500e-003	0.2054	1.2900e-003	0.2067	0.0545	1.1900e-003	0.0557		194.2427	194.2427	4.2900e-003		194.3500

3.3 Building Construction - 2024
Unmitigated Construction On-Site

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

Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1206	4.6523	0.9982	0.0158	0.4066	4.8700e-003	0.4115	0.1171	4.6600e-003	0.1217		1,674.4280	1,674.4280	0.0688		1,676.1481
Worker	0.7601	0.4060	5.6671	0.0201	2.2919	0.0138	2.3057	0.6079	0.0127	0.6206		2,002.0871	2,002.0871	0.0387		2,003.0534
Total	0.8807	5.0582	6.6653	0.0359	2.6985	0.0187	2.7172	0.7250	0.0174	0.7424		3,676.5151	3,676.5151	0.1075		3,679.2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1206	4.6523	0.9982	0.0158	0.4066	4.8700e-003	0.4115	0.1171	4.6600e-003	0.1217		1,674.4280	1,674.4280	0.0688		1,676.1481
Worker	0.7601	0.4060	5.6671	0.0201	2.2919	0.0138	2.3057	0.6079	0.0127	0.6206		2,002.0871	2,002.0871	0.0387		2,003.0534
Total	0.8807	5.0582	6.6653	0.0359	2.6985	0.0187	2.7172	0.7250	0.0174	0.7424		3,676.5151	3,676.5151	0.1075		3,679.2015

3.3 Building Construction - 2025
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1175	4.6155	0.9631	0.0157	0.4066	4.8100e-06	0.4114	0.1171	4.6000e-06	0.1217		1,663.302	1,663.3026	0.0679		1,664.998
Worker	0.7147	0.3684	5.2449	0.0193	2.2919	0.0136	2.3055	0.6079	0.0125	0.6204		1,920.2787	1,920.2787	0.0350		1,921.1542
Total	0.8321	4.9838	6.2080	0.0350	2.6985	0.0184	2.7169	0.7250	0.0171	0.7421		3,583.5812	3,583.5812	0.1029		3,586.1530

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	0.3278	2.2347	17.4603	0.0270		0.0408	0.0408		0.0408	0.0408	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1175	4.6155	0.9631	0.0157	0.4066	4.8100e-06	0.4114	0.1171	4.6000e-06	0.1217		1,663.302	1,663.3026	0.0679		1,664.998
Worker	0.7147	0.3684	5.2449	0.0193	2.2919	0.0136	2.3055	0.6079	0.0125	0.6204		1,920.278	1,920.2787	0.0350		1,921.154
Total	0.8321	4.9838	6.2080	0.0350	2.6985	0.0184	2.7169	0.7250	0.0171	0.7421		3,583.5812	3,583.5812	0.1029		3,586.1530

3.4 Paving - 2022
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.510
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104

Unmitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0470	0.0270	0.3587	1.1700e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		116.5456	116.5456	2.5800e-003		116.6100
Total	0.0470	0.0270	0.3587	1.1700e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		116.5456	116.5456	2.5800e-003		116.6100

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.660	2,207.6603	0.7140		2,225.510
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0470	0.0270	0.3587	1.1700e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		116.5456	116.5456	2.5800e-003		116.6100
Total	0.0470	0.0270	0.3587	1.1700e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		116.5456	116.5456	2.5800e-003		116.6100

3.5 Architectural Coating - 2024
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.0830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	19.2637	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1526	0.0815	1.1375	4.0300e-003	0.4600	2.7700e-003	0.4628	0.1220	2.5500e-003	0.1246		401.8526	401.8526	7.7600e-003		402.0466

Total	0.1526	0.0815	1.1375	4.0300e-003	0.4600	2.7700e-003	0.4628	0.1220	2.5500e-003	0.1246		401.8526	401.8526	7.7600e-003		402.0466
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.0830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0159		281.8443
Total	19.1127	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0159		281.8443

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1526	0.0815	1.1375	4.0300e-003	0.4600	2.7700e-003	0.4628	0.1220	2.5500e-003	0.1246		401.8526	401.8526	7.7600e-003		402.0466
Total	0.1526	0.0815	1.1375	4.0300e-003	0.4600	2.7700e-003	0.4628	0.1220	2.5500e-003	0.1246		401.8526	401.8526	7.7600e-003		402.0466

3.5 Architectural Coating - 2025
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.0830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	19.2538	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1434	0.0739	1.0527	3.8600e-003	0.4600	2.7300e-003	0.4628	0.1220	2.5100e-003	0.1245		385.4323	385.4323	7.0300e-003		385.6080
Total	0.1434	0.0739	1.0527	3.8600e-003	0.4600	2.7300e-003	0.4628	0.1220	2.5100e-003	0.1245		385.4323	385.4323	7.0300e-003		385.6080

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.0830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0154		281.8319
Total	19.1127	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0154		281.8319

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1434	0.0739	1.0527	3.8600e-003	0.4600	2.7300e-003	0.4628	0.1220	2.5100e-003	0.1245		385.4323	385.4323	7.0300e-003		385.6080
Total	0.1434	0.0739	1.0527	3.8600e-003	0.4600	2.7300e-003	0.4628	0.1220	2.5100e-003	0.1245		385.4323	385.4323	7.0300e-003		385.6080

lb_gram	0.00220462
MT_gram	1.00E-06
CH4 gwp	25
N2O gwp	298


Running (RUNEX, PMTWT, PMBW) grams per mile													Process (IDLEX, STREX, TOTEX, DIURN, HTSK, RUNLS, RESTL) grams per trip									
	ROG	TOG	CO	NOx	CO2	CH4	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SOX	N2O	ROG	TOG	CO	NOx	CO2	CH4	PM10	PM2.5	SOX	N2O
2021	0.04	0.05	0.42	3.06	1779.29	0.00	0.01	0.93	0.01	0.24	0.02	0.28	0.03	0.04	0.48	0.79	87.86	0.00	0.00	0.00	0.00	0.01
2022	0.04	0.05	0.42	3.07	1748.57	0.00	0.01	0.93	0.01	0.24	0.02	0.27	0.03	0.03	0.44	0.74	80.43	0.00	0.00	0.00	0.00	0.01
2023	0.03	0.03	0.40	2.98	1714.99	0.00	0.01	0.93	0.01	0.24	0.02	0.27	0.03	0.03	0.42	0.70	75.13	0.00	0.00	0.00	0.00	0.01
2024	0.03	0.03	0.41	3.02	1693.55	0.00	0.01	0.93	0.01	0.24	0.02	0.27	0.03	0.03	0.41	0.68	72.32	0.00	0.00	0.00	0.00	0.01
2025	0.03	0.03	0.41	3.06	1672.88	0.00	0.01	0.93	0.01	0.24	0.02	0.26	0.03	0.03	0.40	0.67	70.04	0.00	0.00	0.00	0.00	0.01

Phase	Vehicle	Days	/ehicles/Yea	Miles/Vehicle	lbs/day										Metric Tons/Year			
					ROG	NOx	CO	SO2	PM10 Dust	PM10 Ex	PM10 Total	PM2.5 Dust	PM2.5 Ex	PM2.5 Total	CO2	CH4	N2O	CO2e
Phase 1 - Demolition (2021)	Haul Trucks	107	259	20	0.00463	0.33050	0.32882	0.00180	0.09875	0.00151	0.10026	0.02546	0.00144	0.02691	9.2	0.0	0.0	9.7
Phase 1 - Grading (2021)	Haul Trucks	108	10,004	20	0.17722	12.64761	1.82411	0.06883	3.77877	0.05777	3.83654	0.97438	0.05527	1.02965	356.9	0.0	0.1	373.6
Phase 1 - Building Construction (2022)	Vendor Trucks	210	54	7.3	0.00019	0.01325	0.00202	0.00007	0.00386	0.00006	0.00392	0.00100	0.00006	0.00105	0.7	0.0	0.0	0.7
Phase 1 - Building Construction (2023)	Vendor Trucks	250	65	7.3	0.00014	0.01283	7.15914	0.00007	0.00386	0.00005	0.00392	0.00100	0.00005	0.00105	0.8	0.0	0.0	0.9
Phase 1 - Building Construction (2024)	Vendor Trucks	180	47	7.3	0.00014	0.01298	0.00194	0.00007	0.00386	0.00006	0.00392	0.00100	0.00005	0.00105	0.6	0.0	0.0	0.6
Phase 2 - Building Construction (2024)	Vendor Trucks	93	16	7.3	0.00009	0.00876	0.00131	0.00005	0.00260	0.00004	0.00264	0.00067	0.00004	0.00071	0.2	0.0	0.0	0.2
Phase 2 - Building Construction (2025)	Vendor Trucks	250	44	7.3	0.00009	0.00886	0.00131	0.00004	0.00260	0.00004	0.00264	0.00067	0.00004	0.00071	0.5	0.0	0.0	0.6

Daily Emission Estimates for ->															
Project Phases (Pounds)		ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing		0.63	7.43	6.35	0.87	0.37	0.50	0.43	0.33	0.10	0.01	1,218.14	0.30	0.04	1,236.95
Grading/Excavation		0.91	9.54	9.12	1.02	0.52	0.50	0.52	0.41	0.10	0.02	2,410.45	0.32	0.17	2,468.14
Drainage/Utilities/Sub-Grade		0.70	8.42	6.44	0.91	0.41	0.50	0.45	0.35	0.10	0.02	1,490.71	0.30	0.05	1,511.99
Paving		0.67	7.98	6.40	0.40	0.40	0.00	0.34	0.34	0.00	0.01	1,369.57	0.30	0.04	1,389.75
Maximum (pounds/day)		0.91	9.54	9.12	1.02	0.52	0.50	0.52	0.41	0.10	0.02	2,410.45	0.32	0.17	2,468.14
Total (tons/construction project)		0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.97	0.00	0.00	10.17
Notes: Project Start Year -> 2021															
Project Length (months) -> 1															
Total Project Area (acres) -> 0															
Maximum Area Disturbed/Day (acres) -> 0															
Water Truck Used? -> Yes															
		Total Material Imported/Exported Volume (yd³/day)		Daily VMT (miles/day)											
Phase		Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck								
Grubbing/Land Clearing		0	0	0	0	200	0								
Grading/Excavation		60	60	90	90	800	0								
Drainage/Utilities/Sub-Grade		0	0	0	0	560	0								
Paving		0	0	0	0	400	0								
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.															
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.															
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.															
Total Emission Estimates by Phase for ->															
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)		ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.62
Grading/Excavation		0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.00	0.00	4.93
Drainage/Utilities/Sub-Grade		0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.87	0.00	0.00	2.64
Paving		0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.00	0.00	1.04
Maximum (tons/phase)		0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.00	0.00	4.93
Total (tons/construction project)		0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.97	0.00	0.00	9.22
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.															
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.															
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.															
The CO2e emissions are reported as metric tons per phase.															

Road Construction Emissions Model
Data Entry Worksheet
Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

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Input Type

Project Name		
Construction Start Year	2021	Enter a Year between 2014 and 2040 (inclusive)
Project Type	2	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	0.50	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 <small>(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)</small>	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.02	miles
Total Project Area	0.05	acres
Maximum Area Disturbed/Day	0.05	acres
Water Trucks Used?	2	1. Yes 2. No

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd ³) (assume 20 if unknown)	Import Volume (yd ³ /day)	Export Volume (yd ³ /day)
Soil	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		60.00
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		
Asphalt	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		60.00
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer. Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard
Off-road Equipment Emissions Mitigation	No Mitigation	

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/?layers=geologicmaps.aspx#thegonseries

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.05	9/13/2021	1/1/2021
Grading/Excavation		0.20	9/15/2021	1/2/2021
Drainage/Utilities/Sub-Grade		0.18	9/22/2021	1/10/2021
Paving		0.08	9/28/2021	1/16/2021
Totals (Months)		1		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated				
User Input	Miles/Round Trip	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT				
Miles/round trip: Grubbing/Land Clearing		30.00			0					0.00
Miles/round trip: Grading/Excavation		30.00			3					90.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00			0					0.00
Miles/round trip: Paving		30.00			0					0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Grading/Excavation (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Drainage/Utilities/Sub-Grade (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Paving (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.08	0.23	1.31	0.04	0.03	0.00	369.01	0.00	0.06	386.39
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.85
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.85

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
User Input											
Miles/round trip: Grubbing/Land Clearing			30.00		0						0.00
Miles/round trip: Grading/Excavation			30.00		3						90.00
Miles/round trip: Drainage/Utilities/Sub-Grade			30.00		0						0.00
Miles/round trip: Paving			30.00		0						0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Grading/Excavation (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Drainage/Utilities/Sub-Grade (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Paving (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.08	0.23	1.31	0.04	0.03	0.00	369.01	0.00	0.06	386.39
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.85
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.85

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions										
User Input	User Override of Worker Commute Default Values		Default Values		Calculated					
					Daily Trips		Daily VMT			
Miles/ one-way trip			20							
One-way trips/day			2							
No. of employees: Grubbing/Land Clearing			5		10		200.00			
No. of employees: Grading/Excavation			20		40		800.00			
No. of employees: Drainage/Utilities/Sub-Grade			14		28		560.00			
No. of employees: Paving			10		20		400.00			
Emission Rates										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grading/Excavation (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Paving (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grubbing/Land Clearing (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Grading/Excavation (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Draining/Utilities/Sub-Grade (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Paving (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Emissions										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.03	0.55	0.05	0.02	0.01	0.00	151.43	0.00	0.00	152.80
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.08
Pounds per day - Grading/Excavation	0.14	2.20	0.20	0.08	0.03	0.01	605.72	0.02	0.02	611.21
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	1.33	0.00	0.00	1.34
Pounds per day - Drainage/Utilities/Sub-Grade	0.10	1.54	0.14	0.06	0.02	0.00	424.00	0.01	0.01	427.85
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.00	0.00	0.82
Pounds per day - Paving	0.07	1.10	0.10	0.04	0.02	0.00	302.86	0.01	0.01	305.60
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.25
Total tons per construction project	0.00	0.01	0.00	0.00	0.00	0.00	2.48	0.00	0.00	2.50

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions										
User Input	User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Round Trips/Vehicle/Day		Default Values Round Trips/Vehicle/Day		Calculated Trips/day	
									Miles/Round Trip	
Grubbing/Land Clearing - Exhaust			0				5		0	0.00
Grading/Excavation - Exhaust			0				5		0	0.00
Drainage/Utilities/Subgrade			0				5		0	0.00
Paving			0				5		0	0.00
Emission Rates										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Grading/Excavation (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Draining/Utilities/Sub-Grade (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Paving (grams/mile)	0.43	1.14	6.49	0.21	0.15	0.02	1,859.78	0.02	0.29	1,947.39
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust						
	User Override of Max Acreage Disturbed/Day		Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day
						PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing			0.05	0.99	0.00	0.21
Fugitive Dust - Grading/Excavation			0.05	0.99	0.00	0.21
Fugitive Dust - Drainage/Utilities/Subgrade			0.05	0.99	0.00	0.21

Off-Road Equipment Emissions															
Grubbing/Land Clearing	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Equipment Tier	Type											
Override of Default Number of Vehicles		Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
					Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		1			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		2			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		1			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00					Model Default Tier	Tractors/Loaders/Backhoes	0.34	6.78	0.34	0.31	902.70	0.29	0.01	912.42	0.00
					Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment															
# If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab															
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00						

Grading/Excavation	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of												
Override of Default Number of Vehicles		Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
					Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	4				Model Default Tier	Tractors/Loaders/Backhoes	0.56	6.78	5.69	0.34	0.31	902.70	0.29	0.01	912.42
					Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment															
If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab															
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation				pounds per day	0.56	6.78	5.69	0.34	0.31	0.01	902.70	0.29	0.01	912.42	
Grading/Excavation				tons per phase	0.00	0.01	0.01	0.00	0.00	0.00	1.99	0.00	0.00	2.01	

Drainage/Utilities/Subgrade	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
Program-estimate				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	1		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Pile Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	3		Model Default Tier	Tractors/Loaders/Backhoes	0.56	6.78	5.69	0.34	0.31	0.01	902.70	0.29	0.01	912.42
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment														
If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab														
Number of Vehicles			Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
					pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade			pounds per day	0.56	6.78	5.69	0.34	0.31	0.01	902.70	0.29	0.01	912.42
	Drainage/Utilities/Sub-Grade			tons per phase	0.00	0.01	0.01	0.00	0.00	0.00	1.74	0.00	0.00	1.76

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles		Override of												
	Default		Default												
Override of Default Number of Vehicles		Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
					Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		1			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		1			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00					Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		1			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00		3			Model Default Tier	Tractors/Loaders/Backhoes	0.56	6.78	5.69	0.34	0.31	0.01	902.70	0.29	912.42
					Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment															
If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab															
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.56	6.78	5.69	0.34	0.31	0.01	902.70	0.29	0.01	912.42	
	Paving			tons per phase	0.00	0.01	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.75	
Total Emissions all Phases (tons per construction period) =>					0.00	0.04	0.03	0.00	0.00	0.00	4.96	0.00	0.00	5.02	

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8


END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for ->				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.32	7.61	0.93	0.55	0.06	0.50	0.14	0.04	0.10	0.01	1,211.04	0.30	0.04	1,229.48
Grading/Excavation	0.44	9.43	2.34	0.66	0.16	0.50	0.19	0.08	0.10	0.02	2,371.41	0.31	0.16	2,427.06
Drainage/Utilities/Sub-Grade	0.39	8.61	1.02	0.59	0.10	0.50	0.16	0.05	0.10	0.01	1,483.61	0.30	0.04	1,504.52
Paving	0.36	8.16	0.98	0.08	0.08	0.00	0.05	0.05	0.00	0.01	1,362.47	0.30	0.04	1,382.28
Maximum (pounds/day)	0.44	9.43	2.34	0.66	0.16	0.50	0.19	0.08	0.10	0.02	2,371.41	0.31	0.16	2,427.06
Total (tons/construction project)	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.86	0.00	0.00	10.05
Notes: Project Start Year -> 2021														
Project Length (months) -> 1														
Total Project Area (acres) -> 0														
Maximum Area Disturbed/Day (acres) -> 0														
Water Truck Used? -> Yes														
Total Material Imported/Exported Volume (yd³/day)														
Daily VMT (miles/day)														
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck								
Grubbing/Land Clearing	0	0	0	0	200	0								
Grading/Excavation	60	60	90	90	800	0								
Drainage/Utilities/Sub-Grade	0	0	0	0	560	0								
Paving	0	0	0	0	400	0								
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.														
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.														
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.														
Total Emission Estimates by Phase for ->														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.61
Grading/Excavation	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.22	0.00	0.00	4.84
Drainage/Utilities/Sub-Grade	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	0.00	0.00	2.63
Paving	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.00	0.00	1.03
Maximum (tons/phase)	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.22	0.00	0.00	4.84
Total (tons/construction project)	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.86	0.00	0.00	9.12
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.														
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.														
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.														
The CO2e emissions are reported as metric tons per phase.														

Road Construction Emissions Model
Data Entry Worksheet
Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

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Input Type

Project Name		
Construction Start Year	2021	Enter a Year between 2014 and 2040 (inclusive)
Project Type	2	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	0.50	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 <small>(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)</small>	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.02	miles
Total Project Area	0.05	acres
Maximum Area Disturbed/Day	0.05	acres
Water Trucks Used?	2	1. Yes 2. No

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd ³) (assume 20 if unknown)	Import Volume (yd ³ /day)	Export Volume (yd ³ /day)
Soil	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		60.00
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		
Asphalt	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		60.00
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		

Mitigation Options

On-road Fleet Emissions Mitigation	2010 and Newer On-road Vehicles Fleet	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer.
Off-road Equipment Emissions Mitigation	Tier 4 Equipment	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation).
Will all off-road equipment be tier 4?	All Tier 4 Equipment	Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/?layers=geodemaps.aspx#geonallseries

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.05	9/13/2021	1/1/2021
Grading/Excavation		0.20	9/15/2021	1/2/2021
Drainage/Utilities/Sub-Grade		0.18	9/22/2021	1/10/2021
Paving		0.08	9/28/2021	1/16/2021
Totals (Months)		1		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated					
User Input	Miles/Round Trip	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT					
Miles/round trip: Grubbing/Land Clearing		30.00			0					0.00	
Miles/round trip: Grading/Excavation		30.00			3					90.00	
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00			0					0.00	
Miles/round trip: Paving		30.00			0					0.00	
2010+ Model Year Mitigation Option Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69	
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69	
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69	
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69	
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.01	0.08	0.63	0.02	0.01	0.00	353.04	0.00	0.06	369.59	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.81	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.81	

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT				
User Input										
Miles/round trip: Grubbing/Land Clearing			30.00		0					0.00
Miles/round trip: Grading/Excavation			30.00		3					90.00
Miles/round trip: Drainage/Utilities/Sub-Grade			30.00		0					0.00
Miles/round trip: Paving			30.00		0					0.00

2010+ Model Year Mitigation Option Emission Rates											
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69	
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69	
Drainage/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69	
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69	
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Drainage/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.01	0.08	0.63	0.02	0.01	0.00	353.04	0.00	0.06	369.59	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.81	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.81	

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions			User Override of Worker Commute Default Values							
User Input	Default Values									
Miles/ one-way trip	20				Calculated		Calculated			
One-way trips/day	2				Daily Trips		Daily VMT			
No. of employees: Grubbing/Land Clearing	5				10		200.00			
No. of employees: Grading/Excavation	20				40		800.00			
No. of employees: Drainage/Utilities/Sub-Grade	14				28		560.00			
No. of employees: Paving	10				20		400.00			
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grading/Excavation (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Paving (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Grubbing/Land Clearing (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Grading/Excavation (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Draining/Utilities/Sub-Grade (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Paving (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.03	0.55	0.05	0.02	0.01	0.00	151.43	0.00	0.00	152.80
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.08
Pounds per day - Grading/Excavation	0.14	2.20	0.20	0.08	0.03	0.01	605.72	0.02	0.02	611.21
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	1.33	0.00	0.00	1.34
Pounds per day - Drainage/Utilities/Sub-Grade	0.10	1.54	0.14	0.06	0.02	0.00	424.00	0.01	0.01	427.85
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.00	0.00	0.82
Pounds per day - Paving	0.07	1.10	0.10	0.04	0.02	0.00	302.86	0.01	0.01	305.60
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.25
Total tons per construction project	0.00	0.01	0.00	0.00	0.00	0.00	2.48	0.00	0.00	2.50

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions										
User Input	User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Round Trips/Vehicle/Day		Default Values Round Trips/Vehicle/Day		Calculated Trips/day	
									User Override of Miles/Round Trip	Default Values Miles/Round Trip
Grubbing/Land Clearing - Exhaust			0				5		0	8.00
Grading/Excavation - Exhaust			0				5		0	8.00
Drainage/Utilities/Subgrade			0				5		0	8.00
Paving			0				5		0	8.00
2010+ Model Year Mitigation Option Emission Rates										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Paving (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust		User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing			0.05	0.99	0.00	0.21	0.00
Fugitive Dust - Grading/Excavation			0.05	0.99	0.00	0.21	0.00
Fugitive Dust - Drainage/Utilities/Subgrade			0.05	0.99	0.00	0.21	0.00

Off-Road Equipment Emissions														
Grubbing/Land Clearing		Default Number of Vehicles	Mitigation Option Override of	Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
				Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		1		Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		2		Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		1		Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00				Tier 4	Tractors/Loaders/Backhoes	0.28	7.03	0.57	0.03	0.03	0.01	902.70	0.29	912.42
				Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment		If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab												
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing				pounds per day	0.28	7.03	0.57	0.03	0.03	0.01	902.70	0.29	0.01	912.42
Grubbing/Land Clearing				tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.50

Data Entry Worksheet 5

Default Mitigation Option				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Drainage/Utilities/Subgrade	Default Number of Vehicles	Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00	1		Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	3			Tier 4	Tractors/Loaders/Backhoes	0.28	7.03	0.57	0.03	0.03	902.70	0.29	912.42
				Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment				If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab									
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	CO2e
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.28	7.03	0.57	0.03	0.03	0.01	902.70	0.29	912.42
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.01	0.00	0.00	0.00	0.00	1.74	0.00	1.75

Paving	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of												
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
				Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	1		Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	1		Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2		Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		1		Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.00	3		Tier 4	Tractors/Loaders/Backhoes	0.28	7.03	0.57	0.03	0.03	0.01	902.70	0.29	0.01	912.42
				Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment															
If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab															
	Number of Vehicles			Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving			pounds per day	0.28	7.03	0.57	0.03	0.03	0.01	902.70	0.29	0.01	912.42
		Paving			tons per phase	0.00	0.01	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.75
Total Emissions all Phases (tons per construction period) ==>						0.00	0.04	0.00	0.00	0.00	0.00	4.96	0.00	0.00	5.02

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Operational Calculations

Estimated Criteria Pollutant Emissions During Operation

	ROG	NOx	CO	SO2	PM10	PM2.5
Phase 1						
Area	35	5	58	0	1	1
Energy	0	2	1	0	0	0
Mobile	5	33	112	1	49	13
Stationary	0	1	1	0	0	0
Total	41	41	172	1	50	14
Project						
Area	50	13	85	0	1	1
Energy	0	2	1	0	0	0
Mobile	7	44	139	1	69	19
Stationary	0	1	1	0	0	0
Total	58	61	226	1	71	21

Estimated GHG Emissions During Operation

	CO2	CH4	N2O	CO2e
Project				
Area	89	0	0	89
Energy	838	0	0	846
Mobile	11,219	0	1	11,410
Stationary	1	0	0	1
Waste	97	6	0	239
Water	36.772	1.702	0.041	91.431
Sequestration				-472
Total	12,280	8	1	12,205

Estimated Unmitigated Criteria Pollutant Emissions Construction + Operation (Phase 1)

	ROG	NOx	CO	PM10	PM2.5
Construction	66	30	41	10	3
Operation	41	41	172	50	14
Total	108	71	213	60	17

Estimated Mitigated Criteria Pollutant Emissions During Operation

	ROG	NOx	CO	SO2	PM10	PM2.5
Phase 1						
Area	29	5	58	0	1	1
Energy	0	2	1	0	0	0
Mobile	5	33	112	1	49	13
Stationary	0	1	1	0	0	0
Total	35	41	172	1	50	14
Project						
Area	41	13	85	0	1	1
Energy	0	2	1	0	0	0
Mobile	7	44	139	1	69	19
Stationary	0	1	1	0	0	0
Total	48	61	226	1	71	21

Estimated Mitigated Criteria Pollutant Emissions Construction + Operation (Phase 1)

	ROG	NOx	CO	PM10	PM2.5
Construction	7	4	46	7	2
Operation	35	41	172	50	14
Total	42	45	217	57	16

Energy (Including Water and Battery Generators)

	Annual kWh	Annual MBTU	Annual Therms
Existing	0	0	0
Project	9,213,255	31,437	314,369

Natural Gas

	Annual kBTU	Annual MBTU	Annual Therms
Existing	0	0	0
Project	8,557,672	8,558	85,577

Water

	Annual Mgal Indoor	Annual Mgal Outdoor	Annual Mgal Total	Annual kwh
Existing	0	0	0	0
Project	52	41	93	1,211,788

Fuel

	Gasoline (gal/year)	Diesel (gal/year)
Existing	0	0
Project	951,296	310,029

Source: CalEEMod, EMFAC. See AQ Appendix

Conversions

kwh per Mgal	13,021	CalEEMod
MBTU per therm	1.00E+01	Standard
BTU per kwh	3412.14	Standard

Station East Operation - Alameda County, Annual

Station East Operation Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	1,124.00	Space	5.12	449,600.00	0
Enclosed Parking Structure	454.00	Space	1.41	181,600.00	0
Parking Lot	214.00	Space	0.98	85,600.00	0
Apartments Mid Rise	683.00	Dwelling Unit	14.57	1,278,379.00	1953
Apartments Mid Rise	281.00	Dwelling Unit	4.07	525,951.00	804
Regional Shopping Center	30.77	1000sqft	0.35	30,770.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	105	CH4 Intensity	0.027	N2O Intensity	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Efs adjusted for 2025

Land Use - lot acreage scaled by sf; land use amounts per applicant

Construction Phase - operational analysis only

Off-road Equipment - operational analysis only

Grading - operational analysis only

Demolition - operational analysis only

Trips and VMT - operational analysis only

Architectural Coating - operational analysis only

Vehicle Trips - mobile sources evaluated separately

Woodstoves - assumed all default fireplaces to be gas; assumed no woodstoves

Energy Use -

Stationary Sources - Emergency Generators and Fire Pumps - provided by applicant

Land Use Change -

Area Mitigation - assumed extremely compliant VOC paint and green consumer products

Water Mitigation - assumed compliance with CalGreen

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	15,385.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	46,155.00	0.00
tblArchitecturalCoating	ConstArea_Parking	43,008.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,217,923.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	3,653,768.00	0.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExterior	150	10
tblAreaMitigation	UseLowVOCPaintNonresidentialInterior	100	10
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	150	10
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	10
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	10
tblConstructionPhase	NumDays	35.00	0.00
tblConstructionPhase	NumDays	440.00	0.00
tblConstructionPhase	NumDays	30.00	0.00
tblConstructionPhase	NumDays	45.00	0.00
tblConstructionPhase	NumDays	35.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	PhaseEndDate	9/30/2022	8/12/2022
tblConstructionPhase	PhaseEndDate	6/24/2022	10/16/2020
tblConstructionPhase	PhaseEndDate	7/17/2020	6/7/2020
tblConstructionPhase	PhaseEndDate	10/16/2020	8/14/2020
tblConstructionPhase	PhaseEndDate	8/12/2022	6/24/2022
tblConstructionPhase	PhaseEndDate	8/14/2020	7/17/2020
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	144.60	308.48
tblFireplaces	NumberWood	163.88	0.00
tblLandUse	LandUseSquareFeet	683,000.00	1,278,379.00
tblLandUse	LandUseSquareFeet	281,000.00	525,951.00
tblLandUse	LotAcreage	10.12	5.12
tblLandUse	LotAcreage	4.09	1.41
tblLandUse	LotAcreage	1.93	0.98
tblLandUse	LotAcreage	17.97	14.57
tblLandUse	LotAcreage	7.39	4.07
tblLandUse	LotAcreage	0.71	0.35
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.027
tblProjectCharacteristics	CO2IntensityFactor	641.35	105
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	805.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.25
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	3.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	226.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,005.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	201.00	0.00
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	6.65	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblWoodstoves	NumberCatalytic	19.28	0.00
tblWoodstoves	NumberNoncatalytic	19.28	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.2 Overall Operational Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.7385	0.149	7.196	8.00E-04		0.0451	0.0451		0.0451	0.0451	0	88.7456	88.7456	0.0128	1.41E-03	89.4853
Energy	0.0461	0.3947	0.1709	2.52E-03		0.0319	0.0319		0.0319	0.0319	0	837.7512	837.7512	0.1068	0.0193	846.1594
Mobile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stationary	1.98E-03	8.86E-03	5.05E-03	1.00E-05		2.90E-04	2.90E-04		2.90E-04	2.90E-04	0	0.9196	0.9196	1.30E-04	0	0.9229
Waste						0	0		0	0	96.573	0	96.573	5.7073	0	239.2554
Water						0	0		0	0	20.6493	23.6072	44.2566	2.127	0.0508	112.5548
Total	8.7866	0.5526	7.3719	3.33E-03	0	0.0773	0.0773	0	0.0773	0.0773	117.2223	951.0237	1,068.25	7.9539	0.0714	1,288.38

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	7.0168	0.1490	7.1960	8.0000e-004		0.0451	0.0451		0.0451	0.0451	0.0000	88.7456	88.7456	0.0128	1.4100e-003	89.4853
Energy	0.0461	0.3947	0.1709	2.5200e-003		0.0319	0.0319		0.0319	0.0319	0.0000	837.7512	837.7512	0.1068	0.0193	846.1594
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Stationary	1.9800e-003	8.8600e-003	5.0500e-003	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.9196	0.9196	1.3000e-004	0.0000	0.9229
Waste						0.0000	0.0000		0.0000	0.0000	96.5730	0.0000	96.5730	5.7073	0.0000	239.2554
Water						0.0000	0.0000		0.0000	0.0000	16.5195	20.2525	36.7719	1.7019	0.0406	91.4310
Total	7.0649	0.5526	7.3719	3.3300e-003	0.0000	0.0773	0.0773	0.0000	0.0773	0.0773	113.0924	947.6689	1,060.7613	7.5289	0.0613	1,267.2540

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-CO2	Total	CH4	N2O	CO2e
Percent	19.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.52	0.35	0.70	5.34	14.16	1.64

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	381.0810	381.0810	0.0980	0.0109	386.7755
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	381.0810	381.0810	0.0980	0.0109	386.7755
NaturalGas Mitigated	0.0461	0.3947	0.1709	2.5200e-003		0.0319	0.0319		0.0319	0.0319	0.0000	456.6702	456.6702	8.7500e-003	8.3700e-003	459.3840
NaturalGas Unmitigated	0.0461	0.3947	0.1709	2.5200e-003		0.0319	0.0319		0.0319	0.0319	0.0000	456.6702	456.6702	8.7500e-003	8.3700e-003	459.3840

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					
Apartments Mid Rise	2.45E+06	0.0132	0.113	0.0481	7.20E-04		9.14E-03	9.14E-03		9.14E-03	9.14E-03	0	130.9148	130.9148	2.51E-03	2.40E-03	131.6928
Apartments Mid Rise	5.96E+06	0.0322	0.2748	0.1169	1.75E-03		0.0222	0.0222		0.0222	0.0222	0	318.2022	318.2022	6.10E-03	5.83E-03	320.0931
Enclosed Parking Structure	0	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	0
Regional Shopping Center	141542	7.60E-04	6.94E-03	5.83E-03	4.00E-05		5.30E-04	5.30E-04		5.30E-04	5.30E-04	0	7.5532	7.5532	1.40E-04	1.40E-04	7.5981
Total		0.0461	0.3947	0.1709	2.5100e-003		0.0319	0.0319		0.0319	0.0319	0.0000	456.6702	456.6702	8.7500e-003	8.3700e-003	459.3840

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					
Apartments Mid Rise	2.45325e+006	0.0132	0.1130	0.0481	7.2000e-004		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003	0.0000	130.9148	130.9148	2.5100e-003	2.4000e-003	131.6928
Apartments Mid Rise	5.96288e+006	0.0322	0.2748	0.1169	1.7500e-003		0.0222	0.0222		0.0222	0.0222	0.0000	318.2022	318.2022	6.1000e-003	5.8300e-003	320.0931
Enclosed Parking Structure	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
Regional Shopping Center	141542	7.6000e-004	6.9400e-003	5.8300e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5532	7.5532	1.4000e-004	1.4000e-004	7.5981
Total		0.0461	0.3947	0.1709	2.5100e-003		0.0319	0.0319		0.0319	0.0319	0.0000	456.6702	456.6702	8.7500e-003	8.3700e-003	459.3840

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.19E+06	56.5039	0.0145	1.6100e-003	57.3483

Apartments Mid Rise	2.88E+06	137.3387	0.0353	3.9200e-003	139.3909
Enclosed Parking Structure	1.03E+06	49.0404	0.0126	1.4000e-003	49.7732
Enclosed Parking Structure	2.55E+06	121.4128	0.0312	3.4700e-003	123.2270
Parking Lot	29960	1.4269	3.7000e-004	4.0000e-005	1.4482
Regional Shopping Center	322470	15.3583	3.9500e-003	4.4000e-004	15.5878
Total		381.0810	0.0980	0.0109	386.7755

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.18638e+006	56.5039	0.0145	1.6100e-003	57.3483
Apartments Mid Rise	2.88362e+006	137.3387	0.0353	3.9200e-003	139.3909
Enclosed Parking Structure	1.02967e+006	49.0404	0.0126	1.4000e-003	49.7732
Enclosed Parking Structure	2.54923e+006	121.4128	0.0312	3.4700e-003	123.2270
Parking Lot	29960	1.4269	3.7000e-004	4.0000e-005	1.4482
Regional Shopping Center	322470	15.3583	3.9500e-003	4.4000e-004	15.5878
Total		381.0810	0.0980	0.0109	386.7755

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 Low VOC Cleaning Supplies

	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	7.0168	0.1490	7.1960	8.0000e-004		0.0451	0.0451		0.0451	0.0451	0.0000	88.7456	88.7456	0.0128	1.4100e-003	89.4853
Unmitigated	8.7385	0.1490	7.1960	8.0000e-004		0.0451	0.0451		0.0451	0.0451	0.0000	88.7456	88.7456	0.0128	1.4100e-003	89.4853

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	1.3011					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.2133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.7800e-003	0.0665	0.0283	4.2000e-004		5.3800e-003	5.3800e-003		5.3800e-003	5.3800e-003	0.0000	77.0209	77.0209	1.4800e-003	1.4100e-003	77.4786
Landscaping	0.2162	0.0825	7.1677	3.8000e-004		0.0397	0.0397		0.0397	0.0397	0.0000	11.7247	11.7247	0.0113	0.0000	12.0068
Total	8.7385	0.1490	7.1960	8.0000e-004		0.0451	0.0451		0.0451	0.0451	0.0000	88.7456	88.7456	0.0128	1.4100e-003	89.4853

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	0.1153					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.6775					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.7800e-003	0.0665	0.0283	4.2000e-004		5.3800e-003	5.3800e-003		5.3800e-003	5.3800e-003	0.0000	77.0209	77.0209	1.4800e-003	1.4100e-003	77.4786
Landscaping	0.2162	0.0825	7.1677	3.8000e-004		0.0397	0.0397		0.0397	0.0397	0.0000	11.7247	11.7247	0.0113	0.0000	12.0068
Total	7.0168	0.1490	7.1960	8.0000e-004		0.0451	0.0451		0.0451	0.0451	0.0000	88.7456	88.7456	0.0128	1.4100e-003	89.4853

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet
Install Low Flow Kitchen Faucet
Install Low Flow Toilet
Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	36.7719	1.7019	0.0406	91.4310
Unmitigated	44.2566	2.1270	0.0508	112.5548

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	62.8085 / 39.5967	42.7132	2.0525	0.0490	108.6200
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.27921 / 1.39694	1.5433	0.0745	1.7800e-003	3.9349
Total		44.2566	2.1270	0.0508	112.5548

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
--	--------------------	-----------	-----	-----	------

Land Use	Mgal	MT/yr			
Apartments Mid Rise	50.2468 / 39.5967	35.4907	1.6423	0.0392	88.2358
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.82337 / 1.39694	1.2812	0.0596	1.4200e-003	3.1952
Total		36.7719	1.7019	0.0406	91.4310

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	96.5730	5.7073	0.0000	239.2554
Unmitigated	96.5730	5.7073	0.0000	239.2554

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	443.44	90.0143	5.3197	0.0000	223.0067
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	32.31	6.5586	0.3876	0.0000	16.2488
Total		96.5730	5.7073	0.0000	239.2554

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	443.44	90.0143	5.3197	0.0000	223.0067
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	32.31	6.5586	0.3876	0.0000	16.2488
Total		96.5730	5.7073	0.0000	239.2554

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel	1.9800e-003	8.8600e-003	5.0500e-003	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.9196	0.9196	1.3000e-004	0.0000	0.9229
Total	1.9800e-003	8.8600e-003	5.0500e-003	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.9196	0.9196	1.3000e-004	0.0000	0.9229

Station East Operation - Alameda County, Summer

Station East Operation
Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	1,124.00	Space	5.12	449,600.00	0
Enclosed Parking Structure	454.00	Space	1.41	181,600.00	0
Parking Lot	214.00	Space	0.98	85,600.00	0
Apartments Mid Rise	683.00	Dwelling Unit	14.57	1,278,379.00	1953
Apartments Mid Rise	281.00	Dwelling Unit	4.07	525,951.00	804
Regional Shopping Center	30.77	1000sqft	0.35	30,770.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity	105	CH4 Intensity	0.027	N2O Intensity	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Efs adjusted for 2025
 Land Use - lot acreage scaled by sf; land use amounts per applicant
 Construction Phase - operational analysis only
 Off-road Equipment - operational analysis only
 Grading - operational analysis only
 Demolition - operational analysis only
 Trips and VMT - operational analysis only
 Architectural Coating - operational analysis only
 Vehicle Trips - mobile sources evaluated separately
 Woodstoves - assumed all default fireplaces to be gas; assumed no woodstoves
 Energy Use -

Stationary Sources - Emergency Generators and Fire Pumps - provided by applicant
Land Use Change -
Area Mitigation - assumed extremely compliant VOC paint and green consumer products
Water Mitigation - assumed compliance with CalGreen

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	15,385.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	46,155.00	0.00
tblArchitecturalCoating	ConstArea_Parking	43,008.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,217,923.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	3,653,768.00	0.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExterior	150	10
tblAreaMitigation	UseLowVOCPaintNonresidentialInterior	100	10
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	150	10
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	10
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	10
tblConstructionPhase	NumDays	35.00	0.00
tblConstructionPhase	NumDays	440.00	0.00
tblConstructionPhase	NumDays	30.00	0.00
tblConstructionPhase	NumDays	45.00	0.00
tblConstructionPhase	NumDays	35.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	PhaseEndDate	9/30/2022	8/12/2022
tblConstructionPhase	PhaseEndDate	6/24/2022	10/16/2020
tblConstructionPhase	PhaseEndDate	7/17/2020	6/7/2020
tblConstructionPhase	PhaseEndDate	10/16/2020	8/14/2020
tblConstructionPhase	PhaseEndDate	8/12/2022	6/24/2022
tblConstructionPhase	PhaseEndDate	8/14/2020	7/17/2020
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	144.60	308.48
tblFireplaces	NumberWood	163.88	0.00
tblLandUse	LandUseSquareFeet	683,000.00	1,278,379.00
tblLandUse	LandUseSquareFeet	281,000.00	525,951.00
tblLandUse	LotAcreage	10.12	5.12
tblLandUse	LotAcreage	4.09	1.41
tblLandUse	LotAcreage	1.93	0.98
tblLandUse	LotAcreage	17.97	14.57
tblLandUse	LotAcreage	7.39	4.07
tblLandUse	LotAcreage	0.71	0.35
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.027
tblProjectCharacteristics	CO2IntensityFactor	641.35	105
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	805.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.25
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	3.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	226.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,005.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	201.00	0.00
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	6.65	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblWoodstoves	NumberCatalytic	19.28	0.00
tblWoodstoves	NumberNoncatalytic	19.28	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.2 Overall Operational Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	50.4545	12.8569	84.7223	0.0804		1.4069	1.4069		1.4069	1.4069	0	15,386.14	15,386.14	0.4303	0.2795	15,480.18
Energy	0.2529	2.163	0.9362	0.0138		0.1747	0.1747		0.1747	0.1747		2,758.32	2,758.32	0.0529	0.0506	2,774.71
Mobile	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Stationary	0.3302	1.4769	0.8421	1.59E-03		0.0486	0.0486		0.0486	0.0486		168.9522	168.9522	0.0237		169.5444
Total	51.0376	16.4968	86.5006	0.0958	0	1.6302	1.6302	0	1.6302	1.6302	0	18,313.41	18,313.41	0.5069	0.33	18,424.43

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
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Category	lb/day										lb/day					
Area	41.0207	12.8569	84.7223	0.0804		1.4069	1.4069		1.4069	1.4069	0	15,386.14	15,386.14	0.4303	0.2795	15,480.18
Energy	0.2529	2.163	0.9362	0.0138		0.1747	0.1747		0.1747	0.1747		2,758.32	2,758.32	0.0529	0.0506	2,774.71
Mobile	0	0	0	0	0	0	0	0	0	0		0	0	0		0
Stationary	0.3302	1.4769	0.8421	1.59E-03		0.0486	0.0486		0.0486	0.0486		168.9522	168.9522	0.0237		169.5444
Total	41.6038	16.4968	86.5006	0.0958	0	1.6302	1.6302	0	1.6302	1.6302	0	18,313.41	18,313.41	0.5069	0.33	18,424.43

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-CO2	Total	CH4	N2O	CO2e
Percent Reduction	18.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas	0.2529	2.1630	0.9362	0.0138		0.1747	0.1747		0.1747	0.1747		2,758.316	2,758.3164	0.0529	0.0506	2,774.707
NaturalGas	0.2529	2.1630	0.9362	0.0138		0.1747	0.1747		0.1747	0.1747		2,758.316	2,758.3164	0.0529	0.0506	2,774.707

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					
Apartments Mid Rise	16336.7	0.1762	1.5055	0.6407	9.6100e-003		0.1217	0.1217		0.1217	0.1217		1,921.9609	1,921.9609	0.0368	0.0352	1,933.3822
Apartments Mid Rise	6721.24	0.0725	0.6194	0.2636	3.9500e-003		0.0501	0.0501		0.0501	0.0501		790.7336	790.7336	0.0152	0.0145	795.4325
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	387.786	4.1800e-003	0.0380	0.0319	2.3000e-004		2.8900e-003	2.8900e-003		2.8900e-003	2.8900e-003		45.6219	45.6219	8.7000e-004	8.4000e-004	45.8930

Total		0.2528	2.1630	0.9362	0.0138		0.1747	0.1747		0.1747	0.1747		2,758.3164	2,758.3164	0.0529	0.0506	2,774.7077
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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					
Apartments Mid Rise	6.72124	0.0725	0.6194	0.2636	3.9500e-003		0.0501	0.0501		0.0501	0.0501		790.7336	790.7336	0.0152	0.0145	795.4325
Apartments Mid Rise	16.3367	0.1762	1.5055	0.6407	9.6100e-003		0.1217	0.1217		0.1217	0.1217		1,921.9609	1,921.9609	0.0368	0.0352	1,933.3822
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.387786	4.1800e-003	0.0380	0.0319	2.3000e-004		2.8900e-003	2.8900e-003		2.8900e-003	2.8900e-003		45.6219	45.6219	8.7000e-004	8.4000e-004	45.8930
Total		0.2528	2.1630	0.9362	0.0138		0.1747	0.1747		0.1747	0.1747		2,758.3164	2,758.3164	0.0529	0.0506	2,774.7077

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 Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	41.0207	12.8569	84.7223	0.0804		1.4069	1.4069		1.4069	1.4069	0.0000	15,386.1445	15,386.1445	0.4303	0.2795	15,480.1776
Unmitigated	50.4545	12.8569	84.7223	0.0804		1.4069	1.4069		1.4069	1.4069	0.0000	15,386.1445	15,386.1445	0.4303	0.2795	15,480.1776

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
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SubCategory	lb/day										lb/day					
Architectural Coating	7.1295					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	39.5250					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.3972	11.9400	5.0809	0.0762		0.9654	0.9654		0.9654	0.9654	0.0000	15,242.5412	15,242.5412	0.2922	0.2795	15,333.1200
Landscaping	2.4027	0.9169	79.6415	4.2100e-003		0.4415	0.4415		0.4415	0.4415		143.6033	143.6033	0.1382		147.0577
Total	50.4545	12.8569	84.7223	0.0804		1.4069	1.4069		1.4069	1.4069	0.0000	15,386.1445	15,386.1445	0.4303	0.2795	15,480.1776

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6319					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	36.5889					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.3972	11.9400	5.0809	0.0762		0.9654	0.9654		0.9654	0.9654	0.0000	15,242.5412	15,242.5412	0.2922	0.2795	15,333.1200
Landscaping	2.4027	0.9169	79.6415	4.2100e-003		0.4415	0.4415		0.4415	0.4415		143.6033	143.6033	0.1382		147.0577
Total	41.0207	12.8569	84.7223	0.0804		1.4069	1.4069		1.4069	1.4069	0.0000	15,386.1445	15,386.1445	0.4303	0.2795	15,480.1776

10.1 Stationary Sources
Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel	0.3302	1.4769	0.8421	1.5900e-003		0.0486	0.0486		0.0486	0.0486		168.9522	168.9522	0.0237		169.5444
Total	0.3302	1.4769	0.8421	1.5900e-003		0.0486	0.0486		0.0486	0.0486		168.9522	168.9522	0.0237		169.5444

Station East - Phase 1 Operation - Alameda County, Annual

Station East - Phase 1 Operation Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	1,124.00	Space	5.12	449,600.00	0
Parking Lot	214.00	Space	0.98	85,600.00	0
Apartments Mid Rise	683.00	Dwelling Unit	14.57	1,278,379.00	1953
Regional Shopping Center	30.77	1000sqft	0.35	30,770.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2023

Utility Company Pacific Gas & Electric Company

CO2 Intensity	147	CH4 Intensity	0.029	N2O Intensity	0.003
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1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted for 2023

Land Use - lot acreage scaled by sf; land use amounts per applicant

Construction Phase - operational analysis only

Off-road Equipment -

Grading -

Vehicle Trips - VMT modeled separately

Woodstoves - assumed all default fireplaces to be gas; assumed no woodstoves

Energy Use -

Land Use Change - vegetation acreages provided by applicant

Sequestration - net new trees inputted

Area Mitigation - assumed extremely compliant VOC paint and green consumer products

Water Mitigation -

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps - provided by applicant

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExterior	150	10
tblAreaMitigation	UseLowVOCPaintNonresidentialInterior	100	10
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	150	10
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	10
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	10
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	102.45	218.56
tblFireplaces	NumberWood	116.11	0.00
tblLandUse	LandUseSquareFeet	683,000.00	1,278,379.00
tblLandUse	LotAcreage	10.12	5.12
tblLandUse	LotAcreage	1.93	0.98
tblLandUse	LotAcreage	17.97	14.57
tblLandUse	LotAcreage	0.71	0.35
tblProjectCharacteristics	CO2IntensityFactor	641.35	147
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblSequestration	NumberOfNewTrees	0.00	641.00
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	6.65	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblWoodstoves	NumberCatalytic	13.66	0.00
tblWoodstoves	NumberNoncatalytic	13.66	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction
2.2 Overall Operational
Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.2313	0.0822	5.0951	4.2000e-004		0.0300	0.0300		0.0300	0.0300	0.0000	35.5933	35.5933	8.5500e-003	5.0000e-004	35.9562
Energy	0.0329	0.2817	0.1228	1.8000e-003		0.0227	0.0227		0.0227	0.0227	0.0000	711.5068	711.5068	0.0823	0.0138	717.6911

Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Stationary	1.9800e-003	8.8600e-003	5.0500e-003	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.9196	0.9196	1.3000e-004	0.0000	0.9229
Waste						0.0000	0.0000		0.0000	0.0000	70.3343	0.0000	70.3343	4.1566	0.0000	174.2504
Water						0.0000	0.0000		0.0000	0.0000	14.8410	23.7510	38.5919	1.5290	0.0365	87.6869
Total	6.2662	0.3727	5.2229	2.2300e-003	0.0000	0.0531	0.0531	0.0000	0.0531	0.0531	85.1753	771.7707	856.9460	5.7767	0.0508	1,016.5074

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.0041	0.0822	5.0951	4.2000e-004		0.0300	0.0300		0.0300	0.0300	0.0000	35.5933	35.5933	8.5500e-003	5.0000e-004	35.9562
Energy	0.0329	0.2817	0.1228	1.8000e-003		0.0227	0.0227		0.0227	0.0227	0.0000	711.5068	711.5068	0.0823	0.0138	717.6911
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Stationary	1.9800e-003	8.8600e-003	5.0500e-003	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.9196	0.9196	1.3000e-004	0.0000	0.9229
Waste						0.0000	0.0000		0.0000	0.0000	70.3343	0.0000	70.3343	4.1566	0.0000	174.2504
Water						0.0000	0.0000		0.0000	0.0000	11.8728	19.9561	31.8289	1.2234	0.0292	71.1154
Total	5.0390	0.3727	5.2229	2.2300e-003	0.0000	0.0531	0.0531	0.0000	0.0531	0.0531	82.2071	767.9759	850.1830	5.4710	0.0435	999.9359

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-CO2	Total	CH4	N2O	CO2e
Percent Reduction	19.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.48	0.49	0.79	5.29	14.33	1.63

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	385.7514	385.7514	0.0761	7.8700e-003	389.9999
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	385.7514	385.7514	0.0761	7.8700e-003	389.9999
NaturalGas Mitigated	0.0329	0.2817	0.1228	1.8000e-003		0.0227	0.0227		0.0227	0.0227	0.0000	325.7554	325.7554	6.2400e-003	5.9700e-003	327.6912
NaturalGas Unmitigated	0.0329	0.2817	0.1228	1.8000e-003		0.0227	0.0227		0.0227	0.0227	0.0000	325.7554	325.7554	6.2400e-003	5.9700e-003	327.6912

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					
Apartments Mid Rise	5.96288e+006	0.0322	0.2748	0.1169	1.7500e-003		0.0222	0.0222		0.0222	0.0222	0.0000	318.2022	318.2022	6.1000e-003	5.8300e-003	320.0931
Enclosed Parking Structure	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
Regional Shopping Center	141542	7.6000e-004	6.9400e-003	5.8300e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5532	7.5532	1.4000e-004	1.4000e-004	7.5981
Total		0.0329	0.2817	0.1228	1.7900e-003		0.0227	0.0227		0.0227	0.0227	0.0000	325.7554	325.7554	6.2400e-003	5.9700e-003	327.6912

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					
Apartments Mid Rise	5.96288e+006	0.0322	0.2748	0.1169	1.7500e-003		0.0222	0.0222		0.0222	0.0222	0.0000	318.2022	318.2022	6.1000e-003	5.8300e-003	320.0931
Enclosed Parking Structure	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
Regional Shopping Center	141542	7.6000e-004	6.9400e-003	5.8300e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5532	7.5532	1.4000e-004	1.4000e-004	7.5981

Total		0.0329	0.2817	0.1228	1.7900e-003		0.0227	0.0227		0.0227	0.0227	0.0000	325.7554	325.7554	6.2400e-003	5.9700e-003	327.6912
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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	2.88362e+006	192.2742	0.0379	3.9200e-003	194.3918
Enclosed Parking Structure	2.54923e+006	169.9779	0.0335	3.4700e-003	171.8500
Parking Lot	29960	1.9977	3.9000e-004	4.0000e-005	2.0197
Regional Shopping Center	322470	21.5017	4.2400e-003	4.4000e-004	21.7385
Total		385.7514	0.0761	7.8700e-003	389.9999

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	2.88362e+006	192.2742	0.0379	3.9200e-003	194.3918
Enclosed Parking Structure	2.54923e+006	169.9779	0.0335	3.4700e-003	171.8500
Parking Lot	29960	1.9977	3.9000e-004	4.0000e-005	2.0197
Regional Shopping Center	322470	21.5017	4.2400e-003	4.4000e-004	21.7385

Total		385.7514	0.0761	7.8700e-003	389.9999
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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 Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.0041	0.0822	5.0951	4.2000e-004		0.0300	0.0300		0.0300	0.0300	0.0000	35.5933	35.5933	8.5500e-003	5.0000e-004	35.9562
Unmitigated	6.2313	0.0822	5.0951	4.2000e-004		0.0300	0.0300		0.0300	0.0300	0.0000	35.5933	35.5933	8.5500e-003	5.0000e-004	35.9562

6.2 Area by SubCategory

Unmitigated

[illegible]

Hearth	2.7600e-003	0.0236	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2849	27.2849	5.2000e-004	5.0000e-004	27.4470
Landscaping	0.1540	0.0586	5.0851	2.7000e-004		0.0281	0.0281		0.0281	0.0281	0.0000	8.3084	8.3084	8.0300e-003	0.0000	8.5092
Total	6.2313	0.0822	5.0951	4.2000e-004		0.0300	0.0300		0.0300	0.0300	0.0000	35.5933	35.5933	8.5500e-003	5.0000e-004	35.9562

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	0.0822					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.7652					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.7600e-003	0.0236	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2849	27.2849	5.2000e-004	5.0000e-004	27.4470
Landscaping	0.1540	0.0586	5.0851	2.7000e-004		0.0281	0.0281		0.0281	0.0281	0.0000	8.3084	8.3084	8.0300e-003	0.0000	8.5092
Total	5.0041	0.0822	5.0951	4.2000e-004		0.0300	0.0300		0.0300	0.0300	0.0000	35.5933	35.5933	8.5500e-003	5.0000e-004	35.9562

7.0 Water Detail

7.1 Mitigation Measures Water

- 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	31.8289	1.2234	0.0292	71.1154

Unmitigated	38.5919	1.5290	0.0365	87.6869
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7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	44.5002 / 28.0545	36.7205	1.4545	0.0347	83.4235
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.27921 / 1.39694	1.8714	0.0745	1.7800e-003	4.2634
Total		38.5919	1.5290	0.0365	87.6869

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	35.6002 / 26.3432	30.2864	1.1638	0.0278	67.6589
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.82337 / 1.31172	1.5425	0.0596	1.4200e-003	3.4565
Total		31.8289	1.2234	0.0292	71.1154

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	70.3343	4.1566	0.0000	174.2504
Unmitigated	70.3343	4.1566	0.0000	174.2504

8.2 Waste by Land Use

Unmitigated

	Waste	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid	314.18	63.7757	3.7690	0.0000	158.0016
Enclosed Parking	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional	32.31	6.5586	0.3876	0.0000	16.2488
Total		70.3343	4.1566	0.0000	174.2504

Mitigated

	Waste	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid	314.18	63.7757	3.7690	0.0000	158.0016
Enclosed Parking	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional	32.31	6.5586	0.3876	0.0000	16.2488
Total		70.3343	4.1566	0.0000	174.2504

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0.25	3	805	0.73	Diesel

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750 - 9999 HP)	1.9800e-003	8.8600e-003	5.0500e-003	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.9196	0.9196	1.3000e-004	0.0000	0.9229
Total	1.9800e-003	8.8600e-003	5.0500e-003	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.9196	0.9196	1.3000e-004	0.0000	0.9229

Station East - Phase 1 Operation - Alameda County, Summer

Station East - Phase 1 Operation Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	1,124.00	Space	5.12	449,600.00	0
Parking Lot	214.00	Space	0.98	85,600.00	0
Apartments Mid Rise	683.00	Dwelling Unit	14.57	1,278,379.00	1953
Regional Shopping Center	30.77	1000sqft	0.35	30,770.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2023

Utility Company Pacific Gas & Electric Company

CO2 Intensity	147	CH4 Intensity	0.029	N2O Intensity	0.003
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1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted for 2023

Land Use - lot acreage scaled by sf; land use amounts per applicant

Construction Phase - operational analysis only

Off-road Equipment -

Grading -

Vehicle Trips - VMT modeled separately

Woodstoves - assumed all default fireplaces to be gas; assumed no woodstoves

Energy Use -

Land Use Change - vegetation acreages provided by applicant

Sequestration - net new trees inputted

Area Mitigation - assumed extremely compliant VOC paint and green consumer products

Water Mitigation -

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps - provided by applicant

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExterio	150	10
tblAreaMitigation	UseLowVOCPaintNonresidentialInterior	100	10
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	150	10
tblAreaMitigation	UseLowVOCPaintResidentialExteriorVa	150	10
tblAreaMitigation	UseLowVOCPaintResidentialInteriorVal	100	10
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	102.45	218.56
tblFireplaces	NumberWood	116.11	0.00
tblLandUse	LandUseSquareFeet	683,000.00	1,278,379.00
tblLandUse	LotAcreage	10.12	5.12
tblLandUse	LotAcreage	1.93	0.98
tblLandUse	LotAcreage	17.97	14.57
tblLandUse	LotAcreage	0.71	0.35
tblProjectCharacteristics	CO2IntensityFactor	641.35	147
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblSequestration	NumberOfNewTrees	0.00	641.00
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	6.65	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblWoodstoves	NumberCatalytic	13.66	0.00
tblWoodstoves	NumberNoncatalytic	13.66	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary
2.2 Overall Operational
Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	35.4913	4.8807	58.3006	0.0300		0.6544	0.6544		0.6544	0.6544	0.0000	5,501.478	5,501.4784	0.2019	0.0990	5,536.025
Energy	0.1804	1.5436	0.6726	9.8400e-		0.1246	0.1246		0.1246	0.1246		1,967.582	1,967.5828	0.0377	0.0361	1,979.275
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Stationary	0.3303	1.4769	0.8421	1.5900e-		0.0486	0.0486		0.0486	0.0486		168.9522	168.9522	0.0237		169.5444
Total	36.0019	7.9012	59.8153	0.0414	0.0000	0.8276	0.8276	0.0000	0.8276	0.8276	0.0000	7,638.013	7,638.0135	0.2633	0.1351	7,684.844

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	28.7668	4.8807	58.3006	0.0300		0.6544	0.6544		0.6544	0.6544	0.0000	5,501.478	5,501.4784	0.2019	0.0990	5,536.025
Energy	0.1804	1.5436	0.6726	9.8400e-		0.1246	0.1246		0.1246	0.1246		1,967.582	1,967.5828	0.0377	0.0361	1,979.275
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Stationary	0.3303	1.4769	0.8421	1.5900e-		0.0486	0.0486		0.0486	0.0486		168.9522	168.9522	0.0237		169.5444
Total	29.2774	7.9012	59.8153	0.0414	0.0000	0.8276	0.8276	0.0000	0.8276	0.8276	0.0000	7,638.013	7,638.0135	0.2633	0.1351	7,684.844

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-CO2	Total	CH4	N2O	CO2e
Percent Reduction	18.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1804	1.5436	0.6726	9.8400e-003		0.1246	0.1246		0.1246	0.1246		1,967.5828	1,967.5828	0.0377	0.0361	1,979.2752
NaturalGas Unmitigated	0.1804	1.5436	0.6726	9.8400e-003		0.1246	0.1246		0.1246	0.1246		1,967.5828	1,967.5828	0.0377	0.0361	1,979.2752

5.2 Energy by Land Use - NaturalGas Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	16336.7	0.1762	1.5055	0.6407	9.6100e-003		0.1217	0.1217		0.1217	0.1217		1,921.9609	1,921.9609	0.0368	0.0352	1,933.3822
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	387.786	4.1800e-003	0.0380	0.0319	2.3000e-004		2.8900e-003	2.8900e-003		2.8900e-003	2.8900e-003		45.6219	45.6219	8.7000e-004	8.4000e-004	45.8930
Total		0.1804	1.5436	0.6726	9.8400e-003		0.1246	0.1246		0.1246	0.1246		1,967.5828	1,967.5828	0.0377	0.0361	1,979.2752

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					
Apartments Mid Rise	16.3367	0.1762	1.5055	0.6407	9.6100e-003		0.1217	0.1217		0.1217	0.1217		1,921.9609	1,921.9609	0.0368	0.0352	1,933.3822
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.387786	4.1800e-003	0.0380	0.0319	2.3000e-004		2.8900e-003	2.8900e-003		2.8900e-003	2.8900e-003		45.6219	45.6219	8.7000e-004	8.4000e-004	45.8930
Total		0.1804	1.5436	0.6726	9.8400e-003		0.1246	0.1246		0.1246	0.1246		1,967.5828	1,967.5828	0.0377	0.0361	1,979.2752

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 Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	28.7668	4.8807	58.3006	0.0300		0.6544	0.6544		0.6544	0.6544	0.0000	5,501.4784	5,501.4784	0.2019	0.0990	5,536.0251
Unmitigated	35.4913	4.8807	58.3006	0.0300		0.6544	0.6544		0.6544	0.6544	0.0000	5,501.4784	5,501.4784	0.2019	0.0990	5,536.0251

6.2 Area by SubCategory
Unmitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0801					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	28.2054					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4950	4.2298	1.7999	0.0270		0.3420	0.3420		0.3420	0.3420	0.0000	5,399.7177	5,399.7177	0.1035	0.0990	5,431.8055

Landscaping	1.7109	0.6510	56.5007	2.9900e-003		0.3125	0.3125		0.3125	0.3125		101.7608	101.7608	0.0984		104.2196
Total	35.4913	4.8807	58.3006	0.0300		0.6544	0.6544		0.6544	0.6544	0.0000	5,501.4784	5,501.4784	0.2018	0.0990	5,536.0251

Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4502					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	26.1107					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4950	4.2298	1.7999	0.0270		0.3420	0.3420		0.3420	0.3420	0.0000	5,399.7177	5,399.7177	0.1035	0.0990	5,431.8055
Landscaping	1.7109	0.6510	56.5007	2.9900e-003		0.3125	0.3125		0.3125	0.3125		101.7608	101.7608	0.0984		104.2196
Total	28.7668	4.8807	58.3006	0.0300		0.6544	0.6544		0.6544	0.6544	0.0000	5,501.4784	5,501.4784	0.2018	0.0990	5,536.0251

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0.25	3	805	0.73	Diesel

10.1 Stationary Sources
Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio-	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel	0.3303	1.4769	0.8421	1.5900e-003		0.0486	0.0486		0.0486	0.0486		168.9522	168.9522	0.0237		169.5444
Total	0.3303	1.4769	0.8421	1.5900e-003		0.0486	0.0486		0.0486	0.0486		168.9522	168.9522	0.0237		169.5444

Station East - Operation Sequestration - Alameda County, Annual

Station East - Operation Sequestration Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	0.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2022

Utility Company

CO2 Intensity	0	CH4 Intensity	0	N2O Intensity	0
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1.3 User Entered Comments & Non-Default Data

Project Characteristics - sequestration run only

Land Use -

Trips and VMT - sequestration run only

Sequestration - net increase in trees

tblSequestration	NumberOfNewTrees	0.00	667.00
------------------	------------------	------	--------

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	472.2360	0.0000	0.0000	472.2360

11.2 Net New Trees

Species Class

	Number of	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	667	472.2360	0.0000	0.0000	472.2360
Total		472.2360	0.0000	0.0000	472.2360

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Station East
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT=
 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 5.6 DEGREE (C)

II. LINK VARIABLES

H	W	LINK	*	LINK COORDINATES (M)				*	EF
(M)	(M)	DESCRIPTION	*	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)
0.0	13.3	A. EBA	*	-1000	-4	0	-4	* AG	934 3.7
0.0	13.3	B. EBD	*	0	-4	1000	-4	* AG	1295 3.7
0.0	20.6	C. WBA	*	1000	7	0	7	* AG	2050 3.7
0.0	10.0	D. WBD	*	0	2	-1000	2	* AG	1801 3.7
0.0	24.3	E. SBA	*	-9	1000	-9	0	* AG	39 3.7
0.0	17.0	F. SBD	*	-5	0	-5	-1000	* AG	462 3.7
0.0	24.3	G. NBA	*	9	-1000	9	0	* AG	600 3.7
0.0	17.0	H. NBD	*	5	0	5	1000	* AG	65 3.7

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
		X	Y	Z
1. R_001	*	-21	7	1.8
2. R_002	*	14	18	1.8
3. R_003	*	-14	-10	1.8
4. R_004	*	21	-10	1.8

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Station East
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	* PRED * CONC * (PPM)	*	CONC/LINK (PPM)					
					A	B	C	D	E	F
H										G
1. R_001	*	95.	*	1.6	*	0.0	0.4	0.6	0.5	0.0
0.0 0.0										
2. R_002	*	99.	*	1.2	*	0.0	0.3	0.9	0.0	0.0
0.0 0.0										
3. R_003	*	81.	*	1.4	*	0.1	0.5	0.5	0.0	0.1
0.1 0.0										
4. R_004	*	279.	*	1.3	*	0.3	0.3	0.0	0.5	0.0
0.1 0.0										

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Station East
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT=
 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGHT= 15. DEGREES TEMP= 5.6 DEGREE (C)

II. LINK VARIABLES

H	W	LINK	*	LINK COORDINATES (M)				*	EF
(M)	(M)	DESCRIPTION	*	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)
0.0	13.3	A. EBA	*	-1000	-4	0	-4	* AG	956 3.7
0.0	13.3	B. EBD	*	0	-4	1000	-4	* AG	1316 3.7
0.0	20.6	C. WBA	*	1000	7	0	7	* AG	2078 3.7
0.0	10.0	D. WBD	*	0	2	-1000	2	* AG	1829 3.7
0.0	24.3	E. SBA	*	-9	1000	-9	0	* AG	39 3.7
0.0	17.0	F. SBD	*	-5	0	-5	-1000	* AG	463 3.7
0.0	24.3	G. NBA	*	9	-1000	9	0	* AG	600 3.7
0.0	17.0	H. NBD	*	5	0	5	1000	* AG	65 3.7

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
		X	Y	Z
1. R_001	*	-21	7	1.8
2. R_002	*	14	18	1.8
3. R_003	*	-14	-10	1.8
4. R_004	*	21	-10	1.8

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Station East
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	* PRED * CONC * (PPM)	*	CONC/LINK (PPM)					
					A	B	C	D	E	F
H										G
1. R_001	*	95.	*	1.6	*	0.0	0.4	0.6	0.5	0.0
0.0 0.0										
2. R_002	*	99.	*	1.2	*	0.0	0.3	0.9	0.0	0.0
0.0 0.0										
3. R_003	*	81.	*	1.4	*	0.2	0.5	0.5	0.0	0.1
0.1 0.0										
4. R_004	*	279.	*	1.3	*	0.3	0.3	0.0	0.5	0.0
0.1 0.0										

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Station East
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT=
 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGHT= 15. DEGREES TEMP= 5.6 DEGREE (C)

II. LINK VARIABLES

H	W	LINK	*	LINK COORDINATES (M)				*	EF
(M)	(M)	DESCRIPTION	*	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)
0.0	13.3	A. EBA	*	-1000	-4	0	-4	* AG	941 3.7
0.0	13.3	B. EBD	*	0	-4	1000	-4	* AG	462 3.7
0.0	17.0	C. WBA	*	1000	5	0	5	* AG	329 3.7
0.0	13.3	D. WBD	*	0	4	-1000	4	* AG	682 3.7
0.0	13.3	E. SBA	*	-4	1000	-4	0	* AG	472 3.7
0.0	10.0	F. SBD	*	-2	0	-2	-1000	* AG	1 3.7
0.0	10.0	G. NBA	*	2	-1000	2	0	* AG	2 3.7
0.0	10.0	H. NBD	*	2	0	2	1000	* AG	599 3.7

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. R_001	*	-10	10	1.8
2. R_002	*	7	14	1.8
3. R_003	*	-7	-10	1.8
4. R_004	*	7	-10	1.8

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Station East
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG	* PRED	*	CONC/LINK						
	*	(DEG)	* CONC	*	(PPM)						
	*		* (PPM)	*	A	B	C	D	E	F	G
1. R_001	*	261.	* 0.7	*	0.3	0.0	0.0	0.4	0.0	0.0	
0.0 0.0											
2. R_002	*	261.	* 0.8	*	0.3	0.0	0.0	0.3	0.1	0.0	
0.0 0.2											
3. R_003	*	4.	* 0.8	*	0.2	0.0	0.0	0.1	0.3	0.0	
0.0 0.2											
4. R_004	*	278.	* 0.7	*	0.5	0.0	0.0	0.2	0.0	0.0	
0.0 0.0											

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 JUNE 1989 VERSION
 PAGE 1

JOB: Station East
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT=
 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGHT= 15. DEGREES TEMP= 5.6 DEGREE (C)

II. LINK VARIABLES

H	W	LINK	*	LINK COORDINATES (M)				*	EF
(M)	(M)	DESCRIPTION	*	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)
0.0	13.3	A. EBA	*	-1000	-4	0	-4	* AG	941 3.7
0.0	13.3	B. EBD	*	0	-4	1000	-4	* AG	462 3.7
0.0	17.0	C. WBA	*	1000	5	0	5	* AG	329 3.7
0.0	13.3	D. WBD	*	0	4	-1000	4	* AG	683 3.7
0.0	13.3	E. SBA	*	-4	1000	-4	0	* AG	473 3.7
0.0	10.0	F. SBD	*	-2	0	-2	-1000	* AG	1 3.7
0.0	10.0	G. NBA	*	2	-1000	2	0	* AG	2 3.7
0.0	10.0	H. NBD	*	2	0	2	1000	* AG	599 3.7

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. R_001	*	-10	10	1.8
2. R_002	*	7	14	1.8
3. R_003	*	-7	-10	1.8
4. R_004	*	7	-10	1.8

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IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG	* PRED	*	CONC/LINK						
	*	(DEG)	* CONC	*	(PPM)						
	*		* (PPM)	*	A	B	C	D	E	F	G
1. R_001	*	261.	* 0.7	*	0.3	0.0	0.0	0.4	0.0	0.0	
0.0 0.0											
2. R_002	*	261.	* 0.8	*	0.3	0.0	0.0	0.3	0.1	0.0	
0.0 0.2											
3. R_003	*	4.	* 0.8	*	0.2	0.0	0.0	0.1	0.3	0.0	
0.0 0.2											
4. R_004	*	278.	* 0.7	*	0.5	0.0	0.0	0.2	0.0	0.0	
0.0 0.0											

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Battery Generators - Operational GHG Emissions

mt per lb	4.54E-04
CH4	25
N2O	298

Emission Factors (lb/MWh)*

Year	CO2	CH4	N2O
2018	210	0.03	0.00
2040	0	0.01	0.00

*See Utility Efs spreadsheet in 01 Emission Factors

Annual kwh	137	Assumption
Annual MWh	0.14	

Emissions (MT per year)

Year	CO2	CH4	N2O	CO2e
2018	0	0.0	0.0	0
2040	0	0.0	0.0	0

Emission Factors																						
Running (RUNEX, PMTW, PMBW, RD) grams per mile													Process (IDLEX, STREX, TOTEX, DIURN, HTSK, RUNLS, RESTL) grams per trip									
	ROG	TOG	CO	NOx	CO2	CH4	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SOX	N2O	ROG	TOG	CO	NOx	CO2	CH4	PM10	PM2.5	SOX	N2O
2018	0.06	0.08	1.23	0.46	418.35	0.01	0.01	0.34	0.01	0.09	0.00	0.02	0.17	0.18	0.42	0.08	11.30	0.01	0.00	0.00	0.00	0.01
2023	0.03	0.04	0.75	0.22	369.38	0.01	0.00	0.34	0.00	0.09	0.00	0.02	0.13	0.14	0.37	0.07	10.65	0.01	0.00	0.00	0.00	0.00
2025	0.02	0.03	0.66	0.21	353.65	0.01	0.00	0.34	0.00	0.09	0.00	0.02	0.12	0.12	0.35	0.07	10.29	0.01	0.00	0.00	0.00	0.00
Year	GAS																					
	gal/mi	diesel gal/mi																				
2018	0.038	0.010																				
2023	0.032	0.010																				
2025	0.030	0.010																				

Source: EMFAC2017, Factored in SAFE

Summary of Mobile Source Emissions																
Condition	Pounds per Day						Metric Tons per Year				Gallons per year					
	ROG	NOx	CO	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	Gasoline	Diesel				
Existing (2018)	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0	0				
Phase 1 (2023)	5	33	112	49	13	1	8,360	0	0	8,501	728,635	222,506				
Project (2025)	7	44	139	69	19	1	11,219	0	1	11,410	951,296	310,029				

Daily VMT

Speed Bin	Existing (2018)	Phase 1 (Project)	Project
Total	0	65,222	91,425

Source: F&P 2/24/20

Annual VMT

Speed Bin	Existing (2018)	Phase 1 (Project)	Existing Plus Project (2018)
Total	0	22,631,980	31,724,384

Assumption: 347 days per year (CARB)

Daily Trips

Condition	Trips
Existing (2018)	0
Phase 1 Project	5764
Project	8,080

Source: F&P 2/24/20

Annual Trips

Condition	Trips
Existing (2018)	0
Phase 1 Project	2,000,185
Project	2,803,760

Assumption: 347 days per year (CARB)

	Units	Residential SF	
Phase 1 Residential	683	1,278,379	70%
Phase 1 Retail	-	30,770	2%
Phase 2 Residential	281	525,951	29%
Phase 1		71%	
Phase 1 VMT		65,222	

Health Risk Analysis

Summary of Offsite Mitigated Cancer and Noncancer Health Risks and PM2.5 Concentrations for the MEI

Receptor	Cancer Risk (per million)	Chronic HI	PM2.5 (ug/m3)
MEI 1 Park (PM2.5)	0.25	0.001	0.22
MEI Residence (Cancer Risk)	8.83	0.005	0.15
Threshold	10	1.0	0.3

	DPM Reduction With Mitigation	DPM Reduction With Mitigatoin	PM2.5 Reduction With Mitigation
Reduction	91%	91%	50%
MEI Park 1 (Unmitigted)	2.9	0.012	0.439
MEI Residence (Unmitigated)	102.8	0.060	0.290

Receptors				Concentration ug/m3			Dose Inhalation by Bin			Cancer Risk by Bin			Sum of Cancer Risk		Chronic HI (max annual)	Max PM2.5	
Rec ID	Detail	X	Y	Type	3RDTRI	0_2	2_9	3RDTRI	0_2	2_9	3RDTRI	0_2	2_9	Summed Risk	Cases Per Million	Total (ug/m3)	
Res_Highest_DPM1	Residence	587176.8	4161435.88	Residential	6.10E-04	2.57E-02	4.47E-03	2.1E-07	2.7E-05	2.7E-06	8.3E-09	8.4E-06	3.1E-07	9E-06	8.75	0.0051	0.174
Res_Highest_DPM2	Residence	587199.49	4161393.83	Residential	3.60E-04	2.59E-02	4.56E-03	1.2E-07	2.7E-05	2.8E-06	4.9E-09	8.5E-06	3.2E-07	9E-06	8.83	0.0052	0.146
Res_Highest_DPM3	Residence	587199	4161414.19	Residential	4.50E-04	2.44E-02	4.26E-03	1.6E-07	2.5E-05	2.6E-06	6.1E-09	8.0E-06	2.9E-07	8E-06	8.31	0.0049	0.148
Res_Highest_DPM4	Residence	587199.49	4161393.83	Residential	3.60E-04	2.59E-02	4.56E-03	1.2E-07	2.7E-05	2.8E-06	4.9E-09	8.5E-06	3.2E-07	9E-06	8.83	0.0052	0.146
Res_Highest_DPM5	Residence	587176.8	4161435.88	Residential	6.10E-04	2.57E-02	4.47E-03	2.1E-07	2.7E-05	2.7E-06	8.3E-09	8.4E-06	3.1E-07	9E-06	8.75	0.0051	0.174
Res_Highest_DPM6	Residence	587199	4161414.19	Residential	4.50E-04	2.44E-02	4.26E-03	1.6E-07	2.5E-05	2.6E-06	6.1E-09	8.0E-06	2.9E-07	8E-06	8.31	0.0049	0.148
Res_Highest_DPM7	Residence	587199.49	4161393.83	Residential	3.60E-04	2.59E-02	4.56E-03	1.2E-07	2.7E-05	2.8E-06	4.9E-09	8.5E-06	3.2E-07	9E-06	8.83	0.0052	0.146
Res_Highest_DPM8	Residence	587176.8	4161435.88	Residential	6.10E-04	2.57E-02	4.47E-03	2.1E-07	2.7E-05	2.7E-06	8.3E-09	8.4E-06	3.1E-07	9E-06	8.75	0.0051	0.174
Res_Highest_DPM9	Residence	587199	4161414.19	Residential	4.50E-04	2.44E-02	4.26E-03	1.6E-07	2.5E-05	2.6E-06	6.1E-09	8.0E-06	2.9E-07	8E-06	8.31	0.0049	0.148
Res_Highest_PM1	Residence	587176.8	4161435.88	Residential	6.10E-04	2.57E-02	4.47E-03	2.1E-07	2.7E-05	2.7E-06	8.3E-09	8.4E-06	3.1E-07	9E-06	8.75	0.0051	0.174
Res_Highest_PM2	Residence	587199.49	4161393.83	Residential	3.60E-04	2.59E-02	4.56E-03	1.2E-07	2.7E-05	2.8E-06	4.9E-09	8.5E-06	3.2E-07	9E-06	8.83	0.0052	0.146
Res_Highest_PM3	Residence	587199	4161414.19	Residential	4.50E-04	2.44E-02	4.26E-03	1.6E-07	2.5E-05	2.6E-06	6.1E-09	8.0E-06	2.9E-07	8E-06	8.31	0.0049	0.148
Res_Highest_PM4	Residence	587176.8	4161435.88	Residential	6.10E-04	2.57E-02	4.47E-03	2.1E-07	2.7E-05	2.7E-06	8.3E-09	8.4E-06	3.1E-07	9E-06	8.75	0.0051	0.174
Res_Highest_PM5	Residence	587199.49	4161393.83	Residential	3.60E-04	2.59E-02	4.56E-03	1.2E-07	2.7E-05	2.8E-06	4.9E-09	8.5E-06	3.2E-07	9E-06	8.83	0.0052	0.146
Res_Highest_PM6	Residence	587199	4161414.19	Residential	4.50E-04	2.44E-02	4.26E-03	1.6E-07	2.5E-05	2.6E-06	6.1E-09	8.0E-06	2.9E-07	8E-06	8.31	0.0049	0.148
Res_Highest_PM7	Residence	587176.8	4161435.88	Residential	6.10E-04	2.57E-02	4.47E-03	2.1E-07	2.7E-05	2.7E-06	8.3E-09	8.4E-06	3.1E-07	9E-06	8.75	0.0051	0.174
Res_Highest_PM8	Residence	586776.8	4161655.88	Recreational	1.49E-03	5.32E-03	3.30E-04	1.3E-08	2.3E-07	7.5E-09	1.7E-09	2.4E-07	2.9E-09	2E-07	0.25	0.0011	0.058
Res_Highest_PM9	Residence	587199.49	4161393.83	Residential	3.60E-04	2.59E-02	4.56E-03	1.2E-07	2.7E-05	2.8E-06	4.9E-09	8.5E-06	3.2E-07	9E-06	8.83	0.0052	0.146
Res_Highest_Dust1	Residence	587176.8	4161435.88	Residential	6.10E-04	2.57E-02	4.47E-03	2.1E-07	2.7E-05	2.7E-06	8.3E-09	8.4E-06	3.1E-07	9E-06	8.75	0.0051	0.174
Res_Highest_Dust2	Residence	587199.49	4161393.83	Residential	3.60E-04	2.59E-02	4.56E-03	1.2E-07	2.7E-05	2.8E-06	4.9E-09	8.5E-06	3.2E-07	9E-06	8.83	0.0052	0.146
Res_Highest_Dust3	Residence	587156.8	4161455.88	Residential	6.60E-04	2.37E-02	4.08E-03	2.3E-07	2.5E-05	2.5E-06	9.0E-09	7.8E-06	2.8E-07	8E-06	8.06	0.0047	0.169
Park_Highest_Dust4	Park	586776.8	4161655.88	Recreational	1.49E-03	5.32E-03	3.30E-04	1.3E-08	2.3E-07	7.5E-09	1.7E-09	2.4E-07	2.9E-09	2E-07	0.25	0.0011	0.058
Park_Highest_Dust5	Park	586796.8	4161655.88	Recreational	1.08E-03	1.83E-02	3.13E-03	9.3E-09	7.8E-07	7.2E-08	1.2E-09	8.3E-07	2.7E-08	9E-07	0.86	0.0037	0.170
Res_Highest_Dust6	Residence	587176.8	4161435.88	Residential	6.10E-04	2.57E-02	4.47E-03	2.1E-07	2.7E-05	2.7E-06	8.3E-09	8.4E-06	3.1E-07	9E-06	8.75	0.0051	0.174
Res_Highest_Dust7	Park	586776.8	4161655.88	Recreational	1.34E-03	6.58E-03	9.90E-04	1.1E-08	2.8E-07	2.3E-08	1.5E-09	3.0E-07	8.7E-09	3E-07	0.31	0.0013	0.089
Res_Highest_Dust8	Residence	587036.8	4161575.88	Residential	8.50E-04	1.52E-02	2.50E-03	2.9E-07	1.6E-05	1.5E-06	1.2E-08	5.0E-06	1.7E-07	5E-06	5.19	0.0030	0.153
Park_Highest_Dust9	Park	586796.8	4161655.88	Recreational	1.08E-03	1.83E-02	3.13E-03	9.3E-09	7.8E-07	7.2E-08	1.2E-09	8.3E-07	2.7E-08	9E-07	0.86	0.0037	0.170
														8.83	0.0052	0.2208	

0

$$\text{Dose}_{\text{air}} = C_{\text{air}} \times [\text{BR}/\text{BW}] \times A \times \text{EF} \times 10^{-4}$$

$$\text{RISK}_{\text{inh-res}} = \text{DOSE}_{\text{air}} \times \text{CPF} \times \text{ASF} \times \text{ED}/\text{AT} \times \text{FAH}$$

DPM SUMMARY (g/sec/m2)

Source	3rd tri	Qc2	2-9
ONSITE	1.53E-08	4.59E-08	9.68E-09
ONSITE - UPRR	0.00E+00	4.61E-06	0.00E+00
OFFSITE - Haul Road	7.62E-10	7.64E-10	3.42E-12
OFFSITE - UPRR	0.00E+00	1.32E-10	0.00E+00

ASSUMPTIONS

	onsite	offsite	
Area Project Site	111,568.30	58076.4	m2
Area UPRR	319.6	21609.6	
AERMOD segment (Phase 1+2)	2393.1	meters	
AERMOD segment (UPRR)	675.3	meters	
meters to mile	0.000621371		

PM2.5 Exhaust SUMMARY (g/sec/m2)

Source	3rd tri	Qc2	2-9
ONSITE	1.53E-08	6.40E-08	1.35E-08
ONSITE - UPRR	0.00E+00	2.54E-08	0.00E+00
OFFSITE - Haul Roads	7.85E-10	2.03E-09	1.71E-09
OFFSITE - UPRR	0.00E+00	2.92E-10	0.00E+00

ASSUMPTIONS

	onsite	offsite	
Area Project Site	111,568.30	58076.4	m2
Area UPRR	319.6	21609.6	
AERMOD segment (Phase 1+2)	2393.1	meters	
AERMOD segment (UPRR)	675.3	meters	
meters to mile	0.000621371		

PM2.5 Dust SUMMARY (g/sec/m2)

Source	3rd tri	0c2	2-9
ONSITE	1.45E-07	1.45E-07	0.00E+00
ONSITE - UPRR	0.00E+00	4.90E-06	0.00E+00
OFFSITE - Haul Road	7.35E-09	6.56E-08	8.07E-08
OFFSITE - UPRR	0.00E+00	7.28E-11	0.00E+00

ASSUMPTIONS

	onsite	offsite	
Area Project Site	111,568.30	58076.4	m2
Area UPRR	319.6	21609.6	
AERMOD segment (Phase 1+2)	2393.1	meters	
AERMOD segment (UPRR)	675.3	meters	
meters to mile	0.000621371		

Source Inputs

Union City Population	75,343
Alameda County Population	1,663,000

offroad sources

Release Height (RH)	4.1 m
Vertical Dimension	3.81 m
Elevation	0 m

onroad/truck sources

Release Height (RH)	3.4 m	EPA PM Hostpot, Appx J
Vertical Dimension	3.16 m	CAPCOA 2009/AERMOD (RH/2.15)
Elevation	0 m	

receptor height (m)	0 Default
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Met from Oakland Airport

PM2.5 Exhaust (Offroad+Hauling+Vendor)= DPM

Construction	8am-8pm
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Health Risk - Dose and Risk Factors and Values

Dose factors

$Dose_{air} = C_{air} \times (BR/BW) \times A \times EF \times 10^{-6}$

$Dose_{air} = (C_{air} \times WAF) \times (BR/BW) \times A \times EF \times 10^{-6}$

	3rd trimester	0<2	2<9	2<16	16<30	16-70	source
Daily Breath Rate (BR/BW) (L/kg-day)							
Residential	361	1090	631	572	261	233	OEHHA 2015, Table 5.6, 95th %ile for 3rdtri-2yrs old; 80th for other age groups
Recreational	240	1200	640	520	240	230	OEHHA 2015, Table 5.8 (95th, moderate) for all bins but 3rd tri, which was taken from SJVAPCD's draft guidance
School	240	1200	640	520	240	230	SJVAPCD for 3rd tri; 95th percentile for all
A	1	1	1	1	1	1	OEHHA 2015, page 5-24
EF, Exposure frequency (unitless), days/365 days							
Residential	0.96	0.96	0.96	0.96	0.96	0.96	OEHHA 2015, page 5-24, 350 days/yr
Recreational	0.036	0.036	0.036	0.036	0.036	0.036	3x/week, 2 hours/day, for 9 years
School	0.12	0.12	0.12	0.12	0.12	0.12	180 days/yr, 6 hours/day (BAAQMD 2016)
Conversion Factor	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	(mg/ug + m3/L)

Risk factors

$RISK_{inh-res} = Dose_{air} \times CPF \times ASF \times ED/AT \times FAH$

	3rd trimester	0<2	2<9	2<16	16<30	16-70	source
CPF, DPM ((mg/kg-day) ⁻¹)	1.1	1.1	1.1	1.1	1.1	1.1	OEHHA 2015, Table 7.1
Average Age Sensitivity Factor	10	10	3	3	1	1	OEHHA 2015, Table 8.3
AT, Average Time (days)	70	70	70	70	70	70	Averaging time for lifetime cancer risk
FAH	1.00	1.00	1.00	1.00	1.00	1.00	OEHHA 2015, Table 8.4: Use FAH = 1 if a school is within the 1x10-6 (or greater) cancer risk isopleth
ED, Exposure Duration (years)	0.25	2	2.4	-	-	-	Equation 8.2.4 A, OEHHA 2015
Adjustment Factor							
Residential	1.00	1.00	1.00	1.00	1.00	1.00	OEHHA 2015, Page 4-44 and Equation 4.1; exposure is adjusted upward to account for overlapping daytime exposure.
Recreational	3.36	3.36	3.36	3.36	3.36	3.36	
School	3.36	3.36	3.36	3.36	3.36	3.36	

Hazard Index

Chronic Inhalation Reference Exposure Level, respiratory, DPM

5

OEHHA 2015, Table 6.3

Averaging Period (AVE)	Receptor ID	X	Y	Contour	BPM Concentration [AVERAGE CONC] [ug/m ³]	PM2.5 Ex Concentration [AVERAGE CONC] [ug/m ³]	PM2.5 Dust Concentration [AVERAGE CONC] [ug/m ³]	Total PM2.5 Concentration [AVERAGE CONC] [ug/m ³]	Source Group (GRP)
ANNUAL	Res_Highest_DP01	587176.8	4161435.88	Res_Highest_DP013RD7R	0.00061	0.00065	0.00065	0.00065	3RD7R
ANNUAL	Res_Highest_DP02	587199.49	4161393.83	Res_Highest_DP023RD7R	0.00036	0.00037	0.00037	0.00037	3RD7R
ANNUAL	Res_Highest_DP03	587199.49	4161414.19	Res_Highest_DP033RD7R	0.00045	0.00047	0.00047	0.00047	3RD7R
ANNUAL	Res_Highest_DP04	587199.49	4161393.83	Res_Highest_DP043RD7R	0.00036	0.00037	0.00037	0.00037	3RD7R
ANNUAL	Res_Highest_DP05	587176.8	4161435.88	Res_Highest_DP053RD7R	0.00061	0.00063	0.00063	0.00063	3RD7R
ANNUAL	Res_Highest_DP06	587199.49	4161414.19	Res_Highest_DP063RD7R	0.00045	0.00047	0.00047	0.00047	3RD7R
ANNUAL	Res_Highest_DP07	587199.49	4161393.83	Res_Highest_DP073RD7R	0.00036	0.00037	0.00037	0.00037	3RD7R
ANNUAL	Res_Highest_DP08	587176.8	4161435.88	Res_Highest_DP083RD7R	0.00061	0.00063	0.00063	0.00063	3RD7R
ANNUAL	Res_Highest_DP09	587199.49	4161414.19	Res_Highest_DP093RD7R	0.00045	0.00047	0.00047	0.00047	3RD7R
ANNUAL	Res_Highest_PM1	587176.8	4161435.88	Res_Highest_PM13RD7R	0.00061	0.00063	0.00063	0.00063	3RD7R
ANNUAL	Res_Highest_PM2	587199.49	4161393.83	Res_Highest_PM23RD7R	0.00036	0.00037	0.00037	0.00037	3RD7R
ANNUAL	Res_Highest_PM3	587199.49	4161414.19	Res_Highest_PM33RD7R	0.00045	0.00047	0.00047	0.00047	3RD7R
ANNUAL	Res_Highest_PM4	587176.8	4161435.88	Res_Highest_PM43RD7R	0.00061	0.00063	0.00063	0.00063	3RD7R
ANNUAL	Res_Highest_PM5	587199.49	4161393.83	Res_Highest_PM53RD7R	0.00036	0.00037	0.00037	0.00037	3RD7R
ANNUAL	Res_Highest_PM6	587199.49	4161414.19	Res_Highest_PM63RD7R	0.00045	0.00047	0.00047	0.00047	3RD7R
ANNUAL	Res_Highest_PM7	587176.8	4161435.88	Res_Highest_PM73RD7R	0.00061	0.00063	0.00063	0.00063	3RD7R
ANNUAL	Res_Highest_PM8	586527.04	4161091.81	Park_Highest_PM83RD7R	0.00170	0.00175	0.00175	0.00175	3RD7R
ANNUAL	Res_Highest_PM9	587199.49	4161393.83	Res_Highest_PM93RD7R	0.00036	0.00037	0.00037	0.00037	3RD7R
ANNUAL	Res_Highest_Dust1	587176.8	4161435.88	Res_Highest_Dust13RD7R	0.00061	0.00063	0.00063	0.00063	3RD7R
ANNUAL	Res_Highest_Dust2	587199.49	4161393.83	Res_Highest_Dust23RD7R	0.00036	0.00037	0.00037	0.00037	3RD7R
ANNUAL	Res_Highest_Dust3	587156.8	4161455.88	Res_Highest_Dust33RD7R	0.00066	0.00068	0.00068	0.00068	3RD7R
ANNUAL	Park_Highest_Dust4	586527.04	4161271.81	Park_Highest_Dust43RD7R	0.00149	0.00153	0.00153	0.00153	3RD7R
ANNUAL	Park_Highest_Dust5	586796.8	4161655.88	Park_Highest_Dust53RD7R	0.00108	0.00111	0.00111	0.00111	3RD7R
ANNUAL	Res_Highest_Dust6	587176.8	4161435.88	Res_Highest_Dust63RD7R	0.00061	0.00063	0.00063	0.00063	3RD7R
ANNUAL	Res_Highest_Dust7	586676.97	4161666.66	Res_Highest_Dust73RD7R	0.00114	0.00119	0.00119	0.00119	3RD7R
ANNUAL	Res_Highest_Dust8	587036.8	4161575.88	Res_Highest_Dust83RD7R	0.00085	0.00089	0.00089	0.00089	3RD7R
ANNUAL	Park_Highest_Dust9	586796.8	4161655.88	Park_Highest_Dust93RD7R	0.00108	0.00111	0.00111	0.00111	3RD7R
ANNUAL	Res_Highest_DP01	587176.8	4161435.88	Res_Highest_DP01D_2	0.02568	0.03503	0.13850	0.17353	0_2
ANNUAL	Res_Highest_DP02	587199.49	4161393.83	Res_Highest_DP02D_2	0.02590	0.03489	0.11089	0.14586	0_2
ANNUAL	Res_Highest_DP03	587199.49	4161414.19	Res_Highest_DP03D_2	0.02489	0.03305	0.11491	0.14796	0_2
ANNUAL	Res_Highest_DP04	587199.49	4161393.83	Res_Highest_DP04D_2	0.02590	0.03489	0.11089	0.14586	0_2
ANNUAL	Res_Highest_DP05	587176.8	4161435.88	Res_Highest_DP05D_2	0.02568	0.03503	0.13850	0.17353	0_2
ANNUAL	Res_Highest_DP06	587199.49	4161414.19	Res_Highest_DP06D_2	0.02489	0.03305	0.11491	0.14796	0_2
ANNUAL	Res_Highest_DP07	587199.49	4161393.83	Res_Highest_DP07D_2	0.02590	0.03489	0.11089	0.14586	0_2
ANNUAL	Res_Highest_DP08	587176.8	4161435.88	Res_Highest_DP08D_2	0.02568	0.03503	0.13850	0.17353	0_2
ANNUAL	Res_Highest_DP09	587199.49	4161414.19	Res_Highest_DP09D_2	0.02489	0.03305	0.11491	0.14796	0_2
ANNUAL	Res_Highest_PM1	587176.8	4161435.88	Res_Highest_PM1D_2	0.02568	0.03503	0.13850	0.17353	0_2
ANNUAL	Res_Highest_PM2	587199.49	4161393.83	Res_Highest_PM2D_2	0.02590	0.03489	0.11089	0.14586	0_2
ANNUAL	Res_Highest_PM3	587199.49	4161414.19	Res_Highest_PM3D_2	0.02489	0.03305	0.11491	0.14796	0_2
ANNUAL	Res_Highest_PM4	587176.8	4161435.88	Res_Highest_PM4D_2	0.02568	0.03503	0.13850	0.17353	0_2
ANNUAL	Res_Highest_PM5	587199.49	4161393.83	Res_Highest_PM5D_2	0.02590	0.03489	0.11089	0.14586	0_2
ANNUAL	Res_Highest_PM6	587199.49	4161414.19	Res_Highest_PM6D_2	0.02489	0.03305	0.11491	0.14796	0_2
ANNUAL	Res_Highest_PM7	587176.8	4161435.88	Res_Highest_PM7D_2	0.02568	0.03503	0.13850	0.17353	0_2
ANNUAL	Park_Highest_PM8	586796.8	4161655.88	Park_Highest_PM8D_2	0.01895	0.02771	0.09310	0.12281	0_2
ANNUAL	Res_Highest_PM9	587199.49	4161393.83	Res_Highest_PM9D_2	0.02590	0.03489	0.11089	0.14586	0_2
ANNUAL	Res_Highest_Dust1	587176.8	4161435.88	Res_Highest_Dust1D_2	0.02568	0.03503	0.13850	0.17353	0_2
ANNUAL	Res_Highest_Dust2	587199.49	4161393.83	Res_Highest_Dust2D_2	0.02590	0.03489	0.11089	0.14586	0_2
ANNUAL	Res_Highest_Dust3	587156.8	4161455.88	Res_Highest_Dust3D_2	0.02366	0.03223	0.13646	0.16869	0_2
ANNUAL	Park_Highest_Dust4	586527.04	4161271.81	Park_Highest_Dust4D_2	0.00522	0.00712	0.02594	0.03094	0_2
ANNUAL	Park_Highest_Dust5	586796.8	4161655.88	Park_Highest_Dust5D_2	0.01828	0.02621	0.09457	0.12978	0_2
ANNUAL	Res_Highest_Dust6	587176.8	4161435.88	Res_Highest_Dust6D_2	0.02568	0.03503	0.13850	0.17353	0_2
ANNUAL	Res_Highest_Dust7	586676.97	4161666.66	Res_Highest_Dust7D_2	0.00668	0.00995	0.03794	0.05059	0_2
ANNUAL	Res_Highest_Dust8	587036.8	4161575.88	Res_Highest_Dust8D_2	0.01524	0.02097	0.13233	0.15339	0_2
ANNUAL	Park_Highest_Dust9	586796.8	4161655.88	Park_Highest_Dust9D_2	0.01828	0.02621	0.14357	0.16978	0_2
ANNUAL	Res_Highest_DP01	587176.8	4161435.88	Res_Highest_DP01D_2_9	0.00447	0.00789	0.00621	0.07310	2_9
ANNUAL	Res_Highest_DP02	587199.49	4161393.83	Res_Highest_DP02D_2_9	0.00456	0.00744	0.00304	0.03778	2_9
ANNUAL	Res_Highest_DP03	587199.49	4161414.19	Res_Highest_DP03D_2_9	0.00436	0.00723	0.00445	0.00946	2_9
ANNUAL	Res_Highest_DP04	587199.49	4161393.83	Res_Highest_DP04D_2_9	0.00456	0.00744	0.00304	0.03778	2_9
ANNUAL	Res_Highest_DP05	587176.8	4161435.88	Res_Highest_DP05D_2_9	0.00447	0.00789	0.00621	0.07310	2_9
ANNUAL	Res_Highest_DP06	587199.49	4161414.19	Res_Highest_DP06D_2_9	0.00436	0.00723	0.00445	0.00946	2_9
ANNUAL	Res_Highest_DP07	587199.49	4161393.83	Res_Highest_DP07D_2_9	0.00456	0.00744	0.00304	0.03778	2_9
ANNUAL	Res_Highest_DP08	587176.8	4161435.88	Res_Highest_DP08D_2_9	0.00447	0.00789	0.00621	0.07310	2_9
ANNUAL	Res_Highest_DP09	587199.49	4161414.19	Res_Highest_DP09D_2_9	0.00436	0.00723	0.00445	0.00946	2_9
ANNUAL	Res_Highest_PM1	587176.8	4161435.88	Res_Highest_PM1D_2_9	0.00447	0.00789	0.00621	0.07310	2_9
ANNUAL	Res_Highest_PM2	587199.49	4161393.83	Res_Highest_PM2D_2_9	0.00456	0.00744	0.00304	0.03778	2_9
ANNUAL	Res_Highest_PM3	587199.49	4161414.19	Res_Highest_PM3D_2_9	0.00436	0.00723	0.00445	0.00946	2_9
ANNUAL	Res_Highest_PM4	587176.8	4161435.88	Res_Highest_PM4D_2_9	0.00447	0.00789	0.00621	0.07310	2_9
ANNUAL	Res_Highest_PM5	587199.49	4161393.83	Res_Highest_PM5D_2_9	0.00456	0.00744	0.00304	0.03778	2_9
ANNUAL	Res_Highest_PM6	587199.49	4161414.19	Res_Highest_PM6D_2_9	0.00436	0.00723	0.00445	0.00946	2_9
ANNUAL	Res_Highest_PM7	587176.8	4161435.88	Res_Highest_PM7D_2_9	0.00447	0.00789	0.00621	0.07310	2_9
ANNUAL	Park_Highest_PM8	586527.04	4161091.81	Park_Highest_PM8D_2_9	0.00019	0.00408	0.00747	0.00855	2_9
ANNUAL	Res_Highest_PM9	587199.49	4161393.83	Res_Highest_PM9D_2_9	0.00456	0.00744	0.00304	0.03778	2_9
ANNUAL	Res_Highest_Dust1	587176.8	4161435.88	Res_Highest_Dust1D_2_9	0.00447	0.00789	0.00621	0.07310	2_9
ANNUAL	Res_Highest_Dust2	587199.49	4161393.83	Res_Highest_Dust2D_2_9	0.00456	0.00744	0.00304	0.03778	2_9
ANNUAL	Res_Highest_Dust3	587156.8	4161455.88	Res_Highest_Dust3D_2_9	0.00408	0.00741	0.02786	0.03769	2_9
ANNUAL	Park_Highest_Dust4	586527.04	4161271.81	Park_Highest_Dust4D_2_9	0.00033	0.00382	0.05142	0.05494	2_9
ANNUAL	Park_Highest_Dust5	586796.8	4161655.88	Park_Highest_Dust5D_2_9	0.00313	0.00697	0.10163	0.10860	2_9
ANNUAL	Res_Highest_Dust6	587176.8	4161435.88	Res_Highest_Dust6D_2_9	0.00447	0.00789	0.00621	0.07310	2_9
ANNUAL	Res_Highest_Dust7	586676.97	4161666.66	Res_Highest_Dust7D_2_9	0.00009	0.00444	0.07754	0.07769	2_9
ANNUAL	Res_Highest_Dust8	587036.8	4161575.88	Res_Highest_Dust8D_2_9	0.00250	0.00555	0.10668	0.11223	2_9
ANNUAL	Park_Highest_Dust9	586796.8	4161655.88	Park_Highest_Dust9D_2_9	0.00313	0.00697	0.10163	0.10860	2_9

Summary of Onsite Mitigated Cancer and Noncancer Health Risks and PM2.5 Concentrations for the MEI

Receptor	Cancer Risk (per million)	Chronic HI	PM2.5 (ug/m3)
MEI	3.57	0.002	0.21
Threshold	10.00	1.00	0.30

	DPM Reduction With Mitigation	DPM Reduction With Mitigatoion	PM2.5 Reduction With Mitigation
Reduction	90%	90%	17%
MEI (Unmitigated)	35.6	0.021	0.259

Receptors					Concentration ug/m3			Dose Inhalation by Bin			Cancer Risk by Bin			Sum of Cancer Risk		Chronic HI (max annual)	Max PM2.5 Total (ug/m3)
Rec ID	Detail	X	Y	Type	3RDTRI	0_2	2_9	3RDTRI	0_2	2_9	3RDTRI	0_2	2_9	Summed Risk	Cases Per Million		
Res_Highest_DPM1	Residence	586972.88	4161357.87	Residential	4.26E-03	1.05E-02	6.24E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.5E-06	5.2E-08	4E-06	3.57	0.0021	0.0282
Res_Highest_DPM2	Residence	586972.88	4161357.87	Residential	4.25E-03	1.05E-02	6.23E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.56	0.0021	0.0277
Res_Highest_DPM3	Residence	586952.88	4161357.87	Residential	4.25E-03	1.05E-02	6.22E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.56	0.0021	0.0287
Res_Highest_DPM4	Residence	586972.88	4161357.87	Residential	4.26E-03	1.05E-02	6.24E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.5E-06	5.2E-08	4E-06	3.57	0.0021	0.0282
Res_Highest_DPM5	Residence	586972.88	4161357.87	Residential	4.25E-03	1.05E-02	6.23E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.56	0.0021	0.0277
Res_Highest_DPM6	Residence	586952.88	4161357.87	Residential	4.25E-03	1.05E-02	6.22E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.56	0.0021	0.0287
Res_Highest_DPM7	Residence	586972.88	4161357.87	Residential	4.26E-03	1.05E-02	6.24E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.5E-06	5.2E-08	4E-06	3.57	0.0021	0.0282
Res_Highest_DPM8	Residence	586972.88	4161357.87	Residential	4.25E-03	1.05E-02	6.23E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.56	0.0021	0.0277
Res_Highest_DPM9	Residence	586992.88	4161357.87	Residential	4.25E-03	1.05E-02	6.23E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.56	0.0021	0.0277
Res_Highest_PM1	Residence	586952.88	4161357.87	Residential	4.25E-03	1.05E-02	6.22E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.56	0.0021	0.0287
Res_Highest_PM2	Residence	586972.88	4161357.87	Residential	4.26E-03	1.05E-02	6.24E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.5E-06	5.2E-08	4E-06	3.57	0.0021	0.0282
Res_Highest_PM3	Residence	586952.88	4161357.87	Residential	4.24E-03	1.05E-02	6.21E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.55	0.0021	0.0282
Res_Highest_PM4	Residence	586972.88	4161357.87	Residential	4.26E-03	1.05E-02	6.24E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.5E-06	5.2E-08	4E-06	3.57	0.0021	0.0282
Res_Highest_PM5	Residence	586972.88	4161357.87	Residential	4.25E-03	1.05E-02	6.23E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.56	0.0021	0.0277
Res_Highest_PM6	Residence	586952.88	4161357.87	Residential	4.25E-03	1.05E-02	6.22E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.56	0.0021	0.0287
Res_Highest_PM7	Residence	586972.88	4161357.87	Residential	4.26E-03	1.05E-02	6.24E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.5E-06	5.2E-08	4E-06	3.57	0.0021	0.0282
Res_Highest_PM8	Residence	586972.88	4161357.87	Residential	4.25E-03	1.05E-02	6.23E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.56	0.0021	0.0277
Res_Highest_PM9	Residence	586952.88	4161357.87	Residential	4.25E-03	1.05E-02	6.22E-03	1.5E-06	1.1E-05	3.8E-06	5.8E-08	3.4E-06	5.2E-08	4E-06	3.56	0.0021	0.0287
Res_Highest_Dust1	Residence	586772.88	4161637.87	Residential	2.22E-03	5.49E-03	3.26E-03	7.7E-07	5.7E-06	2.0E-06	3.0E-08	1.8E-06	2.7E-08	2E-06	1.86	0.0011	0.2148
Res_Highest_Dust2	Residence	586712.88	4161637.87	Residential	8.80E-04	2.17E-03	1.29E-03	3.0E-07	2.3E-06	7.8E-07	1.2E-08	7.1E-07	1.1E-08	7E-07	0.74	0.0004	0.2068
Res_Highest_Dust3	Residence	586692.88	4161557.87	Residential	1.09E-03	2.68E-03	1.59E-03	3.8E-07	2.8E-06	9.6E-07	1.5E-08	8.8E-07	1.3E-08	9E-07	0.91	0.0005	0.2050
Res_Highest_Dust4	Residence	586772.88	4161637.87	Residential	2.22E-03	5.49E-03	3.26E-03	7.7E-07	5.7E-06	2.0E-06	3.0E-08	1.8E-06	2.7E-08	2E-06	1.86	0.0011	0.2148
Res_Highest_Dust5	Residence	586712.88	4161637.87	Residential	8.80E-04	2.17E-03	1.29E-03	3.0E-07	2.3E-06	7.8E-07	1.2E-08	7.1E-07	1.1E-08	7E-07	0.74	0.0004	0.2068
Res_Highest_Dust6	Residence	586692.88	4161557.87	Residential	1.09E-03	2.68E-03	1.59E-03	3.8E-07	2.8E-06	9.6E-07	1.5E-08	8.8E-07	1.3E-08	9E-07	0.91	0.0005	0.2050
Res_Highest_Dust7	Residence	586772.88	4161637.87	Residential	2.22E-03	5.49E-03	3.26E-03	7.7E-07	5.7E-06	2.0E-06	3.0E-08	1.8E-06	2.7E-08	2E-06	1.86	0.0011	0.2148
Res_Highest_Dust8	Residence	586712.88	4161637.87	Residential	8.80E-04	2.17E-03	1.29E-03	3.0E-07	2.3E-06	7.8E-07	1.2E-08	7.1E-07	1.1E-08	7E-07	0.74	0.0004	0.2068
Res_Highest_Dust9	Residence	586692.88	4161557.87	Residential	1.09E-03	2.68E-03	1.59E-03	3.8E-07	2.8E-06	9.6E-07	1.5E-08	8.8E-07	1.3E-08	9E-07	0.91	0.0005	0.2050
														3.57	0.0021	0.2148	

DPM SUMMARY (g/sec/m2)

Source	3rd tri	0+2	2+9
ONSITE	2.90E-09	7.16E-09	4.25E-09
ONSITE - UPRR	0.00E+00	0.00E+00	0.00E+00
OFFSITE	2.17E-12	4.42E-12	2.24E-12
OFFSITE - UPRR	0.00E+00	0.00E+00	0.00E+00

ASSUMPTIONS

	onsite	offsite	
Area Project Site	110,546.50	35896.5	m2
Area UPRR	319.6	21609.6	
AERMOD segment (Phase 1+2)	2393.1	meters	
AERMOD segment (UPRR)	675.3	meters	
meters to mile	0.000621371		

PM2.5 Ex SUMMARY (g/sec/m2)

Source	3rd tri	0+2	2+3
ONSITE	2.90E-09	1.10E-08	8.13E-09
ONSITE - UPRR	0.00E+00	0.00E+00	0.00E+00
OFFSITE	1.34E-09	2.09E-09	7.50E-10
OFFSITE - UPRR	0.00E+00	0.00E+00	0.00E+00

ASSUMPTIONS

	onsite	offsite	
Area Project Site	110,546.50	35896.5	m2
Area UPRR	319.6	21609.6	
AERMOD segment (Phase 1+2)	2393.1	meters	
AERMOD segment (UPRR)	675.3	meters	
meters to mile	0.000621371		

PM2.5 DUST SUMMARY (g/sec/m2)

Source	3rd tri	0+2	2+9
ONSITE	0.00E+00	0.00E+00	0.00E+00
ONSITE - UPRR	0.00E+00	0.00E+00	0.00E+00
OFFSITE	6.34E-08	9.96E-08	3.63E-08
OFFSITE - UPRR	0.00E+00	0.00E+00	0.00E+00

ASSUMPTIONS

	onsite	offsite	
Area Project Site	110,546.50	35896.5	m2
Area UPRR	319.6	21609.6	
AERMOD segment (Phase 1+2)	2393.1	meters	
AERMOD segment (UPRR)	675.3	meters	
meters to mile	0.000621371		

Health Risk - Dose and Risk Factors and Values

Dose factors

$$\text{Dose}_{\text{air}} = C_{\text{air}} \times (\text{BR}/\text{BW}) \times A \times \text{EF} \times 10^4$$

$$\text{Dose}_{\text{air}} = (C_{\text{air}} \times \text{WAF}) \times (\text{BR}/\text{BW}) \times A \times \text{EF} \times 10^4$$

	3rd trimester	0<2	2<9	2<16	16<30	16-70	source
Daily Breath Rate (BR/BW) (L/kg-day)							
Residential	361	1090	631	572	261	233	OEHHA 2015, Table 5.6, 95th %ile for 3rdtri-2yrs old; 80th for other age groups
Recreational	240	1200	640	520	240	230	OEHHA 2015, Table 5.8 (95th, moderate) for all bins but 3rd tri, which was taken from SIVAPCD's draft guidance
School	240	1200	640	520	240	230	SIVAPCD for 3rd tri; 95th percentile for all
A	1	1	1	1	1	1	OEHHA 2015, page 5-24
EF, Exposure frequency (unitless), days/365 days							
Residential	0.96	0.96	0.96	0.96	0.96	0.96	OEHHA 2015, page 5-24, 350 days/yr
Recreational	0.036	0.036	0.036	0.036	0.036	0.036	3x/week, 2 hours/day, for 9 years
School	0.12	0.12	0.12	0.12	0.12	0.12	180 days/yr, 6 hours/day (BAAQMD 2016)
Conversion Factor	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	(mg/ug + m3/L)

Risk factors

$$\text{RISK}_{\text{inh-res}} = \text{Dose}_{\text{air}} \times \text{CPF} \times \text{ASF} \times \text{ED}/\text{AT} \times \text{FAH}$$

	3rd trimester	0<2	2<9	2<16	16<30	16-70	source
CPF, DPM ((mg/kg-day) ⁻¹)	1.1	1.1	1.1	1.1	1.1	1.1	OEHHA 2015, Table 7.1
Average Age Sensitivity Factor	10	10	3	3	1	1	OEHHA 2015, Table 8.3
AT, Average Time (days)	70	70	70	70	70	70	Averaging time for lifetime cancer risk
FAH	1.00	1.00	1.00	1.00	1.00	1.00	OEHHA 2015, Table 8.4: Use FAH = 1 if a school is within the 1×10 ⁻⁶ (or greater) cancer risk isopleth
ED, Exposure Duration (years)	0.25	2	0.3	-	-	-	Equation 8.2.4 A, OEHHA 2015
Adjustment Factor							
Residential	1.00	1.00	1.00	1.00	1.00	1.00	OEHHA 2015, Page 4-44 and Equation 4.1; exposure is adjusted upward to account for overlapping daytime exposure.
Recreational	3.36	3.36	3.36	3.36	3.36	3.36	
School	3.36	3.36	3.36	3.36	3.36	3.36	

Hazard Index

Chronic Inhalation Reference Exposure Level, respiratory, DPM

5

OEHHA 2015, Table 6.3

Source Inputs

Union City Population 75,343

Alameda County Population 1,663,000

offroad sources

Release Height (RH) 4.1 m

Vertical Dimension 3.81 m

Elevation 0 m

onroad/truck sources

Release Height (RH) 3.4 m EPA PM Hostpot, Appx J

Vertical Dimension 3.16 m CAPCOA 2009/AERMOD (RH/2.15)

Elevation 0 m

receptor height (m) 0 Default

Met from Oakland Airport

PM2.5 Exhaust (Offroad+Hauling+Vendor)= DPM

Operational Risk Calcs

		3rd trimester	0<2	2<9	2<16	16<30	16-70	Total
Receptor Type	Residential							
AERMOD CONCENTRATION (ug/m^3)	0.00005							
Dose		1.73E-08	5.23E-08	3.03E-08	2.74E-08	1.25E-08		
Risk		0.00	1.64E-08	0.00E+00	1.81E-08	2.75E-09	0.00E+00	3.8E-08
Risk per million		0.00	0.016	0.00	0.02	0.00	0.00	0.04
Chronic HI		-	-	-	-	-	-	0.000010
PM2.5		-	-	-	-	-	-	0.00005

DPM HRA Factors and values - Construction

Dose _{air} = C _{air} × (IR/EN) × A × EF × 10 ⁻⁶									
Dose fa			3rd trimester	0<2	2<9	9<16	16<30	16-70	source
	Dose factors for calcs -->	Residential	3.46E-04	1.05E-03	6.05E-04	5.48E-04	2.50E-04	2.23E-04	dose factors for lookup in risk calcs
Daily Breath Rate (L/kg-day)		Residential	361	1090	631	572	261	233	OEHHA 2015, Table 5.6, 95th %ile for 3rdtri-2yrs old; 80th for other age groups
A			1	1	1	1	1	1	OEHHA 2015, page 5-24
EF, Exposure frequency (unitless), days/365 days		Residential	0.96	0.96	0.96	0.96	0.96	0.96	OEHHA 2015, page 5-24, 350 days/yr
Conversion Factor			1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	(mg/ug + m3/L)

Risk Fac	RISK _{inh-ss} = Dose _{air} × CPF × ASF × ED/AT × FAH							
	Risk factors for calcs ---->							
	Residential	3.93E-02	3.14E-01	0.00E+00	6.60E-01	2.20E-01	0.00E+00	risk factors for lookup in risk calcs
CPF, DPM [(mg/kg-day) ⁻¹]		1.1	1.1	1.1	1.1	1.1	1.1	OEHHA 2015, Table 7.1
Average Age Sensitivity Factor		10	10	3	3	1	1	OEHHA 2015, Table 8.3
AT, Average Time (years)		70	70	70	70	70	70	Averaging time for lifetime cancer risk
FAH		1.00	1.00	1.00	1.00	1.00	1.00	OEHHA 2015, Table 8.4: Use FAH = 1 if a school is within the 1x10-6 (or greater) cancer risk isopleth
ED, Exposure Duration (years)	Residential	0.25	2.00		14	14	0	OEHHA 2015, Table 6.3

Chronic Inhalation Reference Exposure Level, respiratory, DPM	5
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* AERMOD ( 19191): C:\USERS\35578\DESKTOP\STATION EAST
CONSTRUCTION HRA_1\STATION EAST      04/20/20
* AERMET ( 14134):
12:30:06
* MODELING OPTIONS USED:   RegDFAULT  CONC  ELEV  URBAN
*       PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS    5 YEARS
FOR SOURCE GROUP: ALL
*       FOR A TOTAL OF 1912 RECEPTORS.
*       FORMAT:
(3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,I8.8,2X,A8)
*       X           Y           AVERAGE CONC           ZELEV           ZHILL
ZFLAG      AVE      GRP      NUM YRS      NET ID
*

```

587419.49000	4161213.83000	0.00001	17.72	192.17
0.00 ANNUAL ALL	00000005			
587419.49000	4161233.83000	0.00001	18.08	192.17
0.00 ANNUAL ALL	00000005			
587439.49000	4161233.83000	0.00001	18.32	192.17
0.00 ANNUAL ALL	00000005			
587419.49000	4161253.83000	0.00001	18.14	192.17
0.00 ANNUAL ALL	00000005			
587439.49000	4161253.83000	0.00001	18.36	192.17
0.00 ANNUAL ALL	00000005			
587459.49000	4161253.83000	0.00001	18.26	192.17
0.00 ANNUAL ALL	00000005			
587419.49000	4161273.83000	0.00001	17.86	192.17
0.00 ANNUAL ALL	00000005			
587439.49000	4161273.83000	0.00001	18.15	192.17
0.00 ANNUAL ALL	00000005			
587459.49000	4161273.83000	0.00001	18.47	192.17
0.00 ANNUAL ALL	00000005			
587479.49000	4161273.83000	0.00001	19.17	192.17
0.00 ANNUAL ALL	00000005			
587419.49000	4161293.83000	0.00001	18.42	192.17
0.00 ANNUAL ALL	00000005			
587439.49000	4161293.83000	0.00001	18.49	192.17
0.00 ANNUAL ALL	00000005			
587459.49000	4161293.83000	0.00001	18.96	192.17
0.00 ANNUAL ALL	00000005			
587479.49000	4161293.83000	0.00001	19.52	192.17
0.00 ANNUAL ALL	00000005			
587499.49000	4161293.83000	0.00001	19.97	192.17
0.00 ANNUAL ALL	00000005			
587419.49000	4161313.83000	0.00001	19.10	192.17
0.00 ANNUAL ALL	00000005			
587439.49000	4161313.83000	0.00001	19.08	192.17
0.00 ANNUAL ALL	00000005			
587459.49000	4161313.83000	0.00001	19.51	192.17
0.00 ANNUAL ALL	00000005			
587479.49000	4161313.83000	0.00001	19.91	192.17
0.00 ANNUAL ALL	00000005			

587499.49000	4161313.83000	0.00001	20.23	192.17
0.00	ANNUAL ALL 00000005			
587519.49000	4161313.83000	0.00001	21.55	192.17
0.00	ANNUAL ALL 00000005			
587419.49000	4161333.83000	0.00001	19.51	192.17
0.00	ANNUAL ALL 00000005			
587439.49000	4161333.83000	0.00001	19.54	192.17
0.00	ANNUAL ALL 00000005			
587459.49000	4161333.83000	0.00001	19.81	192.17
0.00	ANNUAL ALL 00000005			
587479.49000	4161333.83000	0.00001	20.27	192.17
0.00	ANNUAL ALL 00000005			
587499.49000	4161333.83000	0.00001	21.27	192.17
0.00	ANNUAL ALL 00000005			
587519.49000	4161333.83000	0.00001	21.71	192.17
0.00	ANNUAL ALL 00000005			
587539.49000	4161333.83000	0.00001	21.26	192.17
0.00	ANNUAL ALL 00000005			
587419.49000	4161353.83000	0.00001	19.35	192.17
0.00	ANNUAL ALL 00000005			
587439.49000	4161353.83000	0.00001	19.72	192.17
0.00	ANNUAL ALL 00000005			
587459.49000	4161353.83000	0.00001	20.30	192.17
0.00	ANNUAL ALL 00000005			
587479.49000	4161353.83000	0.00001	21.17	192.17
0.00	ANNUAL ALL 00000005			
587499.49000	4161353.83000	0.00001	21.55	192.17
0.00	ANNUAL ALL 00000005			
587519.49000	4161353.83000	0.00001	21.16	192.17
0.00	ANNUAL ALL 00000005			
587539.49000	4161353.83000	0.00001	21.40	192.17
0.00	ANNUAL ALL 00000005			
587559.49000	4161353.83000	0.00001	21.86	192.17
0.00	ANNUAL ALL 00000005			
587419.49000	4161373.83000	0.00001	19.57	192.17
0.00	ANNUAL ALL 00000005			
587439.49000	4161373.83000	0.00001	20.18	192.17
0.00	ANNUAL ALL 00000005			
587459.49000	4161373.83000	0.00001	20.90	192.17
0.00	ANNUAL ALL 00000005			
587479.49000	4161373.83000	0.00001	21.47	192.17
0.00	ANNUAL ALL 00000005			
587499.49000	4161373.83000	0.00001	21.15	192.17
0.00	ANNUAL ALL 00000005			
587519.49000	4161373.83000	0.00001	21.26	192.17
0.00	ANNUAL ALL 00000005			
587539.49000	4161373.83000	0.00001	21.79	192.17
0.00	ANNUAL ALL 00000005			
587419.49000	4161393.83000	0.00001	20.07	192.17
0.00	ANNUAL ALL 00000005			
587439.49000	4161393.83000	0.00001	20.76	192.17
0.00	ANNUAL ALL 00000005			

587459.49000	4161393.83000	0.00001	21.38	192.17
0.00	ANNUAL ALL 00000005			
587479.49000	4161393.83000	0.00001	21.07	192.17
0.00	ANNUAL ALL 00000005			
587499.49000	4161393.83000	0.00001	21.11	192.17
0.00	ANNUAL ALL 00000005			
587519.49000	4161393.83000	0.00001	21.62	192.17
0.00	ANNUAL ALL 00000005			
587539.49000	4161393.83000	0.00001	22.86	192.17
0.00	ANNUAL ALL 00000005			
586777.58000	4161816.47000	0.00001	23.05	192.17
0.00	ANNUAL ALL 00000005			
586797.58000	4161816.47000	0.00001	22.65	192.17
0.00	ANNUAL ALL 00000005			
586817.58000	4161816.47000	0.00001	22.31	192.17
0.00	ANNUAL ALL 00000005			
586837.58000	4161816.47000	0.00001	22.06	192.17
0.00	ANNUAL ALL 00000005			
586857.58000	4161816.47000	0.00001	21.80	192.17
0.00	ANNUAL ALL 00000005			
586877.58000	4161816.47000	0.00001	22.02	192.17
0.00	ANNUAL ALL 00000005			
586897.58000	4161816.47000	0.00001	21.92	192.17
0.00	ANNUAL ALL 00000005			
586917.58000	4161816.47000	0.00001	21.80	192.17
0.00	ANNUAL ALL 00000005			
586937.58000	4161816.47000	0.00001	21.51	192.17
0.00	ANNUAL ALL 00000005			
586957.58000	4161816.47000	0.00001	21.31	192.17
0.00	ANNUAL ALL 00000005			
586977.58000	4161816.47000	0.00001	21.63	192.17
0.00	ANNUAL ALL 00000005			
586997.58000	4161816.47000	0.00001	21.50	192.17
0.00	ANNUAL ALL 00000005			
587017.58000	4161816.47000	0.00001	21.31	192.17
0.00	ANNUAL ALL 00000005			
587037.58000	4161816.47000	0.00001	21.69	192.17
0.00	ANNUAL ALL 00000005			
587057.58000	4161816.47000	0.00001	21.57	192.17
0.00	ANNUAL ALL 00000005			
587077.58000	4161816.47000	0.00001	21.20	192.17
0.00	ANNUAL ALL 00000005			
587097.58000	4161816.47000	0.00001	20.67	192.17
0.00	ANNUAL ALL 00000005			
587117.58000	4161816.47000	0.00001	20.70	192.17
0.00	ANNUAL ALL 00000005			
587137.58000	4161816.47000	0.00001	21.05	192.17
0.00	ANNUAL ALL 00000005			
586797.58000	4161836.47000	0.00001	22.88	192.17
0.00	ANNUAL ALL 00000005			
586817.58000	4161836.47000	0.00001	22.40	192.17
0.00	ANNUAL ALL 00000005			

586837.58000	4161836.47000	0.00001	22.56	192.17
0.00	ANNUAL ALL 00000005			
586857.58000	4161836.47000	0.00001	22.45	192.17
0.00	ANNUAL ALL 00000005			
586877.58000	4161836.47000	0.00001	22.50	192.17
0.00	ANNUAL ALL 00000005			
586897.58000	4161836.47000	0.00001	22.21	192.17
0.00	ANNUAL ALL 00000005			
586917.58000	4161836.47000	0.00001	21.98	192.17
0.00	ANNUAL ALL 00000005			
586937.58000	4161836.47000	0.00001	21.54	192.17
0.00	ANNUAL ALL 00000005			
586957.58000	4161836.47000	0.00001	22.00	192.17
0.00	ANNUAL ALL 00000005			
586977.58000	4161836.47000	0.00001	21.67	192.17
0.00	ANNUAL ALL 00000005			
586997.58000	4161836.47000	0.00001	21.46	192.17
0.00	ANNUAL ALL 00000005			
587017.58000	4161836.47000	0.00001	21.85	192.17
0.00	ANNUAL ALL 00000005			
587037.58000	4161836.47000	0.00001	21.68	192.17
0.00	ANNUAL ALL 00000005			
587057.58000	4161836.47000	0.00001	21.31	192.17
0.00	ANNUAL ALL 00000005			
587077.58000	4161836.47000	0.00001	20.84	192.17
0.00	ANNUAL ALL 00000005			
587097.58000	4161836.47000	0.00001	20.91	192.17
0.00	ANNUAL ALL 00000005			
587117.58000	4161836.47000	0.00001	21.16	192.17
0.00	ANNUAL ALL 00000005			
586797.58000	4161856.47000	0.00001	22.95	192.17
0.00	ANNUAL ALL 00000005			
586817.58000	4161856.47000	0.00001	22.72	192.17
0.00	ANNUAL ALL 00000005			
586837.58000	4161856.47000	0.00001	23.12	192.17
0.00	ANNUAL ALL 00000005			
586857.58000	4161856.47000	0.00001	22.79	192.17
0.00	ANNUAL ALL 00000005			
586877.58000	4161856.47000	0.00001	22.72	192.17
0.00	ANNUAL ALL 00000005			
586897.58000	4161856.47000	0.00001	22.65	192.17
0.00	ANNUAL ALL 00000005			
586917.58000	4161856.47000	0.00001	22.18	192.17
0.00	ANNUAL ALL 00000005			
586937.58000	4161856.47000	0.00001	21.87	192.17
0.00	ANNUAL ALL 00000005			
586957.58000	4161856.47000	0.00001	21.73	192.17
0.00	ANNUAL ALL 00000005			
586977.58000	4161856.47000	0.00001	21.68	192.17
0.00	ANNUAL ALL 00000005			
586997.58000	4161856.47000	0.00001	22.24	192.17
0.00	ANNUAL ALL 00000005			

587017.58000	4161856.47000	0.00001	22.00	192.17
0.00	ANNUAL ALL 000000005			
587037.58000	4161856.47000	0.00001	21.30	192.17
0.00	ANNUAL ALL 000000005			
587057.58000	4161856.47000	0.00001	20.90	192.17
0.00	ANNUAL ALL 000000005			
587077.58000	4161856.47000	0.00001	20.80	192.17
0.00	ANNUAL ALL 000000005			
587097.58000	4161856.47000	0.00001	21.49	192.17
0.00	ANNUAL ALL 000000005			
587117.58000	4161856.47000	0.00001	22.02	192.17
0.00	ANNUAL ALL 000000005			
586797.58000	4161876.47000	0.00001	23.56	192.17
0.00	ANNUAL ALL 000000005			
586817.58000	4161876.47000	0.00001	23.15	192.17
0.00	ANNUAL ALL 000000005			
586837.58000	4161876.47000	0.00001	23.47	192.17
0.00	ANNUAL ALL 000000005			
586857.58000	4161876.47000	0.00001	23.24	192.17
0.00	ANNUAL ALL 000000005			
586877.58000	4161876.47000	0.00001	23.30	192.17
0.00	ANNUAL ALL 000000005			
586897.58000	4161876.47000	0.00001	23.13	192.17
0.00	ANNUAL ALL 000000005			
586917.58000	4161876.47000	0.00001	22.55	192.17
0.00	ANNUAL ALL 000000005			
586937.58000	4161876.47000	0.00001	22.11	192.17
0.00	ANNUAL ALL 000000005			
586957.58000	4161876.47000	0.00001	21.90	192.17
0.00	ANNUAL ALL 000000005			
586977.58000	4161876.47000	0.00001	22.39	192.17
0.00	ANNUAL ALL 000000005			
586997.58000	4161876.47000	0.00001	22.50	192.17
0.00	ANNUAL ALL 000000005			
587017.58000	4161876.47000	0.00001	21.67	192.17
0.00	ANNUAL ALL 000000005			
587037.58000	4161876.47000	0.00001	21.20	192.17
0.00	ANNUAL ALL 000000005			
587057.58000	4161876.47000	0.00001	20.84	192.17
0.00	ANNUAL ALL 000000005			
587077.58000	4161876.47000	0.00001	21.35	192.17
0.00	ANNUAL ALL 000000005			
587097.58000	4161876.47000	0.00001	21.98	192.17
0.00	ANNUAL ALL 000000005			
586797.58000	4161896.47000	0.00001	23.84	192.17
0.00	ANNUAL ALL 000000005			
586817.58000	4161896.47000	0.00001	23.50	192.17
0.00	ANNUAL ALL 000000005			
586837.58000	4161896.47000	0.00001	23.59	192.17
0.00	ANNUAL ALL 000000005			
586857.58000	4161896.47000	0.00001	23.80	192.17
0.00	ANNUAL ALL 000000005			

586877.58000	4161896.47000	0.00001	23.77	192.17
0.00	ANNUAL ALL 00000005			
586897.58000	4161896.47000	0.00001	23.38	192.17
0.00	ANNUAL ALL 00000005			
586917.58000	4161896.47000	0.00001	22.74	192.17
0.00	ANNUAL ALL 00000005			
586937.58000	4161896.47000	0.00001	22.17	192.17
0.00	ANNUAL ALL 00000005			
586957.58000	4161896.47000	0.00001	22.48	192.17
0.00	ANNUAL ALL 00000005			
586977.58000	4161896.47000	0.00001	22.60	192.17
0.00	ANNUAL ALL 00000005			
586997.58000	4161896.47000	0.00001	21.81	192.17
0.00	ANNUAL ALL 00000005			
587017.58000	4161896.47000	0.00001	21.30	192.17
0.00	ANNUAL ALL 00000005			
587037.58000	4161896.47000	0.00001	20.93	192.17
0.00	ANNUAL ALL 00000005			
587057.58000	4161896.47000	0.00001	21.32	192.17
0.00	ANNUAL ALL 00000005			
587077.58000	4161896.47000	0.00001	21.92	192.17
0.00	ANNUAL ALL 00000005			
586797.58000	4161916.47000	0.00000	24.08	192.17
0.00	ANNUAL ALL 00000005			
586817.58000	4161916.47000	0.00000	23.76	192.17
0.00	ANNUAL ALL 00000005			
586837.58000	4161916.47000	0.00000	23.95	192.17
0.00	ANNUAL ALL 00000005			
586857.58000	4161916.47000	0.00000	24.10	192.17
0.00	ANNUAL ALL 00000005			
586877.58000	4161916.47000	0.00000	24.08	192.17
0.00	ANNUAL ALL 00000005			
586897.58000	4161916.47000	0.00000	24.07	192.17
0.00	ANNUAL ALL 00000005			
586917.58000	4161916.47000	0.00001	23.51	192.17
0.00	ANNUAL ALL 00000005			
586937.58000	4161916.47000	0.00001	22.46	192.17
0.00	ANNUAL ALL 00000005			
586957.58000	4161916.47000	0.00001	22.88	192.17
0.00	ANNUAL ALL 00000005			
586977.58000	4161916.47000	0.00001	22.11	192.17
0.00	ANNUAL ALL 00000005			
586997.58000	4161916.47000	0.00001	21.53	192.17
0.00	ANNUAL ALL 00000005			
587017.58000	4161916.47000	0.00001	20.96	192.17
0.00	ANNUAL ALL 00000005			
587037.58000	4161916.47000	0.00001	21.49	192.17
0.00	ANNUAL ALL 00000005			
587057.58000	4161916.47000	0.00001	21.91	192.17
0.00	ANNUAL ALL 00000005			
586817.58000	4161936.47000	0.00000	24.20	192.17
0.00	ANNUAL ALL 00000005			

586837.58000	4161936.47000	0.00000	24.07	192.17
0.00	ANNUAL ALL 000000005			
586857.58000	4161936.47000	0.00000	24.04	192.17
0.00	ANNUAL ALL 000000005			
586877.58000	4161936.47000	0.00000	24.13	192.17
0.00	ANNUAL ALL 000000005			
586897.58000	4161936.47000	0.00000	24.05	192.17
0.00	ANNUAL ALL 000000005			
586917.58000	4161936.47000	0.00000	23.90	192.17
0.00	ANNUAL ALL 000000005			
586937.58000	4161936.47000	0.00000	22.70	192.17
0.00	ANNUAL ALL 000000005			
586957.58000	4161936.47000	0.00000	22.46	192.17
0.00	ANNUAL ALL 000000005			
586977.58000	4161936.47000	0.00000	21.99	192.17
0.00	ANNUAL ALL 000000005			
586997.58000	4161936.47000	0.00000	21.22	192.17
0.00	ANNUAL ALL 000000005			
587017.58000	4161936.47000	0.00000	21.59	192.17
0.00	ANNUAL ALL 000000005			
587037.58000	4161936.47000	0.00000	21.98	192.17
0.00	ANNUAL ALL 000000005			
586817.58000	4161956.47000	0.00000	24.28	192.17
0.00	ANNUAL ALL 000000005			
586837.58000	4161956.47000	0.00000	24.11	192.17
0.00	ANNUAL ALL 000000005			
586857.58000	4161956.47000	0.00000	23.87	192.17
0.00	ANNUAL ALL 000000005			
586877.58000	4161956.47000	0.00000	23.74	192.17
0.00	ANNUAL ALL 000000005			
586897.58000	4161956.47000	0.00000	23.99	192.17
0.00	ANNUAL ALL 000000005			
586917.58000	4161956.47000	0.00000	24.07	192.17
0.00	ANNUAL ALL 000000005			
586937.58000	4161956.47000	0.00000	23.04	192.17
0.00	ANNUAL ALL 000000005			
586957.58000	4161956.47000	0.00000	22.42	192.17
0.00	ANNUAL ALL 000000005			
586977.58000	4161956.47000	0.00000	21.74	192.17
0.00	ANNUAL ALL 000000005			
586997.58000	4161956.47000	0.00000	21.94	192.17
0.00	ANNUAL ALL 000000005			
587017.58000	4161956.47000	0.00000	22.22	192.17
0.00	ANNUAL ALL 000000005			
586797.58000	4161976.47000	0.00000	24.57	192.17
0.00	ANNUAL ALL 000000005			
586817.58000	4161976.47000	0.00000	24.11	192.17
0.00	ANNUAL ALL 000000005			
586837.58000	4161976.47000	0.00000	24.14	192.17
0.00	ANNUAL ALL 000000005			
586857.58000	4161976.47000	0.00000	23.76	192.17
0.00	ANNUAL ALL 000000005			

586877.58000	4161976.47000	0.00000	23.98	192.17
0.00	ANNUAL ALL 000000005			
586897.58000	4161976.47000	0.00000	24.08	192.17
0.00	ANNUAL ALL 000000005			
586917.58000	4161976.47000	0.00000	24.13	192.17
0.00	ANNUAL ALL 000000005			
586937.58000	4161976.47000	0.00000	23.58	192.17
0.00	ANNUAL ALL 000000005			
586957.58000	4161976.47000	0.00000	22.40	192.17
0.00	ANNUAL ALL 000000005			
586977.58000	4161976.47000	0.00000	22.52	192.17
0.00	ANNUAL ALL 000000005			
586997.58000	4161976.47000	0.00000	22.50	192.17
0.00	ANNUAL ALL 000000005			
586817.58000	4161996.47000	0.00000	24.10	192.17
0.00	ANNUAL ALL 000000005			
586837.58000	4161996.47000	0.00000	24.13	192.17
0.00	ANNUAL ALL 000000005			
586857.58000	4161996.47000	0.00000	24.35	192.17
0.00	ANNUAL ALL 000000005			
586877.58000	4161996.47000	0.00000	24.20	192.17
0.00	ANNUAL ALL 000000005			
586897.58000	4161996.47000	0.00000	24.12	192.17
0.00	ANNUAL ALL 000000005			
586917.58000	4161996.47000	0.00000	24.14	192.17
0.00	ANNUAL ALL 000000005			
586937.58000	4161996.47000	0.00000	23.66	192.17
0.00	ANNUAL ALL 000000005			
586957.58000	4161996.47000	0.00000	22.93	192.17
0.00	ANNUAL ALL 000000005			
586977.58000	4161996.47000	0.00000	23.13	192.17
0.00	ANNUAL ALL 000000005			
586817.58000	4162016.47000	0.00000	24.47	192.17
0.00	ANNUAL ALL 000000005			
586837.58000	4162016.47000	0.00000	24.16	192.17
0.00	ANNUAL ALL 000000005			
586857.58000	4162016.47000	0.00000	24.06	192.17
0.00	ANNUAL ALL 000000005			
586877.58000	4162016.47000	0.00000	24.03	192.17
0.00	ANNUAL ALL 000000005			
586817.58000	4162196.47000	0.00000	27.38	192.17
0.00	ANNUAL ALL 000000005			
586416.73000	4161818.30000	0.00000	23.00	23.00
0.00	ANNUAL ALL 000000005			
586436.73000	4161818.30000	0.00000	23.23	23.23
0.00	ANNUAL ALL 000000005			
586456.73000	4161818.30000	0.00000	23.51	24.35
0.00	ANNUAL ALL 000000005			
586476.73000	4161818.30000	0.00000	24.63	24.63
0.00	ANNUAL ALL 000000005			
586496.73000	4161818.30000	0.00000	24.10	24.10
0.00	ANNUAL ALL 000000005			

586516.73000	4161818.30000	0.00000	24.01	181.37
0.00	ANNUAL ALL 00000005			
586536.73000	4161818.30000	0.00000	23.91	181.37
0.00	ANNUAL ALL 00000005			
586556.73000	4161818.30000	0.00000	24.02	181.37
0.00	ANNUAL ALL 00000005			
586576.73000	4161818.30000	0.00001	24.35	181.37
0.00	ANNUAL ALL 00000005			
586596.73000	4161818.30000	0.00001	24.24	181.37
0.00	ANNUAL ALL 00000005			
586616.73000	4161818.30000	0.00001	24.07	191.71
0.00	ANNUAL ALL 00000005			
586636.73000	4161818.30000	0.00001	24.01	192.17
0.00	ANNUAL ALL 00000005			
586656.73000	4161818.30000	0.00001	23.79	192.17
0.00	ANNUAL ALL 00000005			
586676.73000	4161818.30000	0.00001	23.75	192.17
0.00	ANNUAL ALL 00000005			
586696.73000	4161818.30000	0.00001	23.37	192.17
0.00	ANNUAL ALL 00000005			
586716.73000	4161818.30000	0.00001	23.54	192.17
0.00	ANNUAL ALL 00000005			
586436.73000	4161838.30000	0.00000	23.31	23.31
0.00	ANNUAL ALL 00000005			
586456.73000	4161838.30000	0.00000	24.08	24.08
0.00	ANNUAL ALL 00000005			
586476.73000	4161838.30000	0.00000	24.93	24.93
0.00	ANNUAL ALL 00000005			
586496.73000	4161838.30000	0.00000	24.79	24.79
0.00	ANNUAL ALL 00000005			
586516.73000	4161838.30000	0.00000	24.18	181.37
0.00	ANNUAL ALL 00000005			
586536.73000	4161838.30000	0.00000	24.08	181.37
0.00	ANNUAL ALL 00000005			
586556.73000	4161838.30000	0.00000	24.21	181.37
0.00	ANNUAL ALL 00000005			
586576.73000	4161838.30000	0.00000	24.57	181.37
0.00	ANNUAL ALL 00000005			
586596.73000	4161838.30000	0.00001	24.79	181.37
0.00	ANNUAL ALL 00000005			
586616.73000	4161838.30000	0.00001	24.26	192.17
0.00	ANNUAL ALL 00000005			
586636.73000	4161838.30000	0.00001	24.13	192.17
0.00	ANNUAL ALL 00000005			
586656.73000	4161838.30000	0.00001	24.02	192.17
0.00	ANNUAL ALL 00000005			
586676.73000	4161838.30000	0.00001	23.95	192.17
0.00	ANNUAL ALL 00000005			
586696.73000	4161838.30000	0.00001	23.61	192.17
0.00	ANNUAL ALL 00000005			
586716.73000	4161838.30000	0.00001	23.84	192.17
0.00	ANNUAL ALL 00000005			

586736.73000	4161838.30000	0.00001	23.45	192.17
0.00	ANNUAL ALL 00000005			
586776.73000	4161838.30000	0.00001	23.17	192.17
0.00	ANNUAL ALL 00000005			
586456.73000	4161858.30000	0.00000	23.84	23.84
0.00	ANNUAL ALL 00000005			
586476.73000	4161858.30000	0.00000	24.57	24.57
0.00	ANNUAL ALL 00000005			
586496.73000	4161858.30000	0.00000	24.67	181.17
0.00	ANNUAL ALL 00000005			
586516.73000	4161858.30000	0.00000	24.72	181.37
0.00	ANNUAL ALL 00000005			
586536.73000	4161858.30000	0.00000	24.36	181.37
0.00	ANNUAL ALL 00000005			
586556.73000	4161858.30000	0.00000	24.50	181.37
0.00	ANNUAL ALL 00000005			
586576.73000	4161858.30000	0.00000	24.80	181.37
0.00	ANNUAL ALL 00000005			
586596.73000	4161858.30000	0.00000	25.03	181.37
0.00	ANNUAL ALL 00000005			
586616.73000	4161858.30000	0.00001	24.49	192.17
0.00	ANNUAL ALL 00000005			
586636.73000	4161858.30000	0.00001	24.33	192.17
0.00	ANNUAL ALL 00000005			
586656.73000	4161858.30000	0.00001	24.13	192.17
0.00	ANNUAL ALL 00000005			
586676.73000	4161858.30000	0.00001	24.06	192.17
0.00	ANNUAL ALL 00000005			
586696.73000	4161858.30000	0.00001	23.76	192.17
0.00	ANNUAL ALL 00000005			
586716.73000	4161858.30000	0.00001	23.49	192.17
0.00	ANNUAL ALL 00000005			
586736.73000	4161858.30000	0.00001	23.34	192.17
0.00	ANNUAL ALL 00000005			
586776.73000	4161858.30000	0.00001	23.27	192.17
0.00	ANNUAL ALL 00000005			
586476.73000	4161878.30000	0.00000	24.33	24.33
0.00	ANNUAL ALL 00000005			
586496.73000	4161878.30000	0.00000	24.53	181.37
0.00	ANNUAL ALL 00000005			
586516.73000	4161878.30000	0.00000	24.92	181.37
0.00	ANNUAL ALL 00000005			
586536.73000	4161878.30000	0.00000	24.77	181.37
0.00	ANNUAL ALL 00000005			
586556.73000	4161878.30000	0.00000	24.90	181.37
0.00	ANNUAL ALL 00000005			
586576.73000	4161878.30000	0.00000	24.99	181.37
0.00	ANNUAL ALL 00000005			
586596.73000	4161878.30000	0.00000	24.83	181.37
0.00	ANNUAL ALL 00000005			
586616.73000	4161878.30000	0.00000	24.64	192.17
0.00	ANNUAL ALL 00000005			

586636.73000	4161878.30000	0.00000	24.47	192.17
0.00	ANNUAL ALL 00000005			
586656.73000	4161878.30000	0.00001	24.18	192.17
0.00	ANNUAL ALL 00000005			
586676.73000	4161878.30000	0.00001	24.13	192.17
0.00	ANNUAL ALL 00000005			
586696.73000	4161878.30000	0.00001	23.83	192.17
0.00	ANNUAL ALL 00000005			
586716.73000	4161878.30000	0.00001	23.76	192.17
0.00	ANNUAL ALL 00000005			
586736.73000	4161878.30000	0.00001	23.52	192.17
0.00	ANNUAL ALL 00000005			
586496.73000	4161898.30000	0.00000	24.62	181.37
0.00	ANNUAL ALL 00000005			
586516.73000	4161898.30000	0.00000	24.84	181.37
0.00	ANNUAL ALL 00000005			
586536.73000	4161898.30000	0.00000	24.98	181.37
0.00	ANNUAL ALL 00000005			
586556.73000	4161898.30000	0.00000	24.99	181.37
0.00	ANNUAL ALL 00000005			
586576.73000	4161898.30000	0.00000	25.06	181.37
0.00	ANNUAL ALL 00000005			
586596.73000	4161898.30000	0.00000	24.95	192.17
0.00	ANNUAL ALL 00000005			
586616.73000	4161898.30000	0.00000	24.93	192.17
0.00	ANNUAL ALL 00000005			
586636.73000	4161898.30000	0.00000	24.66	192.17
0.00	ANNUAL ALL 00000005			
586656.73000	4161898.30000	0.00000	24.36	192.17
0.00	ANNUAL ALL 00000005			
586676.73000	4161898.30000	0.00000	24.17	192.17
0.00	ANNUAL ALL 00000005			
586696.73000	4161898.30000	0.00000	24.08	192.17
0.00	ANNUAL ALL 00000005			
586716.73000	4161898.30000	0.00000	23.99	192.17
0.00	ANNUAL ALL 00000005			
586736.73000	4161898.30000	0.00000	23.70	192.17
0.00	ANNUAL ALL 00000005			
586536.73000	4161918.30000	0.00000	25.10	181.37
0.00	ANNUAL ALL 00000005			
586556.73000	4161918.30000	0.00000	25.14	181.37
0.00	ANNUAL ALL 00000005			
586576.73000	4161918.30000	0.00000	25.22	181.37
0.00	ANNUAL ALL 00000005			
586596.73000	4161918.30000	0.00000	24.96	192.17
0.00	ANNUAL ALL 00000005			
586616.73000	4161918.30000	0.00000	24.90	192.17
0.00	ANNUAL ALL 00000005			
586636.73000	4161918.30000	0.00000	24.87	192.17
0.00	ANNUAL ALL 00000005			
586656.73000	4161918.30000	0.00000	24.58	192.17
0.00	ANNUAL ALL 00000005			

586676.73000	4161918.30000	0.00000	24.36	192.17
0.00	ANNUAL ALL 000000005			
586696.73000	4161918.30000	0.00000	24.09	192.17
0.00	ANNUAL ALL 000000005			
586716.73000	4161918.30000	0.00000	24.00	192.17
0.00	ANNUAL ALL 000000005			
586736.73000	4161918.30000	0.00000	23.98	192.17
0.00	ANNUAL ALL 000000005			
586756.73000	4161918.30000	0.00000	23.96	192.17
0.00	ANNUAL ALL 000000005			
586556.73000	4161938.30000	0.00000	25.30	181.37
0.00	ANNUAL ALL 000000005			
586576.73000	4161938.30000	0.00000	25.50	181.37
0.00	ANNUAL ALL 000000005			
586596.73000	4161938.30000	0.00000	25.19	192.17
0.00	ANNUAL ALL 000000005			
586616.73000	4161938.30000	0.00000	25.02	192.17
0.00	ANNUAL ALL 000000005			
586636.73000	4161938.30000	0.00000	24.82	192.17
0.00	ANNUAL ALL 000000005			
586656.73000	4161938.30000	0.00000	24.63	192.17
0.00	ANNUAL ALL 000000005			
586676.73000	4161938.30000	0.00000	24.32	192.17
0.00	ANNUAL ALL 000000005			
586696.73000	4161938.30000	0.00000	24.31	192.17
0.00	ANNUAL ALL 000000005			
586716.73000	4161938.30000	0.00000	24.26	192.17
0.00	ANNUAL ALL 000000005			
586736.73000	4161938.30000	0.00000	23.94	192.17
0.00	ANNUAL ALL 000000005			
586756.73000	4161938.30000	0.00000	23.97	192.17
0.00	ANNUAL ALL 000000005			
586576.73000	4161958.30000	0.00000	25.43	191.71
0.00	ANNUAL ALL 000000005			
586596.73000	4161958.30000	0.00000	25.33	192.17
0.00	ANNUAL ALL 000000005			
586616.73000	4161958.30000	0.00000	25.19	192.17
0.00	ANNUAL ALL 000000005			
586636.73000	4161958.30000	0.00000	24.88	192.17
0.00	ANNUAL ALL 000000005			
586656.73000	4161958.30000	0.00000	24.69	192.17
0.00	ANNUAL ALL 000000005			
586676.73000	4161958.30000	0.00000	24.54	192.17
0.00	ANNUAL ALL 000000005			
586696.73000	4161958.30000	0.00000	24.41	192.17
0.00	ANNUAL ALL 000000005			
586716.73000	4161958.30000	0.00000	24.29	192.17
0.00	ANNUAL ALL 000000005			
586736.73000	4161958.30000	0.00000	24.03	192.17
0.00	ANNUAL ALL 000000005			
586756.73000	4161958.30000	0.00000	24.11	192.17
0.00	ANNUAL ALL 000000005			

586596.73000	4161978.30000	0.00000	25.35	192.17
0.00	ANNUAL ALL 000000005			
586616.73000	4161978.30000	0.00000	25.15	192.17
0.00	ANNUAL ALL 000000005			
586636.73000	4161978.30000	0.00000	24.96	192.17
0.00	ANNUAL ALL 000000005			
586656.73000	4161978.30000	0.00000	24.65	192.17
0.00	ANNUAL ALL 000000005			
586676.73000	4161978.30000	0.00000	24.57	192.17
0.00	ANNUAL ALL 000000005			
586696.73000	4161978.30000	0.00000	24.46	192.17
0.00	ANNUAL ALL 000000005			
586716.73000	4161978.30000	0.00000	24.31	192.17
0.00	ANNUAL ALL 000000005			
586736.73000	4161978.30000	0.00000	24.31	192.17
0.00	ANNUAL ALL 000000005			
586756.73000	4161978.30000	0.00000	24.37	192.17
0.00	ANNUAL ALL 000000005			
586616.73000	4161998.30000	0.00000	25.32	192.17
0.00	ANNUAL ALL 000000005			
586636.73000	4161998.30000	0.00000	25.28	192.17
0.00	ANNUAL ALL 000000005			
586656.73000	4161998.30000	0.00000	24.94	192.17
0.00	ANNUAL ALL 000000005			
586676.73000	4161998.30000	0.00000	24.85	192.17
0.00	ANNUAL ALL 000000005			
586696.73000	4161998.30000	0.00000	24.48	192.17
0.00	ANNUAL ALL 000000005			
586716.73000	4161998.30000	0.00000	24.54	192.17
0.00	ANNUAL ALL 000000005			
586736.73000	4161998.30000	0.00000	24.54	192.17
0.00	ANNUAL ALL 000000005			
586756.73000	4161998.30000	0.00000	24.53	192.17
0.00	ANNUAL ALL 000000005			
586776.73000	4161998.30000	0.00000	24.41	192.17
0.00	ANNUAL ALL 000000005			
586636.73000	4162018.30000	0.00000	25.40	192.17
0.00	ANNUAL ALL 000000005			
586656.73000	4162018.30000	0.00000	25.63	192.17
0.00	ANNUAL ALL 000000005			
586676.73000	4162018.30000	0.00000	24.93	192.17
0.00	ANNUAL ALL 000000005			
586696.73000	4162018.30000	0.00000	24.91	192.17
0.00	ANNUAL ALL 000000005			
586716.73000	4162018.30000	0.00000	24.79	192.17
0.00	ANNUAL ALL 000000005			
586736.73000	4162018.30000	0.00000	24.57	192.17
0.00	ANNUAL ALL 000000005			
586756.73000	4162018.30000	0.00000	24.59	192.17
0.00	ANNUAL ALL 000000005			
586776.73000	4162018.30000	0.00000	24.69	192.17
0.00	ANNUAL ALL 000000005			

586376.97000	4161416.66000	0.00000	19.12	19.12
0.00	ANNUAL ALL 000000005			
586396.97000	4161416.66000	0.00000	19.27	19.27
0.00	ANNUAL ALL 000000005			
586416.97000	4161416.66000	0.00000	19.60	19.60
0.00	ANNUAL ALL 000000005			
586436.97000	4161416.66000	0.00000	19.59	19.59
0.00	ANNUAL ALL 000000005			
586456.97000	4161416.66000	0.00000	19.79	19.79
0.00	ANNUAL ALL 000000005			
586476.97000	4161416.66000	0.00000	19.90	19.90
0.00	ANNUAL ALL 000000005			
586496.97000	4161416.66000	0.00000	20.04	20.04
0.00	ANNUAL ALL 000000005			
586516.97000	4161416.66000	0.00000	20.05	20.05
0.00	ANNUAL ALL 000000005			
586536.97000	4161416.66000	0.00000	20.16	20.16
0.00	ANNUAL ALL 000000005			
586556.97000	4161416.66000	0.00000	20.28	20.28
0.00	ANNUAL ALL 000000005			
586576.97000	4161416.66000	0.00000	20.36	20.36
0.00	ANNUAL ALL 000000005			
586376.97000	4161436.66000	0.00000	19.06	19.06
0.00	ANNUAL ALL 000000005			
586396.97000	4161436.66000	0.00000	19.45	19.45
0.00	ANNUAL ALL 000000005			
586416.97000	4161436.66000	0.00000	19.73	19.73
0.00	ANNUAL ALL 000000005			
586436.97000	4161436.66000	0.00000	19.79	19.79
0.00	ANNUAL ALL 000000005			
586456.97000	4161436.66000	0.00000	19.91	19.91
0.00	ANNUAL ALL 000000005			
586476.97000	4161436.66000	0.00000	20.00	20.00
0.00	ANNUAL ALL 000000005			
586496.97000	4161436.66000	0.00000	20.38	20.38
0.00	ANNUAL ALL 000000005			
586516.97000	4161436.66000	0.00000	20.49	20.49
0.00	ANNUAL ALL 000000005			
586536.97000	4161436.66000	0.00000	20.44	20.44
0.00	ANNUAL ALL 000000005			
586556.97000	4161436.66000	0.00000	20.76	20.76
0.00	ANNUAL ALL 000000005			
586576.97000	4161436.66000	0.00000	20.78	20.78
0.00	ANNUAL ALL 000000005			
586376.97000	4161456.66000	0.00000	19.19	19.19
0.00	ANNUAL ALL 000000005			
586396.97000	4161456.66000	0.00000	19.45	19.45
0.00	ANNUAL ALL 000000005			
586416.97000	4161456.66000	0.00000	19.86	19.86
0.00	ANNUAL ALL 000000005			
586436.97000	4161456.66000	0.00000	20.17	20.17
0.00	ANNUAL ALL 000000005			

586456.97000	4161456.66000	0.00000	20.23	20.23
0.00	ANNUAL ALL 00000005			
586476.97000	4161456.66000	0.00000	20.24	20.24
0.00	ANNUAL ALL 00000005			
586496.97000	4161456.66000	0.00000	20.35	20.35
0.00	ANNUAL ALL 00000005			
586516.97000	4161456.66000	0.00000	20.61	20.61
0.00	ANNUAL ALL 00000005			
586536.97000	4161456.66000	0.00000	20.61	20.61
0.00	ANNUAL ALL 00000005			
586556.97000	4161456.66000	0.00000	20.84	20.84
0.00	ANNUAL ALL 00000005			
586576.97000	4161456.66000	0.00000	20.77	20.77
0.00	ANNUAL ALL 00000005			
586376.97000	4161476.66000	0.00000	19.70	19.70
0.00	ANNUAL ALL 00000005			
586396.97000	4161476.66000	0.00000	19.76	19.76
0.00	ANNUAL ALL 00000005			
586416.97000	4161476.66000	0.00000	20.16	20.16
0.00	ANNUAL ALL 00000005			
586436.97000	4161476.66000	0.00000	20.45	20.45
0.00	ANNUAL ALL 00000005			
586456.97000	4161476.66000	0.00000	20.66	20.66
0.00	ANNUAL ALL 00000005			
586476.97000	4161476.66000	0.00000	20.55	20.55
0.00	ANNUAL ALL 00000005			
586496.97000	4161476.66000	0.00000	20.73	20.73
0.00	ANNUAL ALL 00000005			
586516.97000	4161476.66000	0.00000	20.68	20.68
0.00	ANNUAL ALL 00000005			
586536.97000	4161476.66000	0.00000	20.98	20.98
0.00	ANNUAL ALL 00000005			
586556.97000	4161476.66000	0.00000	20.74	20.74
0.00	ANNUAL ALL 00000005			
586576.97000	4161476.66000	0.00000	20.56	20.56
0.00	ANNUAL ALL 00000005			
586376.97000	4161496.66000	0.00000	20.10	20.10
0.00	ANNUAL ALL 00000005			
586396.97000	4161496.66000	0.00000	20.17	20.17
0.00	ANNUAL ALL 00000005			
586416.97000	4161496.66000	0.00000	20.40	20.40
0.00	ANNUAL ALL 00000005			
586436.97000	4161496.66000	0.00000	20.52	20.52
0.00	ANNUAL ALL 00000005			
586456.97000	4161496.66000	0.00000	20.64	20.64
0.00	ANNUAL ALL 00000005			
586476.97000	4161496.66000	0.00000	20.79	20.79
0.00	ANNUAL ALL 00000005			
586496.97000	4161496.66000	0.00000	20.64	20.64
0.00	ANNUAL ALL 00000005			
586516.97000	4161496.66000	0.00000	20.94	20.94
0.00	ANNUAL ALL 00000005			

586536.97000	4161496.66000	0.00000	20.98	20.98
0.00	ANNUAL ALL 00000005			
586556.97000	4161496.66000	0.00000	20.62	20.62
0.00	ANNUAL ALL 00000005			
586576.97000	4161496.66000	0.00000	21.02	21.02
0.00	ANNUAL ALL 00000005			
586376.97000	4161516.66000	0.00000	20.47	20.47
0.00	ANNUAL ALL 00000005			
586396.97000	4161516.66000	0.00000	20.71	20.71
0.00	ANNUAL ALL 00000005			
586416.97000	4161516.66000	0.00000	20.47	20.47
0.00	ANNUAL ALL 00000005			
586436.97000	4161516.66000	0.00000	20.68	20.68
0.00	ANNUAL ALL 00000005			
586456.97000	4161516.66000	0.00000	20.71	20.71
0.00	ANNUAL ALL 00000005			
586476.97000	4161516.66000	0.00000	20.74	20.74
0.00	ANNUAL ALL 00000005			
586496.97000	4161516.66000	0.00000	21.01	21.01
0.00	ANNUAL ALL 00000005			
586516.97000	4161516.66000	0.00000	21.03	21.03
0.00	ANNUAL ALL 00000005			
586536.97000	4161516.66000	0.00000	20.85	20.85
0.00	ANNUAL ALL 00000005			
586556.97000	4161516.66000	0.00000	20.94	20.94
0.00	ANNUAL ALL 00000005			
586576.97000	4161516.66000	0.00000	21.07	21.07
0.00	ANNUAL ALL 00000005			
586376.97000	4161536.66000	0.00000	20.81	20.81
0.00	ANNUAL ALL 00000005			
586396.97000	4161536.66000	0.00000	20.76	20.76
0.00	ANNUAL ALL 00000005			
586416.97000	4161536.66000	0.00000	20.77	20.77
0.00	ANNUAL ALL 00000005			
586436.97000	4161536.66000	0.00000	20.75	20.75
0.00	ANNUAL ALL 00000005			
586456.97000	4161536.66000	0.00000	20.74	20.74
0.00	ANNUAL ALL 00000005			
586476.97000	4161536.66000	0.00000	20.97	20.97
0.00	ANNUAL ALL 00000005			
586496.97000	4161536.66000	0.00000	21.11	21.11
0.00	ANNUAL ALL 00000005			
586516.97000	4161536.66000	0.00000	20.88	20.88
0.00	ANNUAL ALL 00000005			
586536.97000	4161536.66000	0.00000	21.34	21.34
0.00	ANNUAL ALL 00000005			
586556.97000	4161536.66000	0.00000	21.59	21.59
0.00	ANNUAL ALL 00000005			
586576.97000	4161536.66000	0.00000	21.22	21.22
0.00	ANNUAL ALL 00000005			
586376.97000	4161556.66000	0.00000	20.86	20.86
0.00	ANNUAL ALL 00000005			

586396.97000	4161556.66000	0.00000	20.83	20.83
0.00	ANNUAL ALL 000000005			
586416.97000	4161556.66000	0.00000	20.82	20.82
0.00	ANNUAL ALL 000000005			
586436.97000	4161556.66000	0.00000	20.76	20.76
0.00	ANNUAL ALL 000000005			
586456.97000	4161556.66000	0.00000	21.16	21.16
0.00	ANNUAL ALL 000000005			
586476.97000	4161556.66000	0.00000	21.24	21.24
0.00	ANNUAL ALL 000000005			
586496.97000	4161556.66000	0.00000	20.98	20.98
0.00	ANNUAL ALL 000000005			
586516.97000	4161556.66000	0.00000	21.11	21.11
0.00	ANNUAL ALL 000000005			
586536.97000	4161556.66000	0.00000	21.52	21.52
0.00	ANNUAL ALL 000000005			
586556.97000	4161556.66000	0.00000	21.77	21.77
0.00	ANNUAL ALL 000000005			
586576.97000	4161556.66000	0.00000	21.56	21.56
0.00	ANNUAL ALL 000000005			
586376.97000	4161576.66000	0.00000	20.83	20.83
0.00	ANNUAL ALL 000000005			
586396.97000	4161576.66000	0.00000	20.88	20.88
0.00	ANNUAL ALL 000000005			
586416.97000	4161576.66000	0.00000	20.87	20.87
0.00	ANNUAL ALL 000000005			
586436.97000	4161576.66000	0.00000	21.24	21.24
0.00	ANNUAL ALL 000000005			
586456.97000	4161576.66000	0.00000	21.29	21.29
0.00	ANNUAL ALL 000000005			
586476.97000	4161576.66000	0.00000	21.09	21.09
0.00	ANNUAL ALL 000000005			
586496.97000	4161576.66000	0.00000	21.33	21.33
0.00	ANNUAL ALL 000000005			
586516.97000	4161576.66000	0.00000	21.48	21.48
0.00	ANNUAL ALL 000000005			
586536.97000	4161576.66000	0.00000	21.58	21.58
0.00	ANNUAL ALL 000000005			
586556.97000	4161576.66000	0.00000	21.63	21.63
0.00	ANNUAL ALL 000000005			
586576.97000	4161576.66000	0.00000	21.69	21.69
0.00	ANNUAL ALL 000000005			
586376.97000	4161596.66000	0.00000	20.84	20.84
0.00	ANNUAL ALL 000000005			
586396.97000	4161596.66000	0.00000	21.28	21.28
0.00	ANNUAL ALL 000000005			
586416.97000	4161596.66000	0.00000	21.31	21.31
0.00	ANNUAL ALL 000000005			
586436.97000	4161596.66000	0.00000	21.39	21.39
0.00	ANNUAL ALL 000000005			
586456.97000	4161596.66000	0.00000	21.26	21.26
0.00	ANNUAL ALL 000000005			

586476.97000	4161596.66000	0.00000	21.50	21.50
0.00	ANNUAL ALL 00000005			
586496.97000	4161596.66000	0.00000	21.71	21.71
0.00	ANNUAL ALL 00000005			
586516.97000	4161596.66000	0.00000	21.67	21.67
0.00	ANNUAL ALL 00000005			
586536.97000	4161596.66000	0.00000	21.81	21.81
0.00	ANNUAL ALL 00000005			
586556.97000	4161596.66000	0.00000	21.82	21.82
0.00	ANNUAL ALL 00000005			
586576.97000	4161596.66000	0.00000	21.86	181.17
0.00	ANNUAL ALL 00000005			
586376.97000	4161616.66000	0.00000	21.38	21.38
0.00	ANNUAL ALL 00000005			
586396.97000	4161616.66000	0.00000	21.54	21.54
0.00	ANNUAL ALL 00000005			
586416.97000	4161616.66000	0.00000	21.49	21.49
0.00	ANNUAL ALL 00000005			
586436.97000	4161616.66000	0.00000	21.36	21.36
0.00	ANNUAL ALL 00000005			
586456.97000	4161616.66000	0.00000	21.53	21.53
0.00	ANNUAL ALL 00000005			
586476.97000	4161616.66000	0.00000	21.80	21.80
0.00	ANNUAL ALL 00000005			
586496.97000	4161616.66000	0.00000	21.85	21.85
0.00	ANNUAL ALL 00000005			
586516.97000	4161616.66000	0.00000	21.92	21.92
0.00	ANNUAL ALL 00000005			
586536.97000	4161616.66000	0.00000	21.96	21.96
0.00	ANNUAL ALL 00000005			
586556.97000	4161616.66000	0.00000	21.92	21.92
0.00	ANNUAL ALL 00000005			
586576.97000	4161616.66000	0.00000	21.97	181.37
0.00	ANNUAL ALL 00000005			
586376.97000	4161636.66000	0.00000	21.36	21.36
0.00	ANNUAL ALL 00000005			
586396.97000	4161636.66000	0.00000	21.60	21.60
0.00	ANNUAL ALL 00000005			
586416.97000	4161636.66000	0.00000	21.61	21.61
0.00	ANNUAL ALL 00000005			
586436.97000	4161636.66000	0.00000	21.58	21.58
0.00	ANNUAL ALL 00000005			
586456.97000	4161636.66000	0.00000	21.73	21.73
0.00	ANNUAL ALL 00000005			
586476.97000	4161636.66000	0.00000	21.98	21.98
0.00	ANNUAL ALL 00000005			
586496.97000	4161636.66000	0.00000	22.00	22.00
0.00	ANNUAL ALL 00000005			
586516.97000	4161636.66000	0.00000	22.10	22.10
0.00	ANNUAL ALL 00000005			
586536.97000	4161636.66000	0.00000	22.15	22.15
0.00	ANNUAL ALL 00000005			

586556.97000	4161636.66000	0.00000	22.11	181.17
0.00	ANNUAL ALL 00000005			
586576.97000	4161636.66000	0.00000	22.41	181.37
0.00	ANNUAL ALL 00000005			
586376.97000	4161656.66000	0.00000	21.62	21.62
0.00	ANNUAL ALL 00000005			
586396.97000	4161656.66000	0.00000	22.12	22.12
0.00	ANNUAL ALL 00000005			
586416.97000	4161656.66000	0.00000	22.24	22.24
0.00	ANNUAL ALL 00000005			
586436.97000	4161656.66000	0.00000	22.18	22.18
0.00	ANNUAL ALL 00000005			
586456.97000	4161656.66000	0.00000	21.93	21.93
0.00	ANNUAL ALL 00000005			
586476.97000	4161656.66000	0.00000	22.01	22.01
0.00	ANNUAL ALL 00000005			
586496.97000	4161656.66000	0.00000	22.23	22.23
0.00	ANNUAL ALL 00000005			
586516.97000	4161656.66000	0.00000	22.31	22.31
0.00	ANNUAL ALL 00000005			
586536.97000	4161656.66000	0.00000	22.30	22.30
0.00	ANNUAL ALL 00000005			
586556.97000	4161656.66000	0.00000	22.48	181.37
0.00	ANNUAL ALL 00000005			
586576.97000	4161656.66000	0.00001	22.53	181.37
0.00	ANNUAL ALL 00000005			
586376.97000	4161676.66000	0.00000	21.89	21.89
0.00	ANNUAL ALL 00000005			
586396.97000	4161676.66000	0.00000	22.34	22.34
0.00	ANNUAL ALL 00000005			
586416.97000	4161676.66000	0.00000	22.86	22.86
0.00	ANNUAL ALL 00000005			
586436.97000	4161676.66000	0.00000	22.84	22.84
0.00	ANNUAL ALL 00000005			
586456.97000	4161676.66000	0.00000	22.35	22.35
0.00	ANNUAL ALL 00000005			
586476.97000	4161676.66000	0.00000	22.38	22.38
0.00	ANNUAL ALL 00000005			
586496.97000	4161676.66000	0.00000	22.47	22.47
0.00	ANNUAL ALL 00000005			
586516.97000	4161676.66000	0.00000	22.40	22.40
0.00	ANNUAL ALL 00000005			
586536.97000	4161676.66000	0.00000	22.65	22.65
0.00	ANNUAL ALL 00000005			
586556.97000	4161676.66000	0.00000	22.64	181.37
0.00	ANNUAL ALL 00000005			
586576.97000	4161676.66000	0.00001	22.60	181.37
0.00	ANNUAL ALL 00000005			
586596.97000	4161676.66000	0.00001	22.67	181.37
0.00	ANNUAL ALL 00000005			
586616.97000	4161676.66000	0.00001	22.81	181.37
0.00	ANNUAL ALL 00000005			

586636.97000	4161676.66000	0.00001	22.88	181.37
0.00	ANNUAL ALL 00000005			
586656.97000	4161676.66000	0.00001	23.09	181.37
0.00	ANNUAL ALL 00000005			
586676.97000	4161676.66000	0.00001	22.86	192.17
0.00	ANNUAL ALL 00000005			
586376.97000	4161696.66000	0.00000	22.27	22.27
0.00	ANNUAL ALL 00000005			
586396.97000	4161696.66000	0.00000	22.81	22.81
0.00	ANNUAL ALL 00000005			
586416.97000	4161696.66000	0.00000	22.94	22.94
0.00	ANNUAL ALL 00000005			
586436.97000	4161696.66000	0.00000	22.43	22.43
0.00	ANNUAL ALL 00000005			
586456.97000	4161696.66000	0.00000	22.42	22.42
0.00	ANNUAL ALL 00000005			
586476.97000	4161696.66000	0.00000	22.57	22.57
0.00	ANNUAL ALL 00000005			
586496.97000	4161696.66000	0.00000	22.72	22.72
0.00	ANNUAL ALL 00000005			
586516.97000	4161696.66000	0.00000	22.75	22.75
0.00	ANNUAL ALL 00000005			
586536.97000	4161696.66000	0.00000	22.87	181.17
0.00	ANNUAL ALL 00000005			
586556.97000	4161696.66000	0.00000	22.82	181.37
0.00	ANNUAL ALL 00000005			
586576.97000	4161696.66000	0.00001	22.76	181.37
0.00	ANNUAL ALL 00000005			
586596.97000	4161696.66000	0.00001	23.00	181.37
0.00	ANNUAL ALL 00000005			
586616.97000	4161696.66000	0.00001	23.07	181.37
0.00	ANNUAL ALL 00000005			
586636.97000	4161696.66000	0.00001	23.41	181.37
0.00	ANNUAL ALL 00000005			
586656.97000	4161696.66000	0.00001	23.14	181.37
0.00	ANNUAL ALL 00000005			
586676.97000	4161696.66000	0.00001	23.07	192.17
0.00	ANNUAL ALL 00000005			
586376.97000	4161716.66000	0.00000	22.56	22.56
0.00	ANNUAL ALL 00000005			
586396.97000	4161716.66000	0.00000	22.83	22.83
0.00	ANNUAL ALL 00000005			
586416.97000	4161716.66000	0.00000	22.53	22.53
0.00	ANNUAL ALL 00000005			
586436.97000	4161716.66000	0.00000	22.40	22.40
0.00	ANNUAL ALL 00000005			
586456.97000	4161716.66000	0.00000	22.62	22.62
0.00	ANNUAL ALL 00000005			
586476.97000	4161716.66000	0.00000	22.81	22.81
0.00	ANNUAL ALL 00000005			
586496.97000	4161716.66000	0.00000	23.07	23.07
0.00	ANNUAL ALL 00000005			

586516.97000	4161716.66000	0.00000	23.03	23.03
0.00	ANNUAL ALL 00000005			
586536.97000	4161716.66000	0.00000	22.98	181.37
0.00	ANNUAL ALL 00000005			
586556.97000	4161716.66000	0.00001	22.95	181.37
0.00	ANNUAL ALL 00000005			
586576.97000	4161716.66000	0.00001	22.93	181.37
0.00	ANNUAL ALL 00000005			
586596.97000	4161716.66000	0.00001	23.16	181.37
0.00	ANNUAL ALL 00000005			
586616.97000	4161716.66000	0.00001	23.37	181.37
0.00	ANNUAL ALL 00000005			
586636.97000	4161716.66000	0.00001	23.36	181.37
0.00	ANNUAL ALL 00000005			
586656.97000	4161716.66000	0.00001	23.37	191.71
0.00	ANNUAL ALL 00000005			
586676.97000	4161716.66000	0.00001	23.37	192.17
0.00	ANNUAL ALL 00000005			
586696.97000	4161716.66000	0.00001	23.06	192.17
0.00	ANNUAL ALL 00000005			
586376.97000	4161736.66000	0.00000	22.43	22.43
0.00	ANNUAL ALL 00000005			
586396.97000	4161736.66000	0.00000	22.48	22.48
0.00	ANNUAL ALL 00000005			
586416.97000	4161736.66000	0.00000	22.27	22.27
0.00	ANNUAL ALL 00000005			
586436.97000	4161736.66000	0.00000	22.43	22.43
0.00	ANNUAL ALL 00000005			
586456.97000	4161736.66000	0.00000	22.76	22.76
0.00	ANNUAL ALL 00000005			
586476.97000	4161736.66000	0.00000	23.19	23.19
0.00	ANNUAL ALL 00000005			
586496.97000	4161736.66000	0.00000	23.32	23.32
0.00	ANNUAL ALL 00000005			
586516.97000	4161736.66000	0.00000	23.20	23.20
0.00	ANNUAL ALL 00000005			
586536.97000	4161736.66000	0.00000	23.26	181.37
0.00	ANNUAL ALL 00000005			
586556.97000	4161736.66000	0.00001	23.17	181.37
0.00	ANNUAL ALL 00000005			
586576.97000	4161736.66000	0.00001	23.21	181.37
0.00	ANNUAL ALL 00000005			
586596.97000	4161736.66000	0.00001	23.60	181.37
0.00	ANNUAL ALL 00000005			
586616.97000	4161736.66000	0.00001	23.57	181.37
0.00	ANNUAL ALL 00000005			
586636.97000	4161736.66000	0.00001	23.58	181.37
0.00	ANNUAL ALL 00000005			
586656.97000	4161736.66000	0.00001	23.56	192.17
0.00	ANNUAL ALL 00000005			
586676.97000	4161736.66000	0.00001	23.42	192.17
0.00	ANNUAL ALL 00000005			

586696.97000	4161736.66000	0.00001	23.04	192.17
0.00	ANNUAL ALL 00000005			
586376.97000	4161756.66000	0.00000	22.23	22.23
0.00	ANNUAL ALL 00000005			
586396.97000	4161756.66000	0.00000	22.17	22.17
0.00	ANNUAL ALL 00000005			
586416.97000	4161756.66000	0.00000	22.50	22.50
0.00	ANNUAL ALL 00000005			
586436.97000	4161756.66000	0.00000	22.65	22.65
0.00	ANNUAL ALL 00000005			
586456.97000	4161756.66000	0.00000	22.99	22.99
0.00	ANNUAL ALL 00000005			
586476.97000	4161756.66000	0.00000	23.28	23.28
0.00	ANNUAL ALL 00000005			
586496.97000	4161756.66000	0.00000	23.41	23.41
0.00	ANNUAL ALL 00000005			
586516.97000	4161756.66000	0.00000	23.29	181.17
0.00	ANNUAL ALL 00000005			
586536.97000	4161756.66000	0.00000	23.31	181.37
0.00	ANNUAL ALL 00000005			
586556.97000	4161756.66000	0.00001	23.49	181.37
0.00	ANNUAL ALL 00000005			
586576.97000	4161756.66000	0.00001	23.67	181.37
0.00	ANNUAL ALL 00000005			
586596.97000	4161756.66000	0.00001	23.73	181.37
0.00	ANNUAL ALL 00000005			
586616.97000	4161756.66000	0.00001	23.66	181.37
0.00	ANNUAL ALL 00000005			
586636.97000	4161756.66000	0.00001	23.74	181.37
0.00	ANNUAL ALL 00000005			
586656.97000	4161756.66000	0.00001	23.60	192.17
0.00	ANNUAL ALL 00000005			
586676.97000	4161756.66000	0.00001	23.34	192.17
0.00	ANNUAL ALL 00000005			
586696.97000	4161756.66000	0.00001	22.99	192.17
0.00	ANNUAL ALL 00000005			
586716.97000	4161756.66000	0.00001	22.93	192.17
0.00	ANNUAL ALL 00000005			
586376.97000	4161776.66000	0.00000	22.19	22.19
0.00	ANNUAL ALL 00000005			
586396.97000	4161776.66000	0.00000	22.28	22.28
0.00	ANNUAL ALL 00000005			
586416.97000	4161776.66000	0.00000	22.57	22.57
0.00	ANNUAL ALL 00000005			
586436.97000	4161776.66000	0.00000	22.97	22.97
0.00	ANNUAL ALL 00000005			
586456.97000	4161776.66000	0.00000	23.21	23.21
0.00	ANNUAL ALL 00000005			
586476.97000	4161776.66000	0.00000	23.40	23.40
0.00	ANNUAL ALL 00000005			
586496.97000	4161776.66000	0.00000	23.45	23.45
0.00	ANNUAL ALL 00000005			

586516.97000	4161776.66000	0.00000	23.64	181.17
0.00	ANNUAL ALL 00000005			
586536.97000	4161776.66000	0.00000	23.69	181.37
0.00	ANNUAL ALL 00000005			
586556.97000	4161776.66000	0.00001	23.68	181.37
0.00	ANNUAL ALL 00000005			
586576.97000	4161776.66000	0.00001	23.76	181.37
0.00	ANNUAL ALL 00000005			
586596.97000	4161776.66000	0.00001	23.78	181.37
0.00	ANNUAL ALL 00000005			
586616.97000	4161776.66000	0.00001	23.86	181.37
0.00	ANNUAL ALL 00000005			
586636.97000	4161776.66000	0.00001	23.89	192.17
0.00	ANNUAL ALL 00000005			
586656.97000	4161776.66000	0.00001	23.61	192.17
0.00	ANNUAL ALL 00000005			
586676.97000	4161776.66000	0.00001	23.35	192.17
0.00	ANNUAL ALL 00000005			
586696.97000	4161776.66000	0.00001	23.01	192.17
0.00	ANNUAL ALL 00000005			
586716.97000	4161776.66000	0.00001	22.83	192.17
0.00	ANNUAL ALL 00000005			
586396.97000	4161796.66000	0.00000	22.52	22.52
0.00	ANNUAL ALL 00000005			
586416.97000	4161796.66000	0.00000	22.84	22.84
0.00	ANNUAL ALL 00000005			
586436.97000	4161796.66000	0.00000	23.38	23.38
0.00	ANNUAL ALL 00000005			
586456.97000	4161796.66000	0.00000	23.34	23.34
0.00	ANNUAL ALL 00000005			
586476.97000	4161796.66000	0.00000	23.51	23.51
0.00	ANNUAL ALL 00000005			
586496.97000	4161796.66000	0.00000	23.82	23.82
0.00	ANNUAL ALL 00000005			
586516.97000	4161796.66000	0.00000	23.69	181.37
0.00	ANNUAL ALL 00000005			
586536.97000	4161796.66000	0.00000	23.78	181.37
0.00	ANNUAL ALL 00000005			
586556.97000	4161796.66000	0.00001	23.93	181.37
0.00	ANNUAL ALL 00000005			
586576.97000	4161796.66000	0.00001	23.91	181.37
0.00	ANNUAL ALL 00000005			
586596.97000	4161796.66000	0.00001	23.88	181.37
0.00	ANNUAL ALL 00000005			
586616.97000	4161796.66000	0.00001	24.15	181.37
0.00	ANNUAL ALL 00000005			
586636.97000	4161796.66000	0.00001	23.93	192.17
0.00	ANNUAL ALL 00000005			
586656.97000	4161796.66000	0.00001	23.74	192.17
0.00	ANNUAL ALL 00000005			
586676.97000	4161796.66000	0.00001	23.36	192.17
0.00	ANNUAL ALL 00000005			

586696.97000	4161796.66000	0.00001	23.08	192.17
0.00	ANNUAL ALL 00000005			
586716.97000	4161796.66000	0.00001	22.81	192.17
0.00	ANNUAL ALL 00000005			
587016.80000	4161615.88000	0.00004	19.71	192.17
0.00	ANNUAL ALL 00000005			
587036.80000	4161615.88000	0.00004	19.63	192.17
0.00	ANNUAL ALL 00000005			
587056.80000	4161615.88000	0.00004	19.93	192.17
0.00	ANNUAL ALL 00000005			
587076.80000	4161615.88000	0.00003	19.58	192.17
0.00	ANNUAL ALL 00000005			
587096.80000	4161615.88000	0.00003	19.56	192.17
0.00	ANNUAL ALL 00000005			
587116.80000	4161615.88000	0.00003	19.74	192.17
0.00	ANNUAL ALL 00000005			
587136.80000	4161615.88000	0.00003	19.63	192.17
0.00	ANNUAL ALL 00000005			
587156.80000	4161615.88000	0.00003	19.92	192.17
0.00	ANNUAL ALL 00000005			
587176.80000	4161615.88000	0.00002	19.45	192.17
0.00	ANNUAL ALL 00000005			
587016.80000	4161635.88000	0.00003	19.85	192.17
0.00	ANNUAL ALL 00000005			
587036.80000	4161635.88000	0.00003	20.07	192.17
0.00	ANNUAL ALL 00000005			
587056.80000	4161635.88000	0.00003	20.21	192.17
0.00	ANNUAL ALL 00000005			
587076.80000	4161635.88000	0.00003	20.19	192.17
0.00	ANNUAL ALL 00000005			
587096.80000	4161635.88000	0.00003	19.58	192.17
0.00	ANNUAL ALL 00000005			
587116.80000	4161635.88000	0.00003	19.49	192.17
0.00	ANNUAL ALL 00000005			
587136.80000	4161635.88000	0.00002	19.94	192.17
0.00	ANNUAL ALL 00000005			
587156.80000	4161635.88000	0.00002	19.76	192.17
0.00	ANNUAL ALL 00000005			
587176.80000	4161635.88000	0.00002	19.20	192.17
0.00	ANNUAL ALL 00000005			
587016.80000	4161655.88000	0.00003	20.30	192.17
0.00	ANNUAL ALL 00000005			
587036.80000	4161655.88000	0.00003	20.34	192.17
0.00	ANNUAL ALL 00000005			
587056.80000	4161655.88000	0.00003	20.25	192.17
0.00	ANNUAL ALL 00000005			
587076.80000	4161655.88000	0.00003	19.90	192.17
0.00	ANNUAL ALL 00000005			
587096.80000	4161655.88000	0.00002	19.67	192.17
0.00	ANNUAL ALL 00000005			
587116.80000	4161655.88000	0.00002	19.64	192.17
0.00	ANNUAL ALL 00000005			

587136.80000	4161655.88000	0.00002	19.38	192.17
0.00	ANNUAL ALL 00000005			
587156.80000	4161655.88000	0.00002	19.39	192.17
0.00	ANNUAL ALL 00000005			
587176.80000	4161655.88000	0.00002	19.92	192.17
0.00	ANNUAL ALL 00000005			
586876.80000	4161675.88000	0.00002	21.34	192.17
0.00	ANNUAL ALL 00000005			
586896.80000	4161675.88000	0.00002	20.88	192.17
0.00	ANNUAL ALL 00000005			
586916.80000	4161675.88000	0.00002	20.83	192.17
0.00	ANNUAL ALL 00000005			
586936.80000	4161675.88000	0.00002	20.91	192.17
0.00	ANNUAL ALL 00000005			
586956.80000	4161675.88000	0.00002	21.01	192.17
0.00	ANNUAL ALL 00000005			
586976.80000	4161675.88000	0.00002	20.59	192.17
0.00	ANNUAL ALL 00000005			
586996.80000	4161675.88000	0.00002	20.91	192.17
0.00	ANNUAL ALL 00000005			
587016.80000	4161675.88000	0.00002	20.74	192.17
0.00	ANNUAL ALL 00000005			
587036.80000	4161675.88000	0.00002	20.47	192.17
0.00	ANNUAL ALL 00000005			
587056.80000	4161675.88000	0.00002	20.16	192.17
0.00	ANNUAL ALL 00000005			
587076.80000	4161675.88000	0.00002	19.80	192.17
0.00	ANNUAL ALL 00000005			
587096.80000	4161675.88000	0.00002	20.07	192.17
0.00	ANNUAL ALL 00000005			
587116.80000	4161675.88000	0.00002	19.95	192.17
0.00	ANNUAL ALL 00000005			
587136.80000	4161675.88000	0.00002	19.48	192.17
0.00	ANNUAL ALL 00000005			
587156.80000	4161675.88000	0.00002	19.61	192.17
0.00	ANNUAL ALL 00000005			
587176.80000	4161675.88000	0.00002	19.84	192.17
0.00	ANNUAL ALL 00000005			
586876.80000	4161695.88000	0.00002	21.07	192.17
0.00	ANNUAL ALL 00000005			
586896.80000	4161695.88000	0.00002	20.71	192.17
0.00	ANNUAL ALL 00000005			
586916.80000	4161695.88000	0.00002	20.86	192.17
0.00	ANNUAL ALL 00000005			
586936.80000	4161695.88000	0.00002	21.18	192.17
0.00	ANNUAL ALL 00000005			
586956.80000	4161695.88000	0.00002	21.05	192.17
0.00	ANNUAL ALL 00000005			
586976.80000	4161695.88000	0.00002	20.65	192.17
0.00	ANNUAL ALL 00000005			
586996.80000	4161695.88000	0.00002	20.50	192.17
0.00	ANNUAL ALL 00000005			

587016.80000	4161695.88000	0.00002	20.81	192.17
0.00	ANNUAL ALL 00000005			
587036.80000	4161695.88000	0.00002	20.89	192.17
0.00	ANNUAL ALL 00000005			
587056.80000	4161695.88000	0.00002	20.38	192.17
0.00	ANNUAL ALL 00000005			
587076.80000	4161695.88000	0.00002	20.27	192.17
0.00	ANNUAL ALL 00000005			
587096.80000	4161695.88000	0.00002	20.23	192.17
0.00	ANNUAL ALL 00000005			
587116.80000	4161695.88000	0.00002	19.75	192.17
0.00	ANNUAL ALL 00000005			
587136.80000	4161695.88000	0.00002	20.22	192.17
0.00	ANNUAL ALL 00000005			
587156.80000	4161695.88000	0.00002	20.13	192.17
0.00	ANNUAL ALL 00000005			
587176.80000	4161695.88000	0.00002	19.75	192.17
0.00	ANNUAL ALL 00000005			
586876.80000	4161715.88000	0.00001	21.28	192.17
0.00	ANNUAL ALL 00000005			
586896.80000	4161715.88000	0.00002	20.87	192.17
0.00	ANNUAL ALL 00000005			
586916.80000	4161715.88000	0.00002	21.12	192.17
0.00	ANNUAL ALL 00000005			
586936.80000	4161715.88000	0.00002	21.22	192.17
0.00	ANNUAL ALL 00000005			
586956.80000	4161715.88000	0.00002	20.93	192.17
0.00	ANNUAL ALL 00000005			
586976.80000	4161715.88000	0.00002	20.61	192.17
0.00	ANNUAL ALL 00000005			
586996.80000	4161715.88000	0.00002	20.87	192.17
0.00	ANNUAL ALL 00000005			
587016.80000	4161715.88000	0.00002	20.59	192.17
0.00	ANNUAL ALL 00000005			
587036.80000	4161715.88000	0.00002	20.75	192.17
0.00	ANNUAL ALL 00000005			
587056.80000	4161715.88000	0.00002	20.81	192.17
0.00	ANNUAL ALL 00000005			
587076.80000	4161715.88000	0.00002	20.39	192.17
0.00	ANNUAL ALL 00000005			
587096.80000	4161715.88000	0.00002	20.16	192.17
0.00	ANNUAL ALL 00000005			
587116.80000	4161715.88000	0.00002	19.82	192.17
0.00	ANNUAL ALL 00000005			
587136.80000	4161715.88000	0.00002	19.89	192.17
0.00	ANNUAL ALL 00000005			
587156.80000	4161715.88000	0.00001	20.56	192.17
0.00	ANNUAL ALL 00000005			
587176.80000	4161715.88000	0.00001	20.40	192.17
0.00	ANNUAL ALL 00000005			
586876.80000	4161735.88000	0.00001	21.43	192.17
0.00	ANNUAL ALL 00000005			

586896.80000	4161735.88000	0.00001	21.06	192.17
0.00	ANNUAL ALL 00000005			
586916.80000	4161735.88000	0.00001	21.21	192.17
0.00	ANNUAL ALL 00000005			
586936.80000	4161735.88000	0.00001	21.11	192.17
0.00	ANNUAL ALL 00000005			
586956.80000	4161735.88000	0.00001	20.76	192.17
0.00	ANNUAL ALL 00000005			
586976.80000	4161735.88000	0.00001	20.96	192.17
0.00	ANNUAL ALL 00000005			
586996.80000	4161735.88000	0.00001	21.20	192.17
0.00	ANNUAL ALL 00000005			
587016.80000	4161735.88000	0.00001	20.92	192.17
0.00	ANNUAL ALL 00000005			
587036.80000	4161735.88000	0.00001	20.55	192.17
0.00	ANNUAL ALL 00000005			
587056.80000	4161735.88000	0.00001	20.52	192.17
0.00	ANNUAL ALL 00000005			
587076.80000	4161735.88000	0.00001	20.45	192.17
0.00	ANNUAL ALL 00000005			
587096.80000	4161735.88000	0.00001	20.39	192.17
0.00	ANNUAL ALL 00000005			
587116.80000	4161735.88000	0.00001	20.53	192.17
0.00	ANNUAL ALL 00000005			
587136.80000	4161735.88000	0.00001	20.22	192.17
0.00	ANNUAL ALL 00000005			
587156.80000	4161735.88000	0.00001	20.06	192.17
0.00	ANNUAL ALL 00000005			
587176.80000	4161735.88000	0.00001	20.69	192.17
0.00	ANNUAL ALL 00000005			
586876.80000	4161755.88000	0.00001	21.57	192.17
0.00	ANNUAL ALL 00000005			
586896.80000	4161755.88000	0.00001	21.47	192.17
0.00	ANNUAL ALL 00000005			
586916.80000	4161755.88000	0.00001	21.04	192.17
0.00	ANNUAL ALL 00000005			
586936.80000	4161755.88000	0.00001	21.26	192.17
0.00	ANNUAL ALL 00000005			
586956.80000	4161755.88000	0.00001	21.25	192.17
0.00	ANNUAL ALL 00000005			
586976.80000	4161755.88000	0.00001	21.41	192.17
0.00	ANNUAL ALL 00000005			
586996.80000	4161755.88000	0.00001	21.21	192.17
0.00	ANNUAL ALL 00000005			
587016.80000	4161755.88000	0.00001	20.84	192.17
0.00	ANNUAL ALL 00000005			
587036.80000	4161755.88000	0.00001	21.20	192.17
0.00	ANNUAL ALL 00000005			
587056.80000	4161755.88000	0.00001	20.68	192.17
0.00	ANNUAL ALL 00000005			
587076.80000	4161755.88000	0.00001	20.71	192.17
0.00	ANNUAL ALL 00000005			

587096.80000	4161755.88000	0.00001	21.01	192.17
0.00	ANNUAL ALL 00000005			
587116.80000	4161755.88000	0.00001	20.76	192.17
0.00	ANNUAL ALL 00000005			
587136.80000	4161755.88000	0.00001	20.44	192.17
0.00	ANNUAL ALL 00000005			
587156.80000	4161755.88000	0.00001	20.14	192.17
0.00	ANNUAL ALL 00000005			
587176.80000	4161755.88000	0.00001	20.51	192.17
0.00	ANNUAL ALL 00000005			
586876.80000	4161775.88000	0.00001	21.76	192.17
0.00	ANNUAL ALL 00000005			
586896.80000	4161775.88000	0.00001	21.74	192.17
0.00	ANNUAL ALL 00000005			
586916.80000	4161775.88000	0.00001	21.25	192.17
0.00	ANNUAL ALL 00000005			
586936.80000	4161775.88000	0.00001	21.85	192.17
0.00	ANNUAL ALL 00000005			
586956.80000	4161775.88000	0.00001	21.49	192.17
0.00	ANNUAL ALL 00000005			
586976.80000	4161775.88000	0.00001	21.40	192.17
0.00	ANNUAL ALL 00000005			
586996.80000	4161775.88000	0.00001	20.91	192.17
0.00	ANNUAL ALL 00000005			
587016.80000	4161775.88000	0.00001	21.37	192.17
0.00	ANNUAL ALL 00000005			
587036.80000	4161775.88000	0.00001	21.11	192.17
0.00	ANNUAL ALL 00000005			
587056.80000	4161775.88000	0.00001	21.05	192.17
0.00	ANNUAL ALL 00000005			
587076.80000	4161775.88000	0.00001	21.39	192.17
0.00	ANNUAL ALL 00000005			
587096.80000	4161775.88000	0.00001	21.07	192.17
0.00	ANNUAL ALL 00000005			
587116.80000	4161775.88000	0.00001	21.00	192.17
0.00	ANNUAL ALL 00000005			
587136.80000	4161775.88000	0.00001	20.36	192.17
0.00	ANNUAL ALL 00000005			
587156.80000	4161775.88000	0.00001	20.58	192.17
0.00	ANNUAL ALL 00000005			
587176.80000	4161775.88000	0.00001	20.78	192.17
0.00	ANNUAL ALL 00000005			
586876.80000	4161795.88000	0.00001	21.83	192.17
0.00	ANNUAL ALL 00000005			
586896.80000	4161795.88000	0.00001	21.79	192.17
0.00	ANNUAL ALL 00000005			
586916.80000	4161795.88000	0.00001	21.48	192.17
0.00	ANNUAL ALL 00000005			
586936.80000	4161795.88000	0.00001	21.85	192.17
0.00	ANNUAL ALL 00000005			
586956.80000	4161795.88000	0.00001	21.61	192.17
0.00	ANNUAL ALL 00000005			

586976.80000	4161795.88000	0.00001	21.07	192.17
0.00	ANNUAL ALL 00000005			
586996.80000	4161795.88000	0.00001	21.50	192.17
0.00	ANNUAL ALL 00000005			
587016.80000	4161795.88000	0.00001	21.34	192.17
0.00	ANNUAL ALL 00000005			
587036.80000	4161795.88000	0.00001	21.14	192.17
0.00	ANNUAL ALL 00000005			
587056.80000	4161795.88000	0.00001	21.64	192.17
0.00	ANNUAL ALL 00000005			
587076.80000	4161795.88000	0.00001	21.34	192.17
0.00	ANNUAL ALL 00000005			
587096.80000	4161795.88000	0.00001	20.89	192.17
0.00	ANNUAL ALL 00000005			
587116.80000	4161795.88000	0.00001	20.52	192.17
0.00	ANNUAL ALL 00000005			
587136.80000	4161795.88000	0.00001	20.59	192.17
0.00	ANNUAL ALL 00000005			
587156.80000	4161795.88000	0.00001	21.00	192.17
0.00	ANNUAL ALL 00000005			
587419.00000	4161414.19000	0.00001	20.20	192.17
0.00	ANNUAL ALL 00000005			
587439.00000	4161414.19000	0.00001	21.33	192.17
0.00	ANNUAL ALL 00000005			
587459.00000	4161414.19000	0.00001	21.01	192.17
0.00	ANNUAL ALL 00000005			
587479.00000	4161414.19000	0.00001	20.90	192.17
0.00	ANNUAL ALL 00000005			
587499.00000	4161414.19000	0.00001	21.47	192.17
0.00	ANNUAL ALL 00000005			
587519.00000	4161414.19000	0.00001	22.44	192.17
0.00	ANNUAL ALL 00000005			
587419.00000	4161434.19000	0.00001	20.40	192.17
0.00	ANNUAL ALL 00000005			
587439.00000	4161434.19000	0.00001	20.61	192.17
0.00	ANNUAL ALL 00000005			
587459.00000	4161434.19000	0.00001	20.78	192.17
0.00	ANNUAL ALL 00000005			
587479.00000	4161434.19000	0.00001	21.30	192.17
0.00	ANNUAL ALL 00000005			
587499.00000	4161434.19000	0.00001	22.12	192.17
0.00	ANNUAL ALL 00000005			
587419.00000	4161454.19000	0.00001	20.80	192.17
0.00	ANNUAL ALL 00000005			
587439.00000	4161454.19000	0.00001	20.51	192.17
0.00	ANNUAL ALL 00000005			
587459.00000	4161454.19000	0.00001	21.17	192.17
0.00	ANNUAL ALL 00000005			
587479.00000	4161454.19000	0.00001	21.70	192.17
0.00	ANNUAL ALL 00000005			
587419.00000	4161474.19000	0.00001	20.21	192.17
0.00	ANNUAL ALL 00000005			

587439.00000	4161474.19000	0.00001	20.97	192.17
0.00	ANNUAL ALL 000000005			
587459.00000	4161474.19000	0.00001	21.46	192.17
0.00	ANNUAL ALL 000000005			
587419.00000	4161494.19000	0.00001	20.52	192.17
0.00	ANNUAL ALL 000000005			
587439.00000	4161494.19000	0.00001	20.99	192.17
0.00	ANNUAL ALL 000000005			
587419.00000	4161514.19000	0.00001	20.73	192.17
0.00	ANNUAL ALL 000000005			
587199.00000	4161614.19000	0.00002	19.34	192.17
0.00	ANNUAL ALL 000000005			
587219.00000	4161614.19000	0.00002	19.87	192.17
0.00	ANNUAL ALL 000000005			
587239.00000	4161614.19000	0.00002	20.17	192.17
0.00	ANNUAL ALL 000000005			
587259.00000	4161614.19000	0.00002	20.38	192.17
0.00	ANNUAL ALL 000000005			
587279.00000	4161614.19000	0.00002	19.94	192.17
0.00	ANNUAL ALL 000000005			
587299.00000	4161614.19000	0.00002	19.93	192.17
0.00	ANNUAL ALL 000000005			
587319.00000	4161614.19000	0.00001	20.25	192.17
0.00	ANNUAL ALL 000000005			
587339.00000	4161614.19000	0.00001	21.13	192.17
0.00	ANNUAL ALL 000000005			
587199.00000	4161634.19000	0.00002	19.71	192.17
0.00	ANNUAL ALL 000000005			
587219.00000	4161634.19000	0.00002	20.00	192.17
0.00	ANNUAL ALL 000000005			
587239.00000	4161634.19000	0.00002	20.34	192.17
0.00	ANNUAL ALL 000000005			
587259.00000	4161634.19000	0.00002	20.09	192.17
0.00	ANNUAL ALL 000000005			
587279.00000	4161634.19000	0.00002	20.00	192.17
0.00	ANNUAL ALL 000000005			
587299.00000	4161634.19000	0.00001	20.33	192.17
0.00	ANNUAL ALL 000000005			
587319.00000	4161634.19000	0.00001	20.71	192.17
0.00	ANNUAL ALL 000000005			
587199.00000	4161654.19000	0.00002	19.35	192.17
0.00	ANNUAL ALL 000000005			
587219.00000	4161654.19000	0.00002	20.13	192.17
0.00	ANNUAL ALL 000000005			
587239.00000	4161654.19000	0.00002	20.04	192.17
0.00	ANNUAL ALL 000000005			
587259.00000	4161654.19000	0.00002	19.82	192.17
0.00	ANNUAL ALL 000000005			
587279.00000	4161654.19000	0.00001	20.42	192.17
0.00	ANNUAL ALL 000000005			
587299.00000	4161654.19000	0.00001	20.76	192.17
0.00	ANNUAL ALL 000000005			

587199.00000	4161674.19000	0.00002	20.01	192.17
0.00	ANNUAL ALL 000000005			
587219.00000	4161674.19000	0.00002	19.51	192.17
0.00	ANNUAL ALL 000000005			
587239.00000	4161674.19000	0.00002	19.70	192.17
0.00	ANNUAL ALL 000000005			
587259.00000	4161674.19000	0.00001	20.35	192.17
0.00	ANNUAL ALL 000000005			
587279.00000	4161674.19000	0.00001	20.75	192.17
0.00	ANNUAL ALL 000000005			
587199.00000	4161694.19000	0.00002	20.08	192.17
0.00	ANNUAL ALL 000000005			
587219.00000	4161694.19000	0.00001	20.13	192.17
0.00	ANNUAL ALL 000000005			
587239.00000	4161694.19000	0.00001	20.35	192.17
0.00	ANNUAL ALL 000000005			
587259.00000	4161694.19000	0.00001	20.44	192.17
0.00	ANNUAL ALL 000000005			
587199.00000	4161714.19000	0.00001	20.03	192.17
0.00	ANNUAL ALL 000000005			
587219.00000	4161714.19000	0.00001	20.35	192.17
0.00	ANNUAL ALL 000000005			
587239.00000	4161714.19000	0.00001	21.12	192.17
0.00	ANNUAL ALL 000000005			
587199.00000	4161734.19000	0.00001	20.42	192.17
0.00	ANNUAL ALL 000000005			
587219.00000	4161734.19000	0.00001	20.43	192.17
0.00	ANNUAL ALL 000000005			
587199.00000	4161754.19000	0.00001	20.88	192.17
0.00	ANNUAL ALL 000000005			
586920.17000	4160794.91000	0.00000	15.68	15.68
0.00	ANNUAL ALL 000000005			
586940.17000	4160794.91000	0.00000	15.54	15.54
0.00	ANNUAL ALL 000000005			
586960.17000	4160794.91000	0.00000	14.54	15.41
0.00	ANNUAL ALL 000000005			
586980.17000	4160794.91000	0.00000	15.08	15.08
0.00	ANNUAL ALL 000000005			
587000.17000	4160794.91000	0.00000	16.00	16.00
0.00	ANNUAL ALL 000000005			
587020.17000	4160794.91000	0.00000	16.08	16.08
0.00	ANNUAL ALL 000000005			
587040.17000	4160794.91000	0.00000	15.90	15.90
0.00	ANNUAL ALL 000000005			
587060.17000	4160794.91000	0.00000	15.99	15.99
0.00	ANNUAL ALL 000000005			
587080.17000	4160794.91000	0.00000	15.58	15.58
0.00	ANNUAL ALL 000000005			
587100.17000	4160794.91000	0.00000	14.94	14.94
0.00	ANNUAL ALL 000000005			
587120.17000	4160794.91000	0.00000	14.81	14.81
0.00	ANNUAL ALL 000000005			

587140.17000	4160794.91000	0.00000	14.82	14.82
0.00	ANNUAL ALL 000000005			
587160.17000	4160794.91000	0.00000	14.76	14.76
0.00	ANNUAL ALL 000000005			
587180.17000	4160794.91000	0.00000	14.97	14.97
0.00	ANNUAL ALL 000000005			
586900.17000	4160814.91000	0.00000	15.73	15.73
0.00	ANNUAL ALL 000000005			
586920.17000	4160814.91000	0.00000	15.76	15.76
0.00	ANNUAL ALL 000000005			
586940.17000	4160814.91000	0.00000	15.76	15.76
0.00	ANNUAL ALL 000000005			
586960.17000	4160814.91000	0.00000	15.69	15.69
0.00	ANNUAL ALL 000000005			
586980.17000	4160814.91000	0.00000	16.00	16.00
0.00	ANNUAL ALL 000000005			
587000.17000	4160814.91000	0.00000	16.14	16.14
0.00	ANNUAL ALL 000000005			
587020.17000	4160814.91000	0.00000	15.91	15.91
0.00	ANNUAL ALL 000000005			
587040.17000	4160814.91000	0.00000	15.69	15.69
0.00	ANNUAL ALL 000000005			
587060.17000	4160814.91000	0.00000	15.30	15.30
0.00	ANNUAL ALL 000000005			
587080.17000	4160814.91000	0.00000	15.13	15.13
0.00	ANNUAL ALL 000000005			
587100.17000	4160814.91000	0.00000	15.08	15.08
0.00	ANNUAL ALL 000000005			
587120.17000	4160814.91000	0.00000	14.86	14.86
0.00	ANNUAL ALL 000000005			
587140.17000	4160814.91000	0.00000	14.91	14.91
0.00	ANNUAL ALL 000000005			
587160.17000	4160814.91000	0.00000	14.89	14.89
0.00	ANNUAL ALL 000000005			
587180.17000	4160814.91000	0.00000	14.77	14.77
0.00	ANNUAL ALL 000000005			
586880.17000	4160834.91000	0.00000	15.59	15.59
0.00	ANNUAL ALL 000000005			
586900.17000	4160834.91000	0.00000	15.72	15.72
0.00	ANNUAL ALL 000000005			
586920.17000	4160834.91000	0.00000	15.80	15.80
0.00	ANNUAL ALL 000000005			
586940.17000	4160834.91000	0.00000	15.84	15.84
0.00	ANNUAL ALL 000000005			
586960.17000	4160834.91000	0.00000	15.97	15.97
0.00	ANNUAL ALL 000000005			
587000.17000	4160834.91000	0.00000	15.73	15.73
0.00	ANNUAL ALL 000000005			
587020.17000	4160834.91000	0.00000	15.71	15.71
0.00	ANNUAL ALL 000000005			
587040.17000	4160834.91000	0.00000	15.52	15.52
0.00	ANNUAL ALL 000000005			

587060.17000	4160834.91000	0.00000	15.38	15.38
0.00	ANNUAL ALL 00000005			
587080.17000	4160834.91000	0.00000	15.21	15.21
0.00	ANNUAL ALL 00000005			
587100.17000	4160834.91000	0.00000	15.22	15.22
0.00	ANNUAL ALL 00000005			
587120.17000	4160834.91000	0.00000	15.02	15.02
0.00	ANNUAL ALL 00000005			
587140.17000	4160834.91000	0.00000	14.94	14.94
0.00	ANNUAL ALL 00000005			
587160.17000	4160834.91000	0.00000	14.90	14.90
0.00	ANNUAL ALL 00000005			
587180.17000	4160834.91000	0.00000	14.76	17.48
0.00	ANNUAL ALL 00000005			
586860.17000	4160854.91000	0.00000	15.59	15.59
0.00	ANNUAL ALL 00000005			
586880.17000	4160854.91000	0.00000	15.76	15.76
0.00	ANNUAL ALL 00000005			
586900.17000	4160854.91000	0.00000	15.84	15.84
0.00	ANNUAL ALL 00000005			
586920.17000	4160854.91000	0.00000	15.80	15.80
0.00	ANNUAL ALL 00000005			
587000.17000	4160854.91000	0.00000	15.57	15.57
0.00	ANNUAL ALL 00000005			
587020.17000	4160854.91000	0.00000	15.65	15.65
0.00	ANNUAL ALL 00000005			
587040.17000	4160854.91000	0.00000	15.70	15.70
0.00	ANNUAL ALL 00000005			
587060.17000	4160854.91000	0.00000	15.58	15.58
0.00	ANNUAL ALL 00000005			
587080.17000	4160854.91000	0.00000	15.32	15.32
0.00	ANNUAL ALL 00000005			
587100.17000	4160854.91000	0.00000	15.31	15.31
0.00	ANNUAL ALL 00000005			
587120.17000	4160854.91000	0.00000	15.03	15.03
0.00	ANNUAL ALL 00000005			
587140.17000	4160854.91000	0.00000	14.94	14.94
0.00	ANNUAL ALL 00000005			
587160.17000	4160854.91000	0.00000	14.85	17.43
0.00	ANNUAL ALL 00000005			
587180.17000	4160854.91000	0.00000	15.80	17.54
0.00	ANNUAL ALL 00000005			
587060.17000	4160874.91000	0.00000	15.61	15.61
0.00	ANNUAL ALL 00000005			
587080.17000	4160874.91000	0.00000	15.63	15.63
0.00	ANNUAL ALL 00000005			
587100.17000	4160874.91000	0.00000	15.40	15.40
0.00	ANNUAL ALL 00000005			
587120.17000	4160874.91000	0.00000	15.12	15.12
0.00	ANNUAL ALL 00000005			
587140.17000	4160874.91000	0.00000	15.14	17.38
0.00	ANNUAL ALL 00000005			

587060.17000	4160894.91000	0.00000	15.73	15.73
0.00	ANNUAL ALL 00000005			
587080.17000	4160894.91000	0.00000	15.63	15.63
0.00	ANNUAL ALL 00000005			
587100.17000	4160894.91000	0.00000	15.62	15.62
0.00	ANNUAL ALL 00000005			
587060.17000	4160914.91000	0.00000	15.73	15.73
0.00	ANNUAL ALL 00000005			
587080.17000	4160914.91000	0.00000	15.52	15.52
0.00	ANNUAL ALL 00000005			
587060.17000	4160934.91000	0.00000	15.68	15.68
0.00	ANNUAL ALL 00000005			
586447.04000	4160991.81000	0.00000	14.62	14.62
0.00	ANNUAL ALL 00000005			
586467.04000	4160991.81000	0.00000	14.83	14.83
0.00	ANNUAL ALL 00000005			
586427.04000	4161011.81000	0.00000	15.03	15.03
0.00	ANNUAL ALL 00000005			
586447.04000	4161011.81000	0.00000	14.95	14.95
0.00	ANNUAL ALL 00000005			
586467.04000	4161011.81000	0.00000	15.12	15.12
0.00	ANNUAL ALL 00000005			
586487.04000	4161011.81000	0.00000	15.81	15.81
0.00	ANNUAL ALL 00000005			
586507.04000	4161011.81000	0.00000	16.51	16.51
0.00	ANNUAL ALL 00000005			
586407.04000	4161031.81000	0.00000	15.48	15.48
0.00	ANNUAL ALL 00000005			
586427.04000	4161031.81000	0.00000	15.66	15.66
0.00	ANNUAL ALL 00000005			
586447.04000	4161031.81000	0.00000	15.77	15.77
0.00	ANNUAL ALL 00000005			
586467.04000	4161031.81000	0.00000	15.67	15.67
0.00	ANNUAL ALL 00000005			
586487.04000	4161031.81000	0.00000	16.15	16.15
0.00	ANNUAL ALL 00000005			
586507.04000	4161031.81000	0.00000	16.80	16.80
0.00	ANNUAL ALL 00000005			
586387.04000	4161051.81000	0.00000	15.93	15.93
0.00	ANNUAL ALL 00000005			
586407.04000	4161051.81000	0.00000	15.79	15.79
0.00	ANNUAL ALL 00000005			
586427.04000	4161051.81000	0.00000	15.87	15.87
0.00	ANNUAL ALL 00000005			
586447.04000	4161051.81000	0.00000	15.93	15.93
0.00	ANNUAL ALL 00000005			
586467.04000	4161051.81000	0.00000	16.00	16.00
0.00	ANNUAL ALL 00000005			
586487.04000	4161051.81000	0.00000	16.52	16.52
0.00	ANNUAL ALL 00000005			
586507.04000	4161051.81000	0.00000	17.35	17.35
0.00	ANNUAL ALL 00000005			

586367.04000	4161071.81000	0.00000	16.42	16.42
0.00	ANNUAL ALL 00000005			
586387.04000	4161071.81000	0.00000	16.26	16.26
0.00	ANNUAL ALL 00000005			
586407.04000	4161071.81000	0.00000	15.77	15.77
0.00	ANNUAL ALL 00000005			
586427.04000	4161071.81000	0.00000	15.73	15.73
0.00	ANNUAL ALL 00000005			
586447.04000	4161071.81000	0.00000	15.60	15.60
0.00	ANNUAL ALL 00000005			
586467.04000	4161071.81000	0.00000	15.78	15.78
0.00	ANNUAL ALL 00000005			
586487.04000	4161071.81000	0.00000	16.64	16.64
0.00	ANNUAL ALL 00000005			
586507.04000	4161071.81000	0.00000	17.72	17.72
0.00	ANNUAL ALL 00000005			
586347.04000	4161091.81000	0.00000	17.21	17.21
0.00	ANNUAL ALL 00000005			
586367.04000	4161091.81000	0.00000	17.32	17.32
0.00	ANNUAL ALL 00000005			
586387.04000	4161091.81000	0.00000	16.93	16.93
0.00	ANNUAL ALL 00000005			
586407.04000	4161091.81000	0.00000	16.31	16.31
0.00	ANNUAL ALL 00000005			
586427.04000	4161091.81000	0.00000	15.81	15.81
0.00	ANNUAL ALL 00000005			
586447.04000	4161091.81000	0.00000	15.69	15.69
0.00	ANNUAL ALL 00000005			
586467.04000	4161091.81000	0.00000	15.93	15.93
0.00	ANNUAL ALL 00000005			
586487.04000	4161091.81000	0.00000	16.96	16.96
0.00	ANNUAL ALL 00000005			
586507.04000	4161091.81000	0.00000	17.54	17.54
0.00	ANNUAL ALL 00000005			
586527.04000	4161091.81000	0.00000	17.45	17.45
0.00	ANNUAL ALL 00000005			
586327.04000	4161111.81000	0.00000	17.45	17.45
0.00	ANNUAL ALL 00000005			
586347.04000	4161111.81000	0.00000	17.20	17.20
0.00	ANNUAL ALL 00000005			
586367.04000	4161111.81000	0.00000	17.32	17.32
0.00	ANNUAL ALL 00000005			
586387.04000	4161111.81000	0.00000	17.22	17.22
0.00	ANNUAL ALL 00000005			
586407.04000	4161111.81000	0.00000	17.58	17.58
0.00	ANNUAL ALL 00000005			
586427.04000	4161111.81000	0.00000	17.25	17.25
0.00	ANNUAL ALL 00000005			
586447.04000	4161111.81000	0.00000	16.79	16.79
0.00	ANNUAL ALL 00000005			
586467.04000	4161111.81000	0.00000	16.13	16.13
0.00	ANNUAL ALL 00000005			

586487.04000	4161111.81000	0.00000	17.16	17.16
0.00	ANNUAL ALL 00000005			
586507.04000	4161111.81000	0.00000	17.76	17.76
0.00	ANNUAL ALL 00000005			
586307.04000	4161131.81000	0.00000	16.56	16.56
0.00	ANNUAL ALL 00000005			
586327.04000	4161131.81000	0.00000	17.35	17.35
0.00	ANNUAL ALL 00000005			
586347.04000	4161131.81000	0.00000	17.39	17.39
0.00	ANNUAL ALL 00000005			
586367.04000	4161131.81000	0.00000	17.61	17.61
0.00	ANNUAL ALL 00000005			
586387.04000	4161131.81000	0.00000	17.70	17.70
0.00	ANNUAL ALL 00000005			
586407.04000	4161131.81000	0.00000	17.44	17.44
0.00	ANNUAL ALL 00000005			
586427.04000	4161131.81000	0.00000	17.93	17.93
0.00	ANNUAL ALL 00000005			
586447.04000	4161131.81000	0.00000	17.81	17.81
0.00	ANNUAL ALL 00000005			
586467.04000	4161131.81000	0.00000	17.58	17.58
0.00	ANNUAL ALL 00000005			
586487.04000	4161131.81000	0.00000	17.78	17.78
0.00	ANNUAL ALL 00000005			
586287.04000	4161151.81000	0.00000	16.50	16.50
0.00	ANNUAL ALL 00000005			
586307.04000	4161151.81000	0.00000	16.51	17.42
0.00	ANNUAL ALL 00000005			
586327.04000	4161151.81000	0.00000	17.65	17.65
0.00	ANNUAL ALL 00000005			
586347.04000	4161151.81000	0.00000	17.85	17.85
0.00	ANNUAL ALL 00000005			
586367.04000	4161151.81000	0.00000	17.75	17.75
0.00	ANNUAL ALL 00000005			
586387.04000	4161151.81000	0.00000	17.66	17.66
0.00	ANNUAL ALL 00000005			
586407.04000	4161151.81000	0.00000	17.98	17.98
0.00	ANNUAL ALL 00000005			
586427.04000	4161151.81000	0.00000	18.04	18.04
0.00	ANNUAL ALL 00000005			
586447.04000	4161151.81000	0.00000	18.07	18.07
0.00	ANNUAL ALL 00000005			
586467.04000	4161151.81000	0.00000	18.14	18.14
0.00	ANNUAL ALL 00000005			
586267.04000	4161171.81000	0.00000	17.05	17.05
0.00	ANNUAL ALL 00000005			
586287.04000	4161171.81000	0.00000	17.24	17.24
0.00	ANNUAL ALL 00000005			
586307.04000	4161171.81000	0.00000	17.57	17.57
0.00	ANNUAL ALL 00000005			
586327.04000	4161171.81000	0.00000	17.75	17.75
0.00	ANNUAL ALL 00000005			

586347.04000	4161171.81000	0.00000	17.74	17.74
0.00	ANNUAL ALL 00000005			
586367.04000	4161171.81000	0.00000	17.64	17.64
0.00	ANNUAL ALL 00000005			
586387.04000	4161171.81000	0.00000	17.95	17.95
0.00	ANNUAL ALL 00000005			
586407.04000	4161171.81000	0.00000	17.72	17.72
0.00	ANNUAL ALL 00000005			
586427.04000	4161171.81000	0.00000	17.96	17.96
0.00	ANNUAL ALL 00000005			
586447.04000	4161171.81000	0.00000	17.97	17.97
0.00	ANNUAL ALL 00000005			
586267.04000	4161191.81000	0.00000	17.05	17.05
0.00	ANNUAL ALL 00000005			
586287.04000	4161191.81000	0.00000	17.30	17.30
0.00	ANNUAL ALL 00000005			
586307.04000	4161191.81000	0.00000	17.60	17.60
0.00	ANNUAL ALL 00000005			
586327.04000	4161191.81000	0.00000	17.59	17.59
0.00	ANNUAL ALL 00000005			
586347.04000	4161191.81000	0.00000	17.46	17.46
0.00	ANNUAL ALL 00000005			
586367.04000	4161191.81000	0.00000	17.99	17.99
0.00	ANNUAL ALL 00000005			
586387.04000	4161191.81000	0.00000	18.22	18.22
0.00	ANNUAL ALL 00000005			
586407.04000	4161191.81000	0.00000	18.12	18.12
0.00	ANNUAL ALL 00000005			
586527.04000	4161191.81000	0.00000	17.82	17.82
0.00	ANNUAL ALL 00000005			
586547.04000	4161191.81000	0.00000	17.98	17.98
0.00	ANNUAL ALL 00000005			
586267.04000	4161211.81000	0.00000	17.09	17.09
0.00	ANNUAL ALL 00000005			
586287.04000	4161211.81000	0.00000	17.31	17.31
0.00	ANNUAL ALL 00000005			
586307.04000	4161211.81000	0.00000	17.40	17.40
0.00	ANNUAL ALL 00000005			
586327.04000	4161211.81000	0.00000	17.34	17.34
0.00	ANNUAL ALL 00000005			
586347.04000	4161211.81000	0.00000	17.56	17.56
0.00	ANNUAL ALL 00000005			
586367.04000	4161211.81000	0.00000	17.86	17.86
0.00	ANNUAL ALL 00000005			
586387.04000	4161211.81000	0.00000	18.37	18.37
0.00	ANNUAL ALL 00000005			
586487.04000	4161211.81000	0.00000	17.87	17.87
0.00	ANNUAL ALL 00000005			
586507.04000	4161211.81000	0.00000	18.14	18.14
0.00	ANNUAL ALL 00000005			
586527.04000	4161211.81000	0.00000	18.01	18.01
0.00	ANNUAL ALL 00000005			

586547.04000	4161211.81000	0.00000	18.30	18.30
0.00	ANNUAL ALL 00000005			
586267.04000	4161231.81000	0.00000	17.16	17.16
0.00	ANNUAL ALL 00000005			
586287.04000	4161231.81000	0.00000	17.25	17.25
0.00	ANNUAL ALL 00000005			
586307.04000	4161231.81000	0.00000	17.19	17.19
0.00	ANNUAL ALL 00000005			
586327.04000	4161231.81000	0.00000	17.45	17.45
0.00	ANNUAL ALL 00000005			
586347.04000	4161231.81000	0.00000	17.58	17.58
0.00	ANNUAL ALL 00000005			
586367.04000	4161231.81000	0.00000	18.30	18.30
0.00	ANNUAL ALL 00000005			
586467.04000	4161231.81000	0.00000	18.07	18.07
0.00	ANNUAL ALL 00000005			
586487.04000	4161231.81000	0.00000	18.19	18.19
0.00	ANNUAL ALL 00000005			
586507.04000	4161231.81000	0.00000	18.23	18.23
0.00	ANNUAL ALL 00000005			
586527.04000	4161231.81000	0.00000	18.36	18.36
0.00	ANNUAL ALL 00000005			
586547.04000	4161231.81000	0.00000	18.45	18.45
0.00	ANNUAL ALL 00000005			
586567.04000	4161231.81000	0.00000	18.67	18.67
0.00	ANNUAL ALL 00000005			
586267.04000	4161251.81000	0.00000	17.12	17.12
0.00	ANNUAL ALL 00000005			
586287.04000	4161251.81000	0.00000	17.11	17.11
0.00	ANNUAL ALL 00000005			
586307.04000	4161251.81000	0.00000	17.32	17.32
0.00	ANNUAL ALL 00000005			
586327.04000	4161251.81000	0.00000	17.45	17.45
0.00	ANNUAL ALL 00000005			
586347.04000	4161251.81000	0.00000	17.57	17.57
0.00	ANNUAL ALL 00000005			
586367.04000	4161251.81000	0.00000	18.15	18.15
0.00	ANNUAL ALL 00000005			
586447.04000	4161251.81000	0.00000	18.18	18.18
0.00	ANNUAL ALL 00000005			
586467.04000	4161251.81000	0.00000	18.33	18.33
0.00	ANNUAL ALL 00000005			
586487.04000	4161251.81000	0.00000	18.35	18.35
0.00	ANNUAL ALL 00000005			
586507.04000	4161251.81000	0.00000	18.40	18.40
0.00	ANNUAL ALL 00000005			
586527.04000	4161251.81000	0.00000	18.52	18.52
0.00	ANNUAL ALL 00000005			
586547.04000	4161251.81000	0.00000	18.50	18.50
0.00	ANNUAL ALL 00000005			
586567.04000	4161251.81000	0.00000	18.95	18.95
0.00	ANNUAL ALL 00000005			

586267.04000	4161271.81000	0.00000	17.13	17.13
0.00	ANNUAL ALL 00000005			
586287.04000	4161271.81000	0.00000	17.23	17.23
0.00	ANNUAL ALL 00000005			
586307.04000	4161271.81000	0.00000	17.51	17.51
0.00	ANNUAL ALL 00000005			
586327.04000	4161271.81000	0.00000	17.60	17.60
0.00	ANNUAL ALL 00000005			
586347.04000	4161271.81000	0.00000	17.73	17.73
0.00	ANNUAL ALL 00000005			
586427.04000	4161271.81000	0.00000	18.36	18.36
0.00	ANNUAL ALL 00000005			
586447.04000	4161271.81000	0.00000	18.58	18.58
0.00	ANNUAL ALL 00000005			
586467.04000	4161271.81000	0.00000	18.55	18.55
0.00	ANNUAL ALL 00000005			
586487.04000	4161271.81000	0.00000	18.52	18.52
0.00	ANNUAL ALL 00000005			
586507.04000	4161271.81000	0.00000	18.60	18.60
0.00	ANNUAL ALL 00000005			
586527.04000	4161271.81000	0.00000	18.60	18.60
0.00	ANNUAL ALL 00000005			
586547.04000	4161271.81000	0.00000	18.57	18.57
0.00	ANNUAL ALL 00000005			
586567.04000	4161271.81000	0.00000	18.71	18.71
0.00	ANNUAL ALL 00000005			
586267.04000	4161291.81000	0.00000	17.58	17.58
0.00	ANNUAL ALL 00000005			
586287.04000	4161291.81000	0.00000	17.59	17.59
0.00	ANNUAL ALL 00000005			
586307.04000	4161291.81000	0.00000	17.76	17.76
0.00	ANNUAL ALL 00000005			
586327.04000	4161291.81000	0.00000	17.97	17.97
0.00	ANNUAL ALL 00000005			
586347.04000	4161291.81000	0.00000	18.18	18.18
0.00	ANNUAL ALL 00000005			
586407.04000	4161291.81000	0.00000	18.34	18.34
0.00	ANNUAL ALL 00000005			
586427.04000	4161291.81000	0.00000	18.80	18.80
0.00	ANNUAL ALL 00000005			
586447.04000	4161291.81000	0.00000	18.74	18.74
0.00	ANNUAL ALL 00000005			
586467.04000	4161291.81000	0.00000	18.63	18.63
0.00	ANNUAL ALL 00000005			
586487.04000	4161291.81000	0.00000	18.70	18.70
0.00	ANNUAL ALL 00000005			
586507.04000	4161291.81000	0.00000	18.88	18.88
0.00	ANNUAL ALL 00000005			
586527.04000	4161291.81000	0.00000	18.85	18.85
0.00	ANNUAL ALL 00000005			
586547.04000	4161291.81000	0.00000	18.85	18.85
0.00	ANNUAL ALL 00000005			

586567.04000	4161291.81000	0.00000	18.93	18.93
0.00	ANNUAL ALL 00000005			
586587.04000	4161291.81000	0.00000	19.03	19.03
0.00	ANNUAL ALL 00000005			
586267.04000	4161311.81000	0.00000	17.79	17.79
0.00	ANNUAL ALL 00000005			
586287.04000	4161311.81000	0.00000	17.96	17.96
0.00	ANNUAL ALL 00000005			
586307.04000	4161311.81000	0.00000	18.04	18.04
0.00	ANNUAL ALL 00000005			
586327.04000	4161311.81000	0.00000	18.28	18.28
0.00	ANNUAL ALL 00000005			
586387.04000	4161311.81000	0.00000	18.36	18.36
0.00	ANNUAL ALL 00000005			
586407.04000	4161311.81000	0.00000	18.67	18.67
0.00	ANNUAL ALL 00000005			
586427.04000	4161311.81000	0.00000	18.78	18.78
0.00	ANNUAL ALL 00000005			
586447.04000	4161311.81000	0.00000	18.70	18.70
0.00	ANNUAL ALL 00000005			
586467.04000	4161311.81000	0.00000	18.77	18.77
0.00	ANNUAL ALL 00000005			
586487.04000	4161311.81000	0.00000	18.89	18.89
0.00	ANNUAL ALL 00000005			
586507.04000	4161311.81000	0.00000	18.97	18.97
0.00	ANNUAL ALL 00000005			
586527.04000	4161311.81000	0.00000	19.00	19.00
0.00	ANNUAL ALL 00000005			
586547.04000	4161311.81000	0.00000	18.98	18.98
0.00	ANNUAL ALL 00000005			
586567.04000	4161311.81000	0.00000	19.01	19.01
0.00	ANNUAL ALL 00000005			
586587.04000	4161311.81000	0.00000	19.00	19.00
0.00	ANNUAL ALL 00000005			
586267.04000	4161331.81000	0.00000	18.08	18.08
0.00	ANNUAL ALL 00000005			
586287.04000	4161331.81000	0.00000	18.22	18.22
0.00	ANNUAL ALL 00000005			
586307.04000	4161331.81000	0.00000	18.29	18.29
0.00	ANNUAL ALL 00000005			
586367.04000	4161331.81000	0.00000	18.58	18.58
0.00	ANNUAL ALL 00000005			
586387.04000	4161331.81000	0.00000	18.97	18.97
0.00	ANNUAL ALL 00000005			
586407.04000	4161331.81000	0.00000	18.77	18.77
0.00	ANNUAL ALL 00000005			
586427.04000	4161331.81000	0.00000	18.69	18.69
0.00	ANNUAL ALL 00000005			
586447.04000	4161331.81000	0.00000	18.92	18.92
0.00	ANNUAL ALL 00000005			
586467.04000	4161331.81000	0.00000	19.07	19.07
0.00	ANNUAL ALL 00000005			

586487.04000	4161331.81000	0.00000	19.06	19.06
0.00	ANNUAL ALL 000000005			
586507.04000	4161331.81000	0.00000	19.18	19.18
0.00	ANNUAL ALL 000000005			
586527.04000	4161331.81000	0.00000	19.11	19.11
0.00	ANNUAL ALL 000000005			
586547.04000	4161331.81000	0.00000	19.18	19.18
0.00	ANNUAL ALL 000000005			
586567.04000	4161331.81000	0.00000	19.25	19.25
0.00	ANNUAL ALL 000000005			
586587.04000	4161331.81000	0.00000	19.31	19.31
0.00	ANNUAL ALL 000000005			
586267.04000	4161351.81000	0.00000	18.13	18.13
0.00	ANNUAL ALL 000000005			
586287.04000	4161351.81000	0.00000	18.38	18.38
0.00	ANNUAL ALL 000000005			
586347.04000	4161351.81000	0.00000	18.99	18.99
0.00	ANNUAL ALL 000000005			
586367.04000	4161351.81000	0.00000	18.94	18.94
0.00	ANNUAL ALL 000000005			
586387.04000	4161351.81000	0.00000	18.92	18.92
0.00	ANNUAL ALL 000000005			
586407.04000	4161351.81000	0.00000	18.78	18.78
0.00	ANNUAL ALL 000000005			
586427.04000	4161351.81000	0.00000	19.09	19.09
0.00	ANNUAL ALL 000000005			
586447.04000	4161351.81000	0.00000	19.35	19.35
0.00	ANNUAL ALL 000000005			
586467.04000	4161351.81000	0.00000	19.34	19.34
0.00	ANNUAL ALL 000000005			
586487.04000	4161351.81000	0.00000	19.38	19.38
0.00	ANNUAL ALL 000000005			
586507.04000	4161351.81000	0.00000	19.32	19.32
0.00	ANNUAL ALL 000000005			
586527.04000	4161351.81000	0.00000	19.37	19.37
0.00	ANNUAL ALL 000000005			
586547.04000	4161351.81000	0.00000	19.44	19.44
0.00	ANNUAL ALL 000000005			
586567.04000	4161351.81000	0.00000	19.50	19.50
0.00	ANNUAL ALL 000000005			
586587.04000	4161351.81000	0.00000	19.58	19.58
0.00	ANNUAL ALL 000000005			
586267.04000	4161371.81000	0.00000	18.19	18.19
0.00	ANNUAL ALL 000000005			
586287.04000	4161371.81000	0.00000	18.82	18.82
0.00	ANNUAL ALL 000000005			
586327.04000	4161371.81000	0.00000	19.04	19.04
0.00	ANNUAL ALL 000000005			
586347.04000	4161371.81000	0.00000	18.93	18.93
0.00	ANNUAL ALL 000000005			
586367.04000	4161371.81000	0.00000	18.86	18.86
0.00	ANNUAL ALL 000000005			

586387.04000	4161371.81000	0.00000	18.86	18.86
0.00	ANNUAL ALL 00000005			
586407.04000	4161371.81000	0.00000	18.87	18.87
0.00	ANNUAL ALL 00000005			
586427.04000	4161371.81000	0.00000	19.40	19.40
0.00	ANNUAL ALL 00000005			
586447.04000	4161371.81000	0.00000	19.60	19.60
0.00	ANNUAL ALL 00000005			
586467.04000	4161371.81000	0.00000	19.71	19.71
0.00	ANNUAL ALL 00000005			
586487.04000	4161371.81000	0.00000	19.55	19.55
0.00	ANNUAL ALL 00000005			
586507.04000	4161371.81000	0.00000	19.47	19.47
0.00	ANNUAL ALL 00000005			
586527.04000	4161371.81000	0.00000	19.58	19.58
0.00	ANNUAL ALL 00000005			
586547.04000	4161371.81000	0.00000	19.61	19.61
0.00	ANNUAL ALL 00000005			
586567.04000	4161371.81000	0.00000	19.71	19.71
0.00	ANNUAL ALL 00000005			
586587.04000	4161371.81000	0.00000	19.81	19.81
0.00	ANNUAL ALL 00000005			
586267.04000	4161391.81000	0.00000	18.76	18.76
0.00	ANNUAL ALL 00000005			
586307.04000	4161391.81000	0.00000	19.05	19.05
0.00	ANNUAL ALL 00000005			
586327.04000	4161391.81000	0.00000	19.04	19.04
0.00	ANNUAL ALL 00000005			
586347.04000	4161391.81000	0.00000	18.99	18.99
0.00	ANNUAL ALL 00000005			
586367.04000	4161391.81000	0.00000	18.92	18.92
0.00	ANNUAL ALL 00000005			
586387.04000	4161391.81000	0.00000	18.96	18.96
0.00	ANNUAL ALL 00000005			
586407.04000	4161391.81000	0.00000	19.15	19.15
0.00	ANNUAL ALL 00000005			
586427.04000	4161391.81000	0.00000	19.38	19.38
0.00	ANNUAL ALL 00000005			
586447.04000	4161391.81000	0.00000	19.71	19.71
0.00	ANNUAL ALL 00000005			
586467.04000	4161391.81000	0.00000	19.77	19.77
0.00	ANNUAL ALL 00000005			
586487.04000	4161391.81000	0.00000	19.58	19.58
0.00	ANNUAL ALL 00000005			
586507.04000	4161391.81000	0.00000	19.70	19.70
0.00	ANNUAL ALL 00000005			
586527.04000	4161391.81000	0.00000	19.77	19.77
0.00	ANNUAL ALL 00000005			
586547.04000	4161391.81000	0.00000	19.83	19.83
0.00	ANNUAL ALL 00000005			
586567.04000	4161391.81000	0.00000	19.88	19.88
0.00	ANNUAL ALL 00000005			

586587.04000	4161391.81000	0.00000	20.23	20.23
0.00	ANNUAL ALL 00000005			
586248.57000	4161192.06000	0.00000	16.91	16.91
0.00	ANNUAL ALL 00000005			
586228.57000	4161212.06000	0.00000	16.95	16.95
0.00	ANNUAL ALL 00000005			
586248.57000	4161212.06000	0.00000	17.05	17.05
0.00	ANNUAL ALL 00000005			
586208.57000	4161232.06000	0.00000	17.11	17.11
0.00	ANNUAL ALL 00000005			
586228.57000	4161232.06000	0.00000	17.10	17.10
0.00	ANNUAL ALL 00000005			
586248.57000	4161232.06000	0.00000	17.05	17.05
0.00	ANNUAL ALL 00000005			
586188.57000	4161252.06000	0.00000	16.99	16.99
0.00	ANNUAL ALL 00000005			
586208.57000	4161252.06000	0.00000	17.41	17.41
0.00	ANNUAL ALL 00000005			
586228.57000	4161252.06000	0.00000	17.46	17.46
0.00	ANNUAL ALL 00000005			
586248.57000	4161252.06000	0.00000	17.07	17.07
0.00	ANNUAL ALL 00000005			
586168.57000	4161272.06000	0.00000	16.91	16.91
0.00	ANNUAL ALL 00000005			
586188.57000	4161272.06000	0.00000	17.18	17.18
0.00	ANNUAL ALL 00000005			
586208.57000	4161272.06000	0.00000	17.31	17.31
0.00	ANNUAL ALL 00000005			
586228.57000	4161272.06000	0.00000	17.52	17.52
0.00	ANNUAL ALL 00000005			
586248.57000	4161272.06000	0.00000	17.47	17.47
0.00	ANNUAL ALL 00000005			
586148.57000	4161292.06000	0.00000	16.70	16.70
0.00	ANNUAL ALL 00000005			
586168.57000	4161292.06000	0.00000	17.06	17.06
0.00	ANNUAL ALL 00000005			
586188.57000	4161292.06000	0.00000	17.14	17.14
0.00	ANNUAL ALL 00000005			
586208.57000	4161292.06000	0.00000	17.32	17.32
0.00	ANNUAL ALL 00000005			
586228.57000	4161292.06000	0.00000	17.44	17.44
0.00	ANNUAL ALL 00000005			
586248.57000	4161292.06000	0.00000	16.98	16.98
0.00	ANNUAL ALL 00000005			
586128.57000	4161312.06000	0.00000	16.61	16.61
0.00	ANNUAL ALL 00000005			
586148.57000	4161312.06000	0.00000	16.78	16.78
0.00	ANNUAL ALL 00000005			
586168.57000	4161312.06000	0.00000	16.94	16.94
0.00	ANNUAL ALL 00000005			
586188.57000	4161312.06000	0.00000	17.28	17.28
0.00	ANNUAL ALL 00000005			

586208.57000	4161312.06000	0.00000	17.40	17.40
0.00	ANNUAL ALL 000000005			
586228.57000	4161312.06000	0.00000	17.06	17.06
0.00	ANNUAL ALL 000000005			
586248.57000	4161312.06000	0.00000	17.85	17.85
0.00	ANNUAL ALL 000000005			
586128.57000	4161332.06000	0.00000	16.99	16.99
0.00	ANNUAL ALL 000000005			
586148.57000	4161332.06000	0.00000	16.95	16.95
0.00	ANNUAL ALL 000000005			
586168.57000	4161332.06000	0.00000	17.19	17.19
0.00	ANNUAL ALL 000000005			
586188.57000	4161332.06000	0.00000	17.42	17.42
0.00	ANNUAL ALL 000000005			
586208.57000	4161332.06000	0.00000	17.19	17.19
0.00	ANNUAL ALL 000000005			
586228.57000	4161332.06000	0.00000	17.56	17.56
0.00	ANNUAL ALL 000000005			
586248.57000	4161332.06000	0.00000	17.93	17.93
0.00	ANNUAL ALL 000000005			
586148.57000	4161352.06000	0.00000	17.26	17.26
0.00	ANNUAL ALL 000000005			
586168.57000	4161352.06000	0.00000	17.19	17.19
0.00	ANNUAL ALL 000000005			
586188.57000	4161352.06000	0.00000	17.37	17.37
0.00	ANNUAL ALL 000000005			
586208.57000	4161352.06000	0.00000	17.48	17.48
0.00	ANNUAL ALL 000000005			
586228.57000	4161352.06000	0.00000	17.69	17.69
0.00	ANNUAL ALL 000000005			
586248.57000	4161352.06000	0.00000	17.85	17.85
0.00	ANNUAL ALL 000000005			
586148.57000	4161372.06000	0.00000	17.40	17.40
0.00	ANNUAL ALL 000000005			
586168.57000	4161372.06000	0.00000	17.46	17.46
0.00	ANNUAL ALL 000000005			
586188.57000	4161372.06000	0.00000	17.62	17.62
0.00	ANNUAL ALL 000000005			
586208.57000	4161372.06000	0.00000	17.58	17.58
0.00	ANNUAL ALL 000000005			
586228.57000	4161372.06000	0.00000	17.68	17.68
0.00	ANNUAL ALL 000000005			
586248.57000	4161372.06000	0.00000	17.81	17.81
0.00	ANNUAL ALL 000000005			
586168.57000	4161392.06000	0.00000	17.55	17.55
0.00	ANNUAL ALL 000000005			
586188.57000	4161392.06000	0.00000	17.65	17.65
0.00	ANNUAL ALL 000000005			
586208.57000	4161392.06000	0.00000	17.78	17.78
0.00	ANNUAL ALL 000000005			
586228.57000	4161392.06000	0.00000	18.01	18.01
0.00	ANNUAL ALL 000000005			

586248.57000	4161392.06000	0.00000	18.06	18.06
0.00	ANNUAL ALL 00000005			
586473.03000	4160970.97000	0.00000	14.82	14.82
0.00	ANNUAL ALL 00000005			
586493.03000	4160990.97000	0.00000	15.92	15.92
0.00	ANNUAL ALL 00000005			
586763.66000	4161798.90000	0.00001	23.02	192.17
0.00	ANNUAL ALL 00000005			
586784.44000	4161799.45000	0.00001	22.70	192.17
0.00	ANNUAL ALL 00000005			
586805.76000	4161798.90000	0.00001	22.43	192.17
0.00	ANNUAL ALL 00000005			
586763.66000	4161777.03000	0.00001	22.83	192.17
0.00	ANNUAL ALL 00000005			
586743.98000	4161758.44000	0.00001	22.95	192.17
0.00	ANNUAL ALL 00000005			
586743.43000	4161678.06000	0.00001	22.36	192.17
0.00	ANNUAL ALL 00000005			
586743.98000	4161697.75000	0.00001	22.62	192.17
0.00	ANNUAL ALL 00000005			
586743.98000	4161717.98000	0.00001	22.80	192.17
0.00	ANNUAL ALL 00000005			
586744.52000	4161737.66000	0.00001	22.94	192.17
0.00	ANNUAL ALL 00000005			
586845.13000	4161718.53000	0.00001	21.83	192.17
0.00	ANNUAL ALL 00000005			
586764.21000	4161678.06000	0.00002	22.15	192.17
0.00	ANNUAL ALL 00000005			
586764.75000	4161697.75000	0.00001	22.31	192.17
0.00	ANNUAL ALL 00000005			
586724.29000	4161678.06000	0.00001	22.58	192.17
0.00	ANNUAL ALL 00000005			
586824.90000	4161678.06000	0.00001	21.82	192.17
0.00	ANNUAL ALL 00000005			
586807.41000	4161678.06000	0.00001	21.97	192.17
0.00	ANNUAL ALL 00000005			
586783.35000	4161679.16000	0.00001	22.06	192.17
0.00	ANNUAL ALL 00000005			
586763.66000	4161758.44000	0.00001	22.72	192.17
0.00	ANNUAL ALL 00000005			
586764.75000	4161738.21000	0.00001	22.64	192.17
0.00	ANNUAL ALL 00000005			
586764.75000	4161717.98000	0.00001	22.52	192.17
0.00	ANNUAL ALL 00000005			
586783.89000	4161778.13000	0.00001	22.64	192.17
0.00	ANNUAL ALL 00000005			
586784.44000	4161757.35000	0.00001	22.53	192.17
0.00	ANNUAL ALL 00000005			
586824.90000	4161797.81000	0.00001	22.24	192.17
0.00	ANNUAL ALL 00000005			
586845.13000	4161797.81000	0.00001	22.04	192.17
0.00	ANNUAL ALL 00000005			

586845.13000	4161798.36000	0.00001	22.05	192.17
0.00	ANNUAL ALL 00000005			
586804.67000	4161778.13000	0.00001	22.39	192.17
0.00	ANNUAL ALL 00000005			
586783.35000	4161697.75000	0.00001	22.24	192.17
0.00	ANNUAL ALL 00000005			
586784.44000	4161717.98000	0.00001	22.29	192.17
0.00	ANNUAL ALL 00000005			
586824.90000	4161777.58000	0.00001	22.19	192.17
0.00	ANNUAL ALL 00000005			
586845.13000	4161777.03000	0.00001	22.03	192.17
0.00	ANNUAL ALL 00000005			
586865.37000	4161777.03000	0.00001	21.86	192.17
0.00	ANNUAL ALL 00000005			
586823.81000	4161718.53000	0.00001	22.02	192.17
0.00	ANNUAL ALL 00000005			
586805.22000	4161757.35000	0.00001	22.31	192.17
0.00	ANNUAL ALL 00000005			
586824.90000	4161759.54000	0.00001	22.14	192.17
0.00	ANNUAL ALL 00000005			
586784.44000	4161738.76000	0.00001	22.45	192.17
0.00	ANNUAL ALL 00000005			
586807.41000	4161697.20000	0.00001	22.05	192.17
0.00	ANNUAL ALL 00000005			
586803.03000	4161718.53000	0.00001	22.18	192.17
0.00	ANNUAL ALL 00000005			
586864.82000	4161718.53000	0.00001	21.52	192.17
0.00	ANNUAL ALL 00000005			
586826.00000	4161697.20000	0.00001	21.82	192.17
0.00	ANNUAL ALL 00000005			
586845.13000	4161697.75000	0.00001	21.71	192.17
0.00	ANNUAL ALL 00000005			
586844.04000	4161740.40000	0.00001	21.94	192.17
0.00	ANNUAL ALL 00000005			
586807.41000	4161737.66000	0.00001	22.19	192.17
0.00	ANNUAL ALL 00000005			
586825.45000	4161737.66000	0.00001	22.07	192.17
0.00	ANNUAL ALL 00000005			
586844.04000	4161757.90000	0.00001	21.95	192.17
0.00	ANNUAL ALL 00000005			
586823.26000	4161655.64000	0.00001	21.59	192.17
0.00	ANNUAL ALL 00000005			
586847.32000	4161675.88000	0.00002	21.51	192.17
0.00	ANNUAL ALL 00000005			
586844.04000	4161653.46000	0.00001	21.33	192.17
0.00	ANNUAL ALL 00000005			
586864.82000	4161739.85000	0.00001	21.62	192.17
0.00	ANNUAL ALL 00000005			
586862.63000	4161757.35000	0.00001	21.73	192.17
0.00	ANNUAL ALL 00000005			
586797.17000	4161255.38000	0.00000	18.80	181.37
0.00	ANNUAL ALL 00000005			

586817.17000	4161255.38000	0.00000	18.71	181.37
0.00	ANNUAL ALL 00000005			
586837.17000	4161255.38000	0.00000	18.69	181.37
0.00	ANNUAL ALL 00000005			
586857.17000	4161255.38000	0.00000	18.70	181.37
0.00	ANNUAL ALL 00000005			
586877.17000	4161255.38000	0.00000	18.68	181.37
0.00	ANNUAL ALL 00000005			
586897.17000	4161255.38000	0.00000	18.69	181.37
0.00	ANNUAL ALL 00000005			
586917.17000	4161255.38000	0.00000	18.69	181.37
0.00	ANNUAL ALL 00000005			
586937.17000	4161255.38000	0.00001	18.69	181.37
0.00	ANNUAL ALL 00000005			
586957.17000	4161255.38000	0.00001	18.71	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161255.38000	0.00001	18.76	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161255.38000	0.00001	18.81	192.17
0.00	ANNUAL ALL 00000005			
586777.17000	4161275.38000	0.00000	18.91	181.37
0.00	ANNUAL ALL 00000005			
586797.17000	4161275.38000	0.00000	18.92	181.37
0.00	ANNUAL ALL 00000005			
586817.17000	4161275.38000	0.00000	18.85	181.37
0.00	ANNUAL ALL 00000005			
586837.17000	4161275.38000	0.00000	18.87	181.37
0.00	ANNUAL ALL 00000005			
586857.17000	4161275.38000	0.00000	18.88	181.37
0.00	ANNUAL ALL 00000005			
586877.17000	4161275.38000	0.00000	18.87	181.37
0.00	ANNUAL ALL 00000005			
586897.17000	4161275.38000	0.00001	18.88	181.37
0.00	ANNUAL ALL 00000005			
586917.17000	4161275.38000	0.00001	18.87	181.37
0.00	ANNUAL ALL 00000005			
586937.17000	4161275.38000	0.00001	18.89	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161275.38000	0.00001	18.90	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161275.38000	0.00001	18.89	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161275.38000	0.00001	18.83	192.17
0.00	ANNUAL ALL 00000005			
586757.17000	4161295.38000	0.00000	19.19	181.37
0.00	ANNUAL ALL 00000005			
586777.17000	4161295.38000	0.00000	19.09	181.37
0.00	ANNUAL ALL 00000005			
586797.17000	4161295.38000	0.00000	18.98	181.37
0.00	ANNUAL ALL 00000005			
586817.17000	4161295.38000	0.00000	19.03	181.37
0.00	ANNUAL ALL 00000005			

586837.17000	4161295.38000	0.00000	19.07	181.37
0.00	ANNUAL ALL 00000005			
586857.17000	4161295.38000	0.00000	19.08	181.37
0.00	ANNUAL ALL 00000005			
586877.17000	4161295.38000	0.00001	19.09	181.37
0.00	ANNUAL ALL 00000005			
586897.17000	4161295.38000	0.00001	19.06	181.37
0.00	ANNUAL ALL 00000005			
586917.17000	4161295.38000	0.00001	19.08	192.17
0.00	ANNUAL ALL 00000005			
586937.17000	4161295.38000	0.00001	19.10	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161295.38000	0.00001	19.06	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161295.38000	0.00001	18.94	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161295.38000	0.00001	18.64	192.17
0.00	ANNUAL ALL 00000005			
586737.17000	4161315.38000	0.00000	19.36	181.37
0.00	ANNUAL ALL 00000005			
586757.17000	4161315.38000	0.00000	19.35	181.37
0.00	ANNUAL ALL 00000005			
586777.17000	4161315.38000	0.00000	19.26	181.37
0.00	ANNUAL ALL 00000005			
586797.17000	4161315.38000	0.00000	19.17	181.37
0.00	ANNUAL ALL 00000005			
586817.17000	4161315.38000	0.00000	19.22	181.37
0.00	ANNUAL ALL 00000005			
586837.17000	4161315.38000	0.00000	19.24	181.37
0.00	ANNUAL ALL 00000005			
586857.17000	4161315.38000	0.00001	19.28	181.37
0.00	ANNUAL ALL 00000005			
586877.17000	4161315.38000	0.00001	19.27	181.37
0.00	ANNUAL ALL 00000005			
586897.17000	4161315.38000	0.00001	19.26	192.17
0.00	ANNUAL ALL 00000005			
586917.17000	4161315.38000	0.00001	19.30	192.17
0.00	ANNUAL ALL 00000005			
586937.17000	4161315.38000	0.00001	19.27	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161315.38000	0.00001	19.12	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161315.38000	0.00001	18.81	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161315.38000	0.00001	18.56	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161335.38000	0.00000	19.44	19.44
0.00	ANNUAL ALL 00000005			
586757.17000	4161335.38000	0.00000	19.50	181.37
0.00	ANNUAL ALL 00000005			
586777.17000	4161335.38000	0.00000	19.42	181.37
0.00	ANNUAL ALL 00000005			

586797.17000	4161335.38000	0.00000	19.38	181.37
0.00	ANNUAL ALL 00000005			
586817.17000	4161335.38000	0.00001	19.41	181.37
0.00	ANNUAL ALL 00000005			
586837.17000	4161335.38000	0.00001	19.47	181.37
0.00	ANNUAL ALL 00000005			
586857.17000	4161335.38000	0.00001	19.47	181.37
0.00	ANNUAL ALL 00000005			
586877.17000	4161335.38000	0.00001	19.49	191.71
0.00	ANNUAL ALL 00000005			
586897.17000	4161335.38000	0.00001	19.51	192.17
0.00	ANNUAL ALL 00000005			
586917.17000	4161335.38000	0.00001	19.48	192.17
0.00	ANNUAL ALL 00000005			
586937.17000	4161335.38000	0.00001	19.33	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161335.38000	0.00001	19.04	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161335.38000	0.00001	18.78	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161335.38000	0.00002	18.56	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161355.38000	0.00000	19.69	19.69
0.00	ANNUAL ALL 00000005			
586777.17000	4161355.38000	0.00001	19.65	181.37
0.00	ANNUAL ALL 00000005			
586797.17000	4161355.38000	0.00001	19.60	181.37
0.00	ANNUAL ALL 00000005			
586817.17000	4161355.38000	0.00001	19.63	181.37
0.00	ANNUAL ALL 00000005			
586837.17000	4161355.38000	0.00001	19.69	181.37
0.00	ANNUAL ALL 00000005			
586857.17000	4161355.38000	0.00001	19.69	181.37
0.00	ANNUAL ALL 00000005			
586877.17000	4161355.38000	0.00001	19.74	192.17
0.00	ANNUAL ALL 00000005			
586897.17000	4161355.38000	0.00001	19.66	192.17
0.00	ANNUAL ALL 00000005			
586917.17000	4161355.38000	0.00001	19.54	192.17
0.00	ANNUAL ALL 00000005			
586937.17000	4161355.38000	0.00001	19.30	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161355.38000	0.00002	19.01	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161355.38000	0.00002	18.78	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161355.38000	0.00002	18.59	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161375.38000	0.00000	19.89	19.89
0.00	ANNUAL ALL 00000005			
586777.17000	4161375.38000	0.00001	20.14	181.37
0.00	ANNUAL ALL 00000005			

586797.17000	4161375.38000	0.00001	19.87	181.37
0.00	ANNUAL ALL 00000005			
586817.17000	4161375.38000	0.00001	19.88	181.37
0.00	ANNUAL ALL 00000005			
586837.17000	4161375.38000	0.00001	19.94	181.37
0.00	ANNUAL ALL 00000005			
586857.17000	4161375.38000	0.00001	19.96	192.17
0.00	ANNUAL ALL 00000005			
586877.17000	4161375.38000	0.00001	19.90	192.17
0.00	ANNUAL ALL 00000005			
586897.17000	4161375.38000	0.00001	19.74	192.17
0.00	ANNUAL ALL 00000005			
586917.17000	4161375.38000	0.00001	19.51	192.17
0.00	ANNUAL ALL 00000005			
586937.17000	4161375.38000	0.00002	19.27	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161375.38000	0.00002	19.03	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161375.38000	0.00002	18.83	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161375.38000	0.00002	18.69	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161395.38000	0.00000	20.23	20.23
0.00	ANNUAL ALL 00000005			
586617.17000	4161395.38000	0.00000	20.43	20.43
0.00	ANNUAL ALL 00000005			
586757.17000	4161395.38000	0.00001	20.43	181.37
0.00	ANNUAL ALL 00000005			
586777.17000	4161395.38000	0.00001	20.89	181.37
0.00	ANNUAL ALL 00000005			
586797.17000	4161395.38000	0.00001	20.27	181.37
0.00	ANNUAL ALL 00000005			
586817.17000	4161395.38000	0.00001	20.14	181.37
0.00	ANNUAL ALL 00000005			
586837.17000	4161395.38000	0.00001	20.23	192.17
0.00	ANNUAL ALL 00000005			
586857.17000	4161395.38000	0.00001	20.10	192.17
0.00	ANNUAL ALL 00000005			
586877.17000	4161395.38000	0.00001	19.99	192.17
0.00	ANNUAL ALL 00000005			
586897.17000	4161395.38000	0.00001	19.73	192.17
0.00	ANNUAL ALL 00000005			
586917.17000	4161395.38000	0.00002	19.50	192.17
0.00	ANNUAL ALL 00000005			
586937.17000	4161395.38000	0.00002	19.28	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161395.38000	0.00003	19.08	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161395.38000	0.00003	18.93	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161395.38000	0.00003	18.82	192.17
0.00	ANNUAL ALL 00000005			

586597.17000	4161415.38000	0.00000	20.55	20.55
0.00	ANNUAL ALL 00000005			
586617.17000	4161415.38000	0.00000	20.60	20.60
0.00	ANNUAL ALL 00000005			
586737.17000	4161415.38000	0.00001	20.34	181.37
0.00	ANNUAL ALL 00000005			
586757.17000	4161415.38000	0.00001	20.85	181.37
0.00	ANNUAL ALL 00000005			
586777.17000	4161415.38000	0.00001	20.82	181.37
0.00	ANNUAL ALL 00000005			
586797.17000	4161415.38000	0.00001	20.64	181.37
0.00	ANNUAL ALL 00000005			
586817.17000	4161415.38000	0.00001	20.39	181.37
0.00	ANNUAL ALL 00000005			
586837.17000	4161415.38000	0.00001	20.43	192.17
0.00	ANNUAL ALL 00000005			
586857.17000	4161415.38000	0.00001	20.20	192.17
0.00	ANNUAL ALL 00000005			
586877.17000	4161415.38000	0.00001	20.00	192.17
0.00	ANNUAL ALL 00000005			
586897.17000	4161415.38000	0.00002	19.67	192.17
0.00	ANNUAL ALL 00000005			
586917.17000	4161415.38000	0.00002	19.50	192.17
0.00	ANNUAL ALL 00000005			
586937.17000	4161415.38000	0.00003	19.35	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161415.38000	0.00003	19.17	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161415.38000	0.00003	19.09	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161415.38000	0.00004	18.91	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161435.38000	0.00000	20.80	20.80
0.00	ANNUAL ALL 00000005			
586617.17000	4161435.38000	0.00000	20.60	20.60
0.00	ANNUAL ALL 00000005			
586737.17000	4161435.38000	0.00001	20.86	181.37
0.00	ANNUAL ALL 00000005			
586757.17000	4161435.38000	0.00001	20.78	181.37
0.00	ANNUAL ALL 00000005			
586777.17000	4161435.38000	0.00001	20.73	181.37
0.00	ANNUAL ALL 00000005			
586797.17000	4161435.38000	0.00001	20.79	181.37
0.00	ANNUAL ALL 00000005			
586817.17000	4161435.38000	0.00001	20.52	192.17
0.00	ANNUAL ALL 00000005			
586837.17000	4161435.38000	0.00001	20.58	192.17
0.00	ANNUAL ALL 00000005			
586857.17000	4161435.38000	0.00001	20.32	192.17
0.00	ANNUAL ALL 00000005			
586877.17000	4161435.38000	0.00001	20.03	192.17
0.00	ANNUAL ALL 00000005			

586897.17000	4161435.38000	0.00002	19.82	192.17
0.00	ANNUAL ALL 00000005			
586917.17000	4161435.38000	0.00003	19.61	192.17
0.00	ANNUAL ALL 00000005			
586937.17000	4161435.38000	0.00004	19.50	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161435.38000	0.00004	19.35	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161435.38000	0.00004	19.07	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161455.38000	0.00000	20.60	20.60
0.00	ANNUAL ALL 00000005			
586617.17000	4161455.38000	0.00000	20.64	20.64
0.00	ANNUAL ALL 00000005			
586717.17000	4161455.38000	0.00001	20.96	181.37
0.00	ANNUAL ALL 00000005			
586737.17000	4161455.38000	0.00001	20.85	181.37
0.00	ANNUAL ALL 00000005			
586757.17000	4161455.38000	0.00001	20.77	181.37
0.00	ANNUAL ALL 00000005			
586777.17000	4161455.38000	0.00001	20.71	181.37
0.00	ANNUAL ALL 00000005			
586797.17000	4161455.38000	0.00001	20.79	192.17
0.00	ANNUAL ALL 00000005			
586817.17000	4161455.38000	0.00000	20.61	192.17
0.00	ANNUAL ALL 00000005			
586837.17000	4161455.38000	0.00001	20.63	192.17
0.00	ANNUAL ALL 00000005			
586857.17000	4161455.38000	0.00001	20.37	192.17
0.00	ANNUAL ALL 00000005			
586937.17000	4161455.38000	0.00005	19.71	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161455.38000	0.00005	19.47	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161475.38000	0.00000	20.93	20.93
0.00	ANNUAL ALL 00000005			
586617.17000	4161475.38000	0.00000	20.92	20.92
0.00	ANNUAL ALL 00000005			
586637.17000	4161475.38000	0.00001	20.80	181.37
0.00	ANNUAL ALL 00000005			
586697.17000	4161475.38000	0.00001	21.12	181.37
0.00	ANNUAL ALL 00000005			
586717.17000	4161475.38000	0.00001	20.98	181.37
0.00	ANNUAL ALL 00000005			
586737.17000	4161475.38000	0.00001	20.94	181.37
0.00	ANNUAL ALL 00000005			
586757.17000	4161475.38000	0.00001	20.84	181.37
0.00	ANNUAL ALL 00000005			
586777.17000	4161475.38000	0.00000	20.79	191.13
0.00	ANNUAL ALL 00000005			
586797.17000	4161475.38000	0.00000	20.81	192.17
0.00	ANNUAL ALL 00000005			

586817.17000	4161475.38000	0.00000	20.64	192.17
0.00	ANNUAL ALL 00000005			
586837.17000	4161475.38000	0.00000	20.52	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161495.38000	0.00000	21.38	21.38
0.00	ANNUAL ALL 00000005			
586617.17000	4161495.38000	0.00000	21.17	21.17
0.00	ANNUAL ALL 00000005			
586637.17000	4161495.38000	0.00001	21.15	181.37
0.00	ANNUAL ALL 00000005			
586677.17000	4161495.38000	0.00001	21.24	181.37
0.00	ANNUAL ALL 00000005			
586697.17000	4161495.38000	0.00001	21.21	181.37
0.00	ANNUAL ALL 00000005			
586717.17000	4161495.38000	0.00001	21.02	181.37
0.00	ANNUAL ALL 00000005			
586737.17000	4161495.38000	0.00001	20.88	181.37
0.00	ANNUAL ALL 00000005			
586757.17000	4161495.38000	0.00000	20.70	181.37
0.00	ANNUAL ALL 00000005			
586777.17000	4161495.38000	0.00000	20.64	192.17
0.00	ANNUAL ALL 00000005			
586797.17000	4161495.38000	0.00000	20.58	192.17
0.00	ANNUAL ALL 00000005			
586817.17000	4161495.38000	0.00000	20.76	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161515.38000	0.00000	21.27	21.27
0.00	ANNUAL ALL 00000005			
586617.17000	4161515.38000	0.00001	21.26	181.37
0.00	ANNUAL ALL 00000005			
586637.17000	4161515.38000	0.00001	21.29	181.37
0.00	ANNUAL ALL 00000005			
586697.17000	4161515.38000	0.00001	21.34	181.37
0.00	ANNUAL ALL 00000005			
586717.17000	4161515.38000	0.00001	21.07	181.37
0.00	ANNUAL ALL 00000005			
586737.17000	4161515.38000	0.00001	20.95	181.37
0.00	ANNUAL ALL 00000005			
586757.17000	4161515.38000	0.00000	20.69	192.17
0.00	ANNUAL ALL 00000005			
586777.17000	4161515.38000	0.00000	20.51	192.17
0.00	ANNUAL ALL 00000005			
586797.17000	4161515.38000	0.00000	20.56	192.17
0.00	ANNUAL ALL 00000005			
586817.17000	4161515.38000	0.00000	20.73	192.17
0.00	ANNUAL ALL 00000005			
586837.17000	4161515.38000	0.00000	20.52	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161535.38000	0.00000	21.35	21.35
0.00	ANNUAL ALL 00000005			
586617.17000	4161535.38000	0.00001	21.32	181.37
0.00	ANNUAL ALL 00000005			

586637.17000	4161535.38000	0.00001	21.49	181.37
0.00	ANNUAL ALL 00000005			
586697.17000	4161535.38000	0.00001	21.42	181.37
0.00	ANNUAL ALL 00000005			
586717.17000	4161535.38000	0.00001	21.18	181.37
0.00	ANNUAL ALL 00000005			
586737.17000	4161535.38000	0.00000	20.95	191.71
0.00	ANNUAL ALL 00000005			
586757.17000	4161535.38000	0.00000	20.84	192.17
0.00	ANNUAL ALL 00000005			
586777.17000	4161535.38000	0.00000	20.78	192.17
0.00	ANNUAL ALL 00000005			
586797.17000	4161535.38000	0.00000	20.86	192.17
0.00	ANNUAL ALL 00000005			
586817.17000	4161535.38000	0.00000	20.64	192.17
0.00	ANNUAL ALL 00000005			
586837.17000	4161535.38000	0.00000	20.65	192.17
0.00	ANNUAL ALL 00000005			
586857.17000	4161535.38000	0.00000	20.50	192.17
0.00	ANNUAL ALL 00000005			
586877.17000	4161535.38000	0.00000	20.48	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161555.38000	0.00000	21.57	181.17
0.00	ANNUAL ALL 00000005			
586617.17000	4161555.38000	0.00001	21.57	181.37
0.00	ANNUAL ALL 00000005			
586637.17000	4161555.38000	0.00001	21.54	181.37
0.00	ANNUAL ALL 00000005			
586657.17000	4161555.38000	0.00001	21.66	181.37
0.00	ANNUAL ALL 00000005			
586697.17000	4161555.38000	0.00001	21.76	181.37
0.00	ANNUAL ALL 00000005			
586717.17000	4161555.38000	0.00001	21.36	181.37
0.00	ANNUAL ALL 00000005			
586737.17000	4161555.38000	0.00000	21.24	192.17
0.00	ANNUAL ALL 00000005			
586757.17000	4161555.38000	0.00000	21.15	192.17
0.00	ANNUAL ALL 00000005			
586777.17000	4161555.38000	0.00000	21.05	192.17
0.00	ANNUAL ALL 00000005			
586797.17000	4161555.38000	0.00000	20.95	192.17
0.00	ANNUAL ALL 00000005			
586817.17000	4161555.38000	0.00000	20.98	192.17
0.00	ANNUAL ALL 00000005			
586837.17000	4161555.38000	0.00000	20.75	192.17
0.00	ANNUAL ALL 00000005			
586857.17000	4161555.38000	0.00000	20.71	192.17
0.00	ANNUAL ALL 00000005			
586877.17000	4161555.38000	0.00000	20.51	192.17
0.00	ANNUAL ALL 00000005			
586897.17000	4161555.38000	0.00002	20.34	192.17
0.00	ANNUAL ALL 00000005			

586597.17000	4161575.38000	0.00000	21.75	181.37
0.00	ANNUAL ALL 00000005			
586617.17000	4161575.38000	0.00001	21.68	181.37
0.00	ANNUAL ALL 00000005			
586637.17000	4161575.38000	0.00001	21.75	181.37
0.00	ANNUAL ALL 00000005			
586657.17000	4161575.38000	0.00001	21.89	181.37
0.00	ANNUAL ALL 00000005			
586697.17000	4161575.38000	0.00001	21.87	181.37
0.00	ANNUAL ALL 00000005			
586717.17000	4161575.38000	0.00001	21.67	181.37
0.00	ANNUAL ALL 00000005			
586737.17000	4161575.38000	0.00001	21.45	192.17
0.00	ANNUAL ALL 00000005			
586757.17000	4161575.38000	0.00000	21.26	192.17
0.00	ANNUAL ALL 00000005			
586777.17000	4161575.38000	0.00000	21.10	192.17
0.00	ANNUAL ALL 00000005			
586797.17000	4161575.38000	0.00000	20.98	192.17
0.00	ANNUAL ALL 00000005			
586817.17000	4161575.38000	0.00000	20.97	192.17
0.00	ANNUAL ALL 00000005			
586837.17000	4161575.38000	0.00000	20.89	192.17
0.00	ANNUAL ALL 00000005			
586857.17000	4161575.38000	0.00000	20.86	192.17
0.00	ANNUAL ALL 00000005			
586877.17000	4161575.38000	0.00001	20.78	192.17
0.00	ANNUAL ALL 00000005			
586897.17000	4161575.38000	0.00002	20.38	192.17
0.00	ANNUAL ALL 00000005			
586917.17000	4161575.38000	0.00003	20.21	192.17
0.00	ANNUAL ALL 00000005			
586937.17000	4161575.38000	0.00005	20.65	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161595.38000	0.00000	21.88	181.37
0.00	ANNUAL ALL 00000005			
586617.17000	4161595.38000	0.00001	22.08	181.37
0.00	ANNUAL ALL 00000005			
586637.17000	4161595.38000	0.00001	22.05	181.37
0.00	ANNUAL ALL 00000005			
586657.17000	4161595.38000	0.00001	22.09	181.37
0.00	ANNUAL ALL 00000005			
586717.17000	4161595.38000	0.00001	22.01	192.17
0.00	ANNUAL ALL 00000005			
586737.17000	4161595.38000	0.00001	21.64	192.17
0.00	ANNUAL ALL 00000005			
586757.17000	4161595.38000	0.00001	21.22	192.17
0.00	ANNUAL ALL 00000005			
586777.17000	4161595.38000	0.00001	21.02	192.17
0.00	ANNUAL ALL 00000005			
586797.17000	4161595.38000	0.00000	20.93	192.17
0.00	ANNUAL ALL 00000005			

586817.17000	4161595.38000	0.00000	20.85	192.17
0.00	ANNUAL ALL 00000005			
586837.17000	4161595.38000	0.00000	20.83	192.17
0.00	ANNUAL ALL 00000005			
586857.17000	4161595.38000	0.00000	20.74	192.17
0.00	ANNUAL ALL 00000005			
586877.17000	4161595.38000	0.00001	20.92	192.17
0.00	ANNUAL ALL 00000005			
586897.17000	4161595.38000	0.00002	20.62	192.17
0.00	ANNUAL ALL 00000005			
586917.17000	4161595.38000	0.00003	20.43	192.17
0.00	ANNUAL ALL 00000005			
586937.17000	4161595.38000	0.00004	20.30	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161615.38000	0.00001	22.18	181.37
0.00	ANNUAL ALL 00000005			
586617.17000	4161615.38000	0.00001	22.13	181.37
0.00	ANNUAL ALL 00000005			
586637.17000	4161615.38000	0.00001	22.20	181.37
0.00	ANNUAL ALL 00000005			
586657.17000	4161615.38000	0.00001	22.24	181.37
0.00	ANNUAL ALL 00000005			
586717.17000	4161615.38000	0.00001	22.23	192.17
0.00	ANNUAL ALL 00000005			
586737.17000	4161615.38000	0.00001	21.80	192.17
0.00	ANNUAL ALL 00000005			
586757.17000	4161615.38000	0.00001	21.35	192.17
0.00	ANNUAL ALL 00000005			
586777.17000	4161615.38000	0.00001	20.99	192.17
0.00	ANNUAL ALL 00000005			
586797.17000	4161615.38000	0.00001	20.92	192.17
0.00	ANNUAL ALL 00000005			
586817.17000	4161615.38000	0.00001	20.91	192.17
0.00	ANNUAL ALL 00000005			
586837.17000	4161615.38000	0.00001	20.79	192.17
0.00	ANNUAL ALL 00000005			
586857.17000	4161615.38000	0.00001	20.80	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161615.38000	0.00004	20.85	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161615.38000	0.00004	20.36	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161615.38000	0.00004	20.14	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161635.38000	0.00001	22.41	181.37
0.00	ANNUAL ALL 00000005			
586617.17000	4161635.38000	0.00001	22.26	181.37
0.00	ANNUAL ALL 00000005			
586637.17000	4161635.38000	0.00001	22.30	181.37
0.00	ANNUAL ALL 00000005			
586657.17000	4161635.38000	0.00001	22.63	181.37
0.00	ANNUAL ALL 00000005			

586677.17000	4161635.38000	0.00001	22.81	181.37
0.00	ANNUAL ALL 00000005			
586717.17000	4161635.38000	0.00001	22.43	192.17
0.00	ANNUAL ALL 00000005			
586737.17000	4161635.38000	0.00001	22.00	192.17
0.00	ANNUAL ALL 00000005			
586757.17000	4161635.38000	0.00001	21.56	192.17
0.00	ANNUAL ALL 00000005			
586777.17000	4161635.38000	0.00001	21.23	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161635.38000	0.00003	21.08	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161635.38000	0.00003	20.81	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161635.38000	0.00003	19.80	192.17
0.00	ANNUAL ALL 00000005			
586597.17000	4161655.38000	0.00001	22.38	181.37
0.00	ANNUAL ALL 00000005			
586617.17000	4161655.38000	0.00001	22.45	181.37
0.00	ANNUAL ALL 00000005			
586637.17000	4161655.38000	0.00001	22.47	181.37
0.00	ANNUAL ALL 00000005			
586657.17000	4161655.38000	0.00001	22.79	181.37
0.00	ANNUAL ALL 00000005			
586677.17000	4161655.38000	0.00001	23.00	181.37
0.00	ANNUAL ALL 00000005			
586717.17000	4161655.38000	0.00001	22.48	192.17
0.00	ANNUAL ALL 00000005			
586797.17000	4161655.38000	0.00001	21.51	192.17
0.00	ANNUAL ALL 00000005			
586817.17000	4161655.38000	0.00001	21.57	192.17
0.00	ANNUAL ALL 00000005			
586837.17000	4161655.38000	0.00001	21.46	192.17
0.00	ANNUAL ALL 00000005			
586957.17000	4161655.38000	0.00003	20.68	192.17
0.00	ANNUAL ALL 00000005			
586977.17000	4161655.38000	0.00003	21.03	192.17
0.00	ANNUAL ALL 00000005			
586997.17000	4161655.38000	0.00003	20.69	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161195.94000	0.00001	17.78	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161195.94000	0.00001	17.58	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161215.94000	0.00001	17.79	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161215.94000	0.00001	18.17	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161215.94000	0.00001	17.98	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161235.94000	0.00001	17.56	192.17
0.00	ANNUAL ALL 00000005			

587361.41000	4161235.94000	0.00001	18.13	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161235.94000	0.00001	17.67	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161235.94000	0.00001	17.97	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161255.94000	0.00001	17.51	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161255.94000	0.00001	18.17	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161255.94000	0.00001	17.66	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161255.94000	0.00001	17.76	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161255.94000	0.00001	17.60	192.17
0.00	ANNUAL ALL 00000005			
587021.41000	4161275.94000	0.00001	18.47	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161275.94000	0.00001	17.54	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161275.94000	0.00001	17.96	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161275.94000	0.00001	17.67	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161275.94000	0.00001	17.90	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161275.94000	0.00001	18.28	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161275.94000	0.00001	18.13	192.17
0.00	ANNUAL ALL 00000005			
587021.41000	4161295.94000	0.00001	18.46	192.17
0.00	ANNUAL ALL 00000005			
587041.41000	4161295.94000	0.00001	18.37	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161295.94000	0.00001	18.09	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161295.94000	0.00001	17.69	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161295.94000	0.00001	17.61	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161295.94000	0.00001	17.84	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161295.94000	0.00001	18.46	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161295.94000	0.00001	18.54	192.17
0.00	ANNUAL ALL 00000005			
587021.41000	4161315.94000	0.00001	18.31	192.17
0.00	ANNUAL ALL 00000005			
587041.41000	4161315.94000	0.00002	18.23	192.17
0.00	ANNUAL ALL 00000005			
587061.41000	4161315.94000	0.00002	18.22	192.17
0.00	ANNUAL ALL 00000005			

587281.41000	4161315.94000	0.00001	18.21	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161315.94000	0.00001	17.82	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161315.94000	0.00001	17.86	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161315.94000	0.00001	18.20	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161315.94000	0.00001	18.16	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161315.94000	0.00001	18.24	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161315.94000	0.00001	19.10	192.17
0.00	ANNUAL ALL 00000005			
587021.41000	4161335.94000	0.00002	18.34	192.17
0.00	ANNUAL ALL 00000005			
587041.41000	4161335.94000	0.00002	18.24	192.17
0.00	ANNUAL ALL 00000005			
587061.41000	4161335.94000	0.00002	18.23	192.17
0.00	ANNUAL ALL 00000005			
587081.41000	4161335.94000	0.00002	18.11	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161335.94000	0.00002	17.47	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161335.94000	0.00002	18.06	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161335.94000	0.00001	17.90	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161335.94000	0.00001	18.14	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161335.94000	0.00001	18.85	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161335.94000	0.00001	18.66	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161335.94000	0.00001	18.36	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161335.94000	0.00001	18.85	192.17
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587021.41000	4161355.94000	0.00002	18.49	192.17
0.00	ANNUAL ALL 00000005			
587041.41000	4161355.94000	0.00002	18.31	192.17
0.00	ANNUAL ALL 00000005			
587061.41000	4161355.94000	0.00002	18.16	192.17
0.00	ANNUAL ALL 00000005			
587081.41000	4161355.94000	0.00002	18.08	192.17
0.00	ANNUAL ALL 00000005			
587101.41000	4161355.94000	0.00002	18.00	192.17
0.00	ANNUAL ALL 00000005			
587241.41000	4161355.94000	0.00002	17.99	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161355.94000	0.00002	17.85	192.17
0.00	ANNUAL ALL 00000005			

587281.41000	4161355.94000	0.00002	17.66	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161355.94000	0.00002	18.40	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161355.94000	0.00001	18.83	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161355.94000	0.00001	18.97	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161355.94000	0.00001	18.47	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161355.94000	0.00001	18.81	192.17
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587401.41000	4161355.94000	0.00001	18.96	192.17
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587021.41000	4161375.94000	0.00003	18.55	192.17
0.00	ANNUAL ALL 00000005			
587041.41000	4161375.94000	0.00003	18.28	192.17
0.00	ANNUAL ALL 00000005			
587061.41000	4161375.94000	0.00003	18.42	192.17
0.00	ANNUAL ALL 00000005			
587081.41000	4161375.94000	0.00003	18.41	192.17
0.00	ANNUAL ALL 00000005			
587101.41000	4161375.94000	0.00003	17.98	192.17
0.00	ANNUAL ALL 00000005			
587121.41000	4161375.94000	0.00003	17.89	192.17
0.00	ANNUAL ALL 00000005			
587221.41000	4161375.94000	0.00002	18.54	192.17
0.00	ANNUAL ALL 00000005			
587241.41000	4161375.94000	0.00002	18.36	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161375.94000	0.00002	18.02	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161375.94000	0.00002	17.90	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161375.94000	0.00002	17.72	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161375.94000	0.00002	18.98	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161375.94000	0.00001	18.63	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161375.94000	0.00001	18.73	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161375.94000	0.00001	18.94	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161375.94000	0.00001	19.40	192.17
0.00	ANNUAL ALL 00000005			
587021.41000	4161395.94000	0.00003	18.35	192.17
0.00	ANNUAL ALL 00000005			
587041.41000	4161395.94000	0.00003	18.75	192.17
0.00	ANNUAL ALL 00000005			
587061.41000	4161395.94000	0.00003	18.73	192.17
0.00	ANNUAL ALL 00000005			

587081.41000	4161395.94000	0.00003	18.60	192.17
0.00	ANNUAL ALL 00000005			
587101.41000	4161395.94000	0.00003	18.45	192.17
0.00	ANNUAL ALL 00000005			
587121.41000	4161395.94000	0.00003	17.76	192.17
0.00	ANNUAL ALL 00000005			
587141.41000	4161395.94000	0.00003	18.01	192.17
0.00	ANNUAL ALL 00000005			
587201.41000	4161395.94000	0.00002	18.43	192.17
0.00	ANNUAL ALL 00000005			
587221.41000	4161395.94000	0.00002	18.31	192.17
0.00	ANNUAL ALL 00000005			
587241.41000	4161395.94000	0.00002	18.00	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161395.94000	0.00002	18.45	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161395.94000	0.00002	18.32	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161395.94000	0.00002	17.81	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161395.94000	0.00002	18.05	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161395.94000	0.00002	18.68	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161395.94000	0.00001	18.87	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161395.94000	0.00001	19.45	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161395.94000	0.00001	19.61	192.17
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587061.41000	4161415.94000	0.00004	18.42	192.17
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587081.41000	4161415.94000	0.00003	18.69	192.17
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587101.41000	4161415.94000	0.00003	18.56	192.17
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587121.41000	4161415.94000	0.00003	18.41	192.17
0.00	ANNUAL ALL 00000005			
587141.41000	4161415.94000	0.00003	18.20	192.17
0.00	ANNUAL ALL 00000005			
587181.41000	4161415.94000	0.00003	18.47	192.17
0.00	ANNUAL ALL 00000005			
587201.41000	4161415.94000	0.00002	18.45	192.17
0.00	ANNUAL ALL 00000005			
587221.41000	4161415.94000	0.00002	18.05	192.17
0.00	ANNUAL ALL 00000005			
587241.41000	4161415.94000	0.00002	18.11	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161415.94000	0.00002	17.97	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161415.94000	0.00002	18.49	192.17
0.00	ANNUAL ALL 00000005			

587301.41000	4161415.94000	0.00002	18.67	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161415.94000	0.00002	18.43	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161415.94000	0.00002	18.68	192.17
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587361.41000	4161415.94000	0.00001	19.37	192.17
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587381.41000	4161415.94000	0.00001	20.18	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161415.94000	0.00001	19.97	192.17
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587081.41000	4161435.94000	0.00004	18.13	192.17
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587101.41000	4161435.94000	0.00004	18.60	192.17
0.00	ANNUAL ALL 00000005			
587121.41000	4161435.94000	0.00003	18.53	192.17
0.00	ANNUAL ALL 00000005			
587161.41000	4161435.94000	0.00003	18.58	192.17
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587181.41000	4161435.94000	0.00003	18.60	192.17
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587201.41000	4161435.94000	0.00003	18.15	192.17
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587221.41000	4161435.94000	0.00002	18.48	192.17
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587241.41000	4161435.94000	0.00002	18.48	192.17
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587261.41000	4161435.94000	0.00002	18.34	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161435.94000	0.00002	18.26	192.17
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587301.41000	4161435.94000	0.00002	19.01	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161435.94000	0.00002	19.30	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161435.94000	0.00002	19.16	192.17
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587361.41000	4161435.94000	0.00002	20.00	192.17
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587381.41000	4161435.94000	0.00001	20.35	192.17
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587401.41000	4161435.94000	0.00001	20.78	192.17
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587101.41000	4161455.94000	0.00004	18.20	192.17
0.00	ANNUAL ALL 00000005			
587141.41000	4161455.94000	0.00003	18.52	192.17
0.00	ANNUAL ALL 00000005			
587161.41000	4161455.94000	0.00003	18.71	192.17
0.00	ANNUAL ALL 00000005			
587181.41000	4161455.94000	0.00003	18.31	192.17
0.00	ANNUAL ALL 00000005			

587201.41000	4161455.94000	0.00003	18.12	192.17
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587221.41000	4161455.94000	0.00002	18.43	192.17
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587241.41000	4161455.94000	0.00002	18.64	192.17
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587261.41000	4161455.94000	0.00002	18.62	192.17
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587281.41000	4161455.94000	0.00002	18.86	192.17
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587301.41000	4161455.94000	0.00002	18.95	192.17
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587321.41000	4161455.94000	0.00002	19.45	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161455.94000	0.00002	19.41	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161455.94000	0.00002	19.75	192.17
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587381.41000	4161455.94000	0.00001	20.28	192.17
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587401.41000	4161455.94000	0.00001	20.61	192.17
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587141.41000	4161475.94000	0.00003	18.79	192.17
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587161.41000	4161475.94000	0.00003	18.39	192.17
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587181.41000	4161475.94000	0.00003	18.47	192.17
0.00	ANNUAL ALL 00000005			
587201.41000	4161475.94000	0.00003	18.58	192.17
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587221.41000	4161475.94000	0.00002	18.25	192.17
0.00	ANNUAL ALL 00000005			
587241.41000	4161475.94000	0.00002	18.32	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161475.94000	0.00002	18.74	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161475.94000	0.00002	19.32	192.17
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587301.41000	4161475.94000	0.00002	19.50	192.17
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587321.41000	4161475.94000	0.00002	19.46	192.17
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587341.41000	4161475.94000	0.00002	20.15	192.17
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587361.41000	4161475.94000	0.00002	19.80	192.17
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587381.41000	4161475.94000	0.00001	19.93	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161475.94000	0.00001	20.26	192.17
0.00	ANNUAL ALL 00000005			
587121.41000	4161495.94000	0.00004	18.84	192.17
0.00	ANNUAL ALL 00000005			

587141.41000	4161495.94000	0.00004	18.41	192.17
0.00	ANNUAL ALL 00000005			
587161.41000	4161495.94000	0.00003	18.57	192.17
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587181.41000	4161495.94000	0.00003	18.74	192.17
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587201.41000	4161495.94000	0.00003	18.83	192.17
0.00	ANNUAL ALL 00000005			
587221.41000	4161495.94000	0.00003	18.54	192.17
0.00	ANNUAL ALL 00000005			
587241.41000	4161495.94000	0.00002	18.40	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161495.94000	0.00002	18.84	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161495.94000	0.00002	19.19	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161495.94000	0.00002	19.39	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161495.94000	0.00002	19.73	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161495.94000	0.00002	20.20	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161495.94000	0.00002	20.32	192.17
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587381.41000	4161495.94000	0.00001	19.94	192.17
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587401.41000	4161495.94000	0.00001	20.05	192.17
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587101.41000	4161515.94000	0.00004	19.09	192.17
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587121.41000	4161515.94000	0.00004	18.56	192.17
0.00	ANNUAL ALL 00000005			
587141.41000	4161515.94000	0.00004	18.57	192.17
0.00	ANNUAL ALL 00000005			
587161.41000	4161515.94000	0.00003	18.80	192.17
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587181.41000	4161515.94000	0.00003	19.02	192.17
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587201.41000	4161515.94000	0.00003	18.84	192.17
0.00	ANNUAL ALL 00000005			
587221.41000	4161515.94000	0.00002	18.52	192.17
0.00	ANNUAL ALL 00000005			
587241.41000	4161515.94000	0.00002	18.86	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161515.94000	0.00002	19.08	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161515.94000	0.00002	19.34	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161515.94000	0.00002	19.30	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161515.94000	0.00002	19.53	192.17
0.00	ANNUAL ALL 00000005			

587341.41000	4161515.94000	0.00002	19.92	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161515.94000	0.00002	20.35	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161515.94000	0.00001	20.64	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161515.94000	0.00001	20.45	192.17
0.00	ANNUAL ALL 00000005			
587081.41000	4161535.94000	0.00005	19.74	192.17
0.00	ANNUAL ALL 00000005			
587101.41000	4161535.94000	0.00004	19.05	192.17
0.00	ANNUAL ALL 00000005			
587121.41000	4161535.94000	0.00004	18.55	192.17
0.00	ANNUAL ALL 00000005			
587141.41000	4161535.94000	0.00003	18.97	192.17
0.00	ANNUAL ALL 00000005			
587161.41000	4161535.94000	0.00003	19.09	192.17
0.00	ANNUAL ALL 00000005			
587181.41000	4161535.94000	0.00003	19.03	192.17
0.00	ANNUAL ALL 00000005			
587201.41000	4161535.94000	0.00003	18.52	192.17
0.00	ANNUAL ALL 00000005			
587221.41000	4161535.94000	0.00002	18.90	192.17
0.00	ANNUAL ALL 00000005			
587241.41000	4161535.94000	0.00002	19.13	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161535.94000	0.00002	19.35	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161535.94000	0.00002	19.70	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161535.94000	0.00002	19.96	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161535.94000	0.00002	19.64	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161535.94000	0.00002	19.76	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161535.94000	0.00001	20.06	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161535.94000	0.00001	20.51	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161535.94000	0.00001	20.85	192.17
0.00	ANNUAL ALL 00000005			
587061.41000	4161555.94000	0.00005	20.11	192.17
0.00	ANNUAL ALL 00000005			
587081.41000	4161555.94000	0.00004	19.69	192.17
0.00	ANNUAL ALL 00000005			
587101.41000	4161555.94000	0.00004	19.23	192.17
0.00	ANNUAL ALL 00000005			
587121.41000	4161555.94000	0.00004	19.41	192.17
0.00	ANNUAL ALL 00000005			
587141.41000	4161555.94000	0.00003	19.31	192.17
0.00	ANNUAL ALL 00000005			

587161.41000	4161555.94000	0.00003	19.14	192.17
0.00	ANNUAL ALL 00000005			
587181.41000	4161555.94000	0.00003	18.72	192.17
0.00	ANNUAL ALL 00000005			
587201.41000	4161555.94000	0.00003	19.01	192.17
0.00	ANNUAL ALL 00000005			
587221.41000	4161555.94000	0.00002	19.13	192.17
0.00	ANNUAL ALL 00000005			
587241.41000	4161555.94000	0.00002	19.22	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161555.94000	0.00002	19.63	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161555.94000	0.00002	19.93	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161555.94000	0.00002	20.17	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161555.94000	0.00002	20.12	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161555.94000	0.00002	19.54	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161555.94000	0.00001	20.18	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161555.94000	0.00001	20.43	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161555.94000	0.00001	21.64	192.17
0.00	ANNUAL ALL 00000005			
587041.41000	4161575.94000	0.00005	19.65	192.17
0.00	ANNUAL ALL 00000005			
587061.41000	4161575.94000	0.00005	19.88	192.17
0.00	ANNUAL ALL 00000005			
587081.41000	4161575.94000	0.00004	19.64	192.17
0.00	ANNUAL ALL 00000005			
587101.41000	4161575.94000	0.00004	19.88	192.17
0.00	ANNUAL ALL 00000005			
587121.41000	4161575.94000	0.00003	19.80	192.17
0.00	ANNUAL ALL 00000005			
587141.41000	4161575.94000	0.00003	19.59	192.17
0.00	ANNUAL ALL 00000005			
587161.41000	4161575.94000	0.00003	18.98	192.17
0.00	ANNUAL ALL 00000005			
587181.41000	4161575.94000	0.00003	19.13	192.17
0.00	ANNUAL ALL 00000005			
587201.41000	4161575.94000	0.00002	19.20	192.17
0.00	ANNUAL ALL 00000005			
587221.41000	4161575.94000	0.00002	19.24	192.17
0.00	ANNUAL ALL 00000005			
587241.41000	4161575.94000	0.00002	19.60	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161575.94000	0.00002	19.84	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161575.94000	0.00002	20.13	192.17
0.00	ANNUAL ALL 00000005			

587301.41000	4161575.94000	0.00002	19.98	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161575.94000	0.00002	19.69	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161575.94000	0.00002	20.07	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161575.94000	0.00001	20.35	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161575.94000	0.00001	21.53	192.17
0.00	ANNUAL ALL 00000005			
587401.41000	4161575.94000	0.00001	21.68	192.17
0.00	ANNUAL ALL 00000005			
587001.41000	4161595.94000	0.00005	20.08	192.17
0.00	ANNUAL ALL 00000005			
587021.41000	4161595.94000	0.00005	20.08	192.17
0.00	ANNUAL ALL 00000005			
587041.41000	4161595.94000	0.00004	19.69	192.17
0.00	ANNUAL ALL 00000005			
587061.41000	4161595.94000	0.00004	19.41	192.17
0.00	ANNUAL ALL 00000005			
587081.41000	4161595.94000	0.00004	19.68	192.17
0.00	ANNUAL ALL 00000005			
587101.41000	4161595.94000	0.00003	20.08	192.17
0.00	ANNUAL ALL 00000005			
587121.41000	4161595.94000	0.00003	20.01	192.17
0.00	ANNUAL ALL 00000005			
587141.41000	4161595.94000	0.00003	19.42	192.17
0.00	ANNUAL ALL 00000005			
587161.41000	4161595.94000	0.00003	19.44	192.17
0.00	ANNUAL ALL 00000005			
587181.41000	4161595.94000	0.00003	19.43	192.17
0.00	ANNUAL ALL 00000005			
587201.41000	4161595.94000	0.00002	19.33	192.17
0.00	ANNUAL ALL 00000005			
587221.41000	4161595.94000	0.00002	19.56	192.17
0.00	ANNUAL ALL 00000005			
587241.41000	4161595.94000	0.00002	19.88	192.17
0.00	ANNUAL ALL 00000005			
587261.41000	4161595.94000	0.00002	20.16	192.17
0.00	ANNUAL ALL 00000005			
587281.41000	4161595.94000	0.00002	20.22	192.17
0.00	ANNUAL ALL 00000005			
587301.41000	4161595.94000	0.00002	19.71	192.17
0.00	ANNUAL ALL 00000005			
587321.41000	4161595.94000	0.00002	20.08	192.17
0.00	ANNUAL ALL 00000005			
587341.41000	4161595.94000	0.00001	20.44	192.17
0.00	ANNUAL ALL 00000005			
587361.41000	4161595.94000	0.00001	21.06	192.17
0.00	ANNUAL ALL 00000005			
587381.41000	4161595.94000	0.00001	21.50	192.17
0.00	ANNUAL ALL 00000005			

587401.41000	4161595.94000	0.00001	21.56	192.17
0.00	ANNUAL ALL 00000005			
586851.59000	4160859.89000	0.00000	15.67	15.67
0.00	ANNUAL ALL 00000005			
586871.59000	4160859.89000	0.00000	15.76	15.76
0.00	ANNUAL ALL 00000005			
586891.59000	4160859.89000	0.00000	15.85	15.85
0.00	ANNUAL ALL 00000005			
586911.59000	4160859.89000	0.00000	15.84	15.84
0.00	ANNUAL ALL 00000005			
586931.59000	4160859.89000	0.00000	15.75	15.75
0.00	ANNUAL ALL 00000005			
586951.59000	4160859.89000	0.00000	15.83	15.83
0.00	ANNUAL ALL 00000005			
586971.59000	4160859.89000	0.00000	15.96	15.96
0.00	ANNUAL ALL 00000005			
586991.59000	4160859.89000	0.00000	13.76	16.23
0.00	ANNUAL ALL 00000005			
587011.59000	4160859.89000	0.00000	15.63	15.63
0.00	ANNUAL ALL 00000005			
587031.59000	4160859.89000	0.00000	15.76	15.76
0.00	ANNUAL ALL 00000005			
587051.59000	4160859.89000	0.00000	15.64	15.64
0.00	ANNUAL ALL 00000005			
586831.59000	4160879.89000	0.00000	16.09	16.09
0.00	ANNUAL ALL 00000005			
586851.59000	4160879.89000	0.00000	16.01	16.01
0.00	ANNUAL ALL 00000005			
586871.59000	4160879.89000	0.00000	16.01	16.01
0.00	ANNUAL ALL 00000005			
586891.59000	4160879.89000	0.00000	15.90	15.90
0.00	ANNUAL ALL 00000005			
586911.59000	4160879.89000	0.00000	15.60	15.60
0.00	ANNUAL ALL 00000005			
586931.59000	4160879.89000	0.00000	15.63	15.63
0.00	ANNUAL ALL 00000005			
586951.59000	4160879.89000	0.00000	15.87	15.87
0.00	ANNUAL ALL 00000005			
586971.59000	4160879.89000	0.00000	16.19	16.19
0.00	ANNUAL ALL 00000005			
586991.59000	4160879.89000	0.00000	13.78	16.23
0.00	ANNUAL ALL 00000005			
587011.59000	4160879.89000	0.00000	15.47	15.47
0.00	ANNUAL ALL 00000005			
587031.59000	4160879.89000	0.00000	15.63	15.63
0.00	ANNUAL ALL 00000005			
587051.59000	4160879.89000	0.00000	15.67	15.67
0.00	ANNUAL ALL 00000005			
586811.59000	4160899.89000	0.00000	16.55	16.55
0.00	ANNUAL ALL 00000005			
586831.59000	4160899.89000	0.00000	16.27	16.27
0.00	ANNUAL ALL 00000005			

586851.59000	4160899.89000	0.00000	16.12	16.12
0.00	ANNUAL ALL 00000005			
586871.59000	4160899.89000	0.00000	15.84	15.84
0.00	ANNUAL ALL 00000005			
586891.59000	4160899.89000	0.00000	15.43	15.43
0.00	ANNUAL ALL 00000005			
586911.59000	4160899.89000	0.00000	15.50	15.50
0.00	ANNUAL ALL 00000005			
586931.59000	4160899.89000	0.00000	15.73	15.73
0.00	ANNUAL ALL 00000005			
586951.59000	4160899.89000	0.00000	15.78	15.78
0.00	ANNUAL ALL 00000005			
586971.59000	4160899.89000	0.00000	15.93	15.93
0.00	ANNUAL ALL 00000005			
586991.59000	4160899.89000	0.00000	14.49	16.16
0.00	ANNUAL ALL 00000005			
587011.59000	4160899.89000	0.00000	15.43	15.43
0.00	ANNUAL ALL 00000005			
587031.59000	4160899.89000	0.00000	15.54	15.54
0.00	ANNUAL ALL 00000005			
587051.59000	4160899.89000	0.00000	15.70	15.70
0.00	ANNUAL ALL 00000005			
586791.59000	4160919.89000	0.00000	16.61	16.61
0.00	ANNUAL ALL 00000005			
586811.59000	4160919.89000	0.00000	16.59	16.59
0.00	ANNUAL ALL 00000005			
586831.59000	4160919.89000	0.00000	16.21	16.21
0.00	ANNUAL ALL 00000005			
586851.59000	4160919.89000	0.00000	15.79	15.79
0.00	ANNUAL ALL 00000005			
586871.59000	4160919.89000	0.00000	15.32	15.32
0.00	ANNUAL ALL 00000005			
586891.59000	4160919.89000	0.00000	15.31	15.31
0.00	ANNUAL ALL 00000005			
586911.59000	4160919.89000	0.00000	16.02	16.02
0.00	ANNUAL ALL 00000005			
586931.59000	4160919.89000	0.00000	15.97	15.97
0.00	ANNUAL ALL 00000005			
586951.59000	4160919.89000	0.00000	15.44	15.44
0.00	ANNUAL ALL 00000005			
586971.59000	4160919.89000	0.00000	15.90	15.90
0.00	ANNUAL ALL 00000005			
586991.59000	4160919.89000	0.00000	16.01	16.01
0.00	ANNUAL ALL 00000005			
587011.59000	4160919.89000	0.00000	15.22	15.45
0.00	ANNUAL ALL 00000005			
587031.59000	4160919.89000	0.00000	15.66	15.66
0.00	ANNUAL ALL 00000005			
587051.59000	4160919.89000	0.00000	15.76	15.76
0.00	ANNUAL ALL 00000005			
586771.59000	4160939.89000	0.00000	16.33	16.33
0.00	ANNUAL ALL 00000005			

586791.59000	4160939.89000	0.00000	16.45	16.45
0.00	ANNUAL ALL 00000005			
586811.59000	4160939.89000	0.00000	16.25	16.25
0.00	ANNUAL ALL 00000005			
586831.59000	4160939.89000	0.00000	15.77	15.77
0.00	ANNUAL ALL 00000005			
586851.59000	4160939.89000	0.00000	15.21	15.21
0.00	ANNUAL ALL 00000005			
586871.59000	4160939.89000	0.00000	15.20	15.20
0.00	ANNUAL ALL 00000005			
586891.59000	4160939.89000	0.00000	15.50	15.50
0.00	ANNUAL ALL 00000005			
586911.59000	4160939.89000	0.00000	16.22	16.22
0.00	ANNUAL ALL 00000005			
586931.59000	4160939.89000	0.00000	15.36	15.36
0.00	ANNUAL ALL 00000005			
586951.59000	4160939.89000	0.00000	15.39	15.39
0.00	ANNUAL ALL 00000005			
586971.59000	4160939.89000	0.00000	16.16	16.16
0.00	ANNUAL ALL 00000005			
586991.59000	4160939.89000	0.00000	16.20	16.20
0.00	ANNUAL ALL 00000005			
587011.59000	4160939.89000	0.00000	15.19	15.19
0.00	ANNUAL ALL 00000005			
587031.59000	4160939.89000	0.00000	15.71	15.71
0.00	ANNUAL ALL 00000005			
587051.59000	4160939.89000	0.00000	15.78	15.78
0.00	ANNUAL ALL 00000005			
586731.59000	4160959.89000	0.00000	15.93	15.93
0.00	ANNUAL ALL 00000005			
586751.59000	4160959.89000	0.00000	16.48	16.48
0.00	ANNUAL ALL 00000005			
586771.59000	4160959.89000	0.00000	16.38	16.38
0.00	ANNUAL ALL 00000005			
586791.59000	4160959.89000	0.00000	16.37	16.37
0.00	ANNUAL ALL 00000005			
586811.59000	4160959.89000	0.00000	15.76	15.76
0.00	ANNUAL ALL 00000005			
586831.59000	4160959.89000	0.00000	15.22	15.22
0.00	ANNUAL ALL 00000005			
586851.59000	4160959.89000	0.00000	15.26	15.26
0.00	ANNUAL ALL 00000005			
586871.59000	4160959.89000	0.00000	15.91	15.91
0.00	ANNUAL ALL 00000005			
586891.59000	4160959.89000	0.00000	15.85	15.85
0.00	ANNUAL ALL 00000005			
586911.59000	4160959.89000	0.00000	16.25	16.25
0.00	ANNUAL ALL 00000005			
586931.59000	4160959.89000	0.00000	16.59	16.59
0.00	ANNUAL ALL 00000005			
586951.59000	4160959.89000	0.00000	16.28	16.28
0.00	ANNUAL ALL 00000005			

586971.59000	4160959.89000	0.00000	16.17	16.17
0.00	ANNUAL ALL 000000005			
586991.59000	4160959.89000	0.00000	16.03	16.03
0.00	ANNUAL ALL 000000005			
587011.59000	4160959.89000	0.00000	16.22	16.22
0.00	ANNUAL ALL 000000005			
587031.59000	4160959.89000	0.00000	16.19	16.19
0.00	ANNUAL ALL 000000005			
586731.59000	4160979.89000	0.00000	16.63	16.63
0.00	ANNUAL ALL 000000005			
586751.59000	4160979.89000	0.00000	16.29	16.29
0.00	ANNUAL ALL 000000005			
586771.59000	4160979.89000	0.00000	16.38	16.38
0.00	ANNUAL ALL 000000005			
586791.59000	4160979.89000	0.00000	15.69	15.69
0.00	ANNUAL ALL 000000005			
586811.59000	4160979.89000	0.00000	15.38	15.38
0.00	ANNUAL ALL 000000005			
586831.59000	4160979.89000	0.00000	15.35	15.35
0.00	ANNUAL ALL 000000005			
586851.59000	4160979.89000	0.00000	15.91	15.91
0.00	ANNUAL ALL 000000005			
586871.59000	4160979.89000	0.00000	16.01	16.01
0.00	ANNUAL ALL 000000005			
586891.59000	4160979.89000	0.00000	16.55	16.55
0.00	ANNUAL ALL 000000005			
586911.59000	4160979.89000	0.00000	16.84	16.84
0.00	ANNUAL ALL 000000005			
586931.59000	4160979.89000	0.00000	16.73	16.73
0.00	ANNUAL ALL 000000005			
586951.59000	4160979.89000	0.00000	16.64	16.64
0.00	ANNUAL ALL 000000005			
586971.59000	4160979.89000	0.00000	16.03	16.03
0.00	ANNUAL ALL 000000005			
586991.59000	4160979.89000	0.00000	16.53	16.53
0.00	ANNUAL ALL 000000005			
587011.59000	4160979.89000	0.00000	16.64	16.64
0.00	ANNUAL ALL 000000005			
586751.59000	4160999.89000	0.00000	16.36	16.36
0.00	ANNUAL ALL 000000005			
586771.59000	4160999.89000	0.00000	15.80	15.80
0.00	ANNUAL ALL 000000005			
586791.59000	4160999.89000	0.00000	15.52	15.52
0.00	ANNUAL ALL 000000005			
586811.59000	4160999.89000	0.00000	15.57	15.57
0.00	ANNUAL ALL 000000005			
586831.59000	4160999.89000	0.00000	15.84	15.84
0.00	ANNUAL ALL 000000005			
586851.59000	4160999.89000	0.00000	16.06	16.06
0.00	ANNUAL ALL 000000005			
586871.59000	4160999.89000	0.00000	16.28	16.28
0.00	ANNUAL ALL 000000005			

586891.59000	4160999.89000	0.00000	16.49	16.49
0.00	ANNUAL ALL 000000005			
586911.59000	4160999.89000	0.00000	16.88	16.88
0.00	ANNUAL ALL 000000005			
586931.59000	4160999.89000	0.00000	16.87	16.87
0.00	ANNUAL ALL 000000005			
586951.59000	4160999.89000	0.00000	16.64	16.64
0.00	ANNUAL ALL 000000005			
586971.59000	4160999.89000	0.00000	16.62	16.62
0.00	ANNUAL ALL 000000005			
586991.59000	4160999.89000	0.00000	16.80	16.80
0.00	ANNUAL ALL 000000005			
586751.59000	4161019.89000	0.00000	15.74	15.74
0.00	ANNUAL ALL 000000005			
586771.59000	4161019.89000	0.00000	15.64	15.64
0.00	ANNUAL ALL 000000005			
586791.59000	4161019.89000	0.00000	15.73	15.73
0.00	ANNUAL ALL 000000005			
586811.59000	4161019.89000	0.00000	16.28	16.28
0.00	ANNUAL ALL 000000005			
586831.59000	4161019.89000	0.00000	15.97	15.97
0.00	ANNUAL ALL 000000005			
586851.59000	4161019.89000	0.00000	16.16	16.16
0.00	ANNUAL ALL 000000005			
586871.59000	4161019.89000	0.00000	16.45	16.45
0.00	ANNUAL ALL 000000005			
586891.59000	4161019.89000	0.00000	16.69	16.69
0.00	ANNUAL ALL 000000005			
586911.59000	4161019.89000	0.00000	16.90	16.90
0.00	ANNUAL ALL 000000005			
586931.59000	4161019.89000	0.00000	16.90	16.90
0.00	ANNUAL ALL 000000005			
586951.59000	4161019.89000	0.00000	16.90	16.90
0.00	ANNUAL ALL 000000005			
586971.59000	4161019.89000	0.00000	17.01	17.01
0.00	ANNUAL ALL 000000005			
586771.59000	4161039.89000	0.00000	15.55	15.55
0.00	ANNUAL ALL 000000005			
586791.59000	4161039.89000	0.00000	16.60	16.60
0.00	ANNUAL ALL 000000005			
586811.59000	4161039.89000	0.00000	16.35	16.35
0.00	ANNUAL ALL 000000005			
586831.59000	4161039.89000	0.00000	16.51	16.51
0.00	ANNUAL ALL 000000005			
586851.59000	4161039.89000	0.00000	16.53	16.53
0.00	ANNUAL ALL 000000005			
586871.59000	4161039.89000	0.00000	16.78	16.78
0.00	ANNUAL ALL 000000005			
586891.59000	4161039.89000	0.00000	16.97	16.97
0.00	ANNUAL ALL 000000005			
586911.59000	4161039.89000	0.00000	17.07	17.07
0.00	ANNUAL ALL 000000005			

586931.59000	4161039.89000	0.00000	17.01	17.01
0.00	ANNUAL ALL 000000005			
586951.59000	4161039.89000	0.00000	17.07	17.07
0.00	ANNUAL ALL 000000005			
586791.59000	4161059.89000	0.00000	16.66	16.66
0.00	ANNUAL ALL 000000005			
586811.59000	4161059.89000	0.00000	16.52	16.52
0.00	ANNUAL ALL 000000005			
586831.59000	4161059.89000	0.00000	16.77	16.77
0.00	ANNUAL ALL 000000005			
586851.59000	4161059.89000	0.00000	16.74	16.74
0.00	ANNUAL ALL 000000005			
586871.59000	4161059.89000	0.00000	16.99	16.99
0.00	ANNUAL ALL 000000005			
586891.59000	4161059.89000	0.00000	17.06	17.06
0.00	ANNUAL ALL 000000005			
586911.59000	4161059.89000	0.00000	17.15	17.15
0.00	ANNUAL ALL 000000005			
586931.59000	4161059.89000	0.00000	17.22	17.22
0.00	ANNUAL ALL 000000005			
586811.59000	4161079.89000	0.00000	16.60	16.60
0.00	ANNUAL ALL 000000005			
586831.59000	4161079.89000	0.00000	16.71	16.71
0.00	ANNUAL ALL 000000005			
586851.59000	4161079.89000	0.00000	16.89	16.89
0.00	ANNUAL ALL 000000005			
586871.59000	4161079.89000	0.00000	17.01	17.01
0.00	ANNUAL ALL 000000005			
586891.59000	4161079.89000	0.00000	17.21	17.21
0.00	ANNUAL ALL 000000005			
586831.59000	4161099.89000	0.00000	16.93	16.93
0.00	ANNUAL ALL 000000005			
586851.59000	4161099.89000	0.00000	17.03	17.03
0.00	ANNUAL ALL 000000005			
586871.59000	4161099.89000	0.00000	17.25	17.25
0.00	ANNUAL ALL 000000005			
586851.59000	4161119.89000	0.00000	17.35	17.35
0.00	ANNUAL ALL 000000005			
586891.59000	4161139.89000	0.00000	17.85	181.37
0.00	ANNUAL ALL 000000005			
586891.59000	4161159.89000	0.00000	17.98	181.37
0.00	ANNUAL ALL 000000005			
586911.59000	4161159.89000	0.00000	17.96	181.37
0.00	ANNUAL ALL 000000005			
586871.59000	4161179.89000	0.00000	18.17	181.37
0.00	ANNUAL ALL 000000005			
586891.59000	4161179.89000	0.00000	18.09	181.37
0.00	ANNUAL ALL 000000005			
586911.59000	4161179.89000	0.00000	18.13	181.37
0.00	ANNUAL ALL 000000005			
586931.59000	4161179.89000	0.00000	18.08	181.37
0.00	ANNUAL ALL 000000005			

586851.59000	4161199.89000	0.00000	18.27	181.37
0.00	ANNUAL ALL 00000005			
586871.59000	4161199.89000	0.00000	18.23	181.37
0.00	ANNUAL ALL 00000005			
586891.59000	4161199.89000	0.00000	18.20	181.37
0.00	ANNUAL ALL 00000005			
586911.59000	4161199.89000	0.00000	18.23	181.37
0.00	ANNUAL ALL 00000005			
586931.59000	4161199.89000	0.00000	18.29	181.37
0.00	ANNUAL ALL 00000005			
586831.59000	4161219.89000	0.00000	18.44	181.37
0.00	ANNUAL ALL 00000005			
586851.59000	4161219.89000	0.00000	18.39	181.37
0.00	ANNUAL ALL 00000005			
586871.59000	4161219.89000	0.00000	18.38	181.37
0.00	ANNUAL ALL 00000005			
586891.59000	4161219.89000	0.00000	18.38	181.37
0.00	ANNUAL ALL 00000005			
586911.59000	4161219.89000	0.00000	18.39	181.37
0.00	ANNUAL ALL 00000005			
586931.59000	4161219.89000	0.00000	18.41	181.37
0.00	ANNUAL ALL 00000005			
586951.59000	4161219.89000	0.00000	18.47	181.37
0.00	ANNUAL ALL 00000005			
586811.59000	4161239.89000	0.00000	18.61	181.37
0.00	ANNUAL ALL 00000005			
586831.59000	4161239.89000	0.00000	18.57	181.37
0.00	ANNUAL ALL 00000005			
586851.59000	4161239.89000	0.00000	18.55	181.37
0.00	ANNUAL ALL 00000005			
586871.59000	4161239.89000	0.00000	18.56	181.37
0.00	ANNUAL ALL 00000005			
586891.59000	4161239.89000	0.00000	18.54	181.37
0.00	ANNUAL ALL 00000005			
586911.59000	4161239.89000	0.00000	18.57	181.37
0.00	ANNUAL ALL 00000005			
586931.59000	4161239.89000	0.00000	18.54	181.37
0.00	ANNUAL ALL 00000005			
586951.59000	4161239.89000	0.00001	18.55	181.37
0.00	ANNUAL ALL 00000005			
586971.59000	4161239.89000	0.00001	18.64	192.17
0.00	ANNUAL ALL 00000005			
** CONCUNIT ug/m^3				
** DEPUNIT g/m^2				
** CONCUNIT ug/m^3				
** DEPUNIT g/m^2				

* AERMOD (19191): C:\Users\35578\Desktop\Station East Construction
HRA_1\Station East 04/05/21

* AERMET (14134):

20:06:08

* MODELING OPTIONS USED: RegDFAULT CONC ELEV URBAN

* PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR
SOURCE GROUP: ALL

* FOR A TOTAL OF 1572 RECEPTORS.

* FORMAT: (3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,I8.8,2X,A8)

* X Y AVERAGE CONC ZELEV ZHILL ZFLAG
AVE GRP NUM YRS NET ID

587399.49000	4161193.83000	0.03785	17.57	192.17	0.00
ANNUAL ALL	00000005				
587379.49000	4161213.83000	0.04152	18.18	192.17	0.00
ANNUAL ALL	00000005				
587399.49000	4161213.83000	0.03904	18.00	192.17	0.00
ANNUAL ALL	00000005				
587419.49000	4161213.83000	0.03675	17.72	192.17	0.00
ANNUAL ALL	00000005				
587359.49000	4161233.83000	0.04561	18.17	192.17	0.00
ANNUAL ALL	00000005				
587379.49000	4161233.83000	0.04262	17.70	192.17	0.00
ANNUAL ALL	00000005				
587399.49000	4161233.83000	0.04002	17.98	192.17	0.00
ANNUAL ALL	00000005				
587419.49000	4161233.83000	0.03761	18.08	192.17	0.00
ANNUAL ALL	00000005				
587439.49000	4161233.83000	0.03541	18.32	192.17	0.00
ANNUAL ALL	00000005				
587339.49000	4161253.83000	0.05033	18.20	192.17	0.00
ANNUAL ALL	00000005				
587359.49000	4161253.83000	0.04675	17.71	192.17	0.00
ANNUAL ALL	00000005				
587379.49000	4161253.83000	0.04360	17.67	192.17	0.00
ANNUAL ALL	00000005				
587399.49000	4161253.83000	0.04075	17.59	192.17	0.00
ANNUAL ALL	00000005				
587419.49000	4161253.83000	0.03825	18.14	192.17	0.00
ANNUAL ALL	00000005				
587439.49000	4161253.83000	0.03592	18.36	192.17	0.00
ANNUAL ALL	00000005				
587459.49000	4161253.83000	0.03375	18.26	192.17	0.00
ANNUAL ALL	00000005				
587319.49000	4161273.83000	0.05572	18.00	192.17	0.00
ANNUAL ALL	00000005				
587339.49000	4161273.83000	0.05147	17.75	192.17	0.00
ANNUAL ALL	00000005				
587359.49000	4161273.83000	0.04774	17.80	192.17	0.00
ANNUAL ALL	00000005				

587379.49000	4161273.83000	0.04446	18.25	192.17	0.00
ANNUAL ALL	00000005				
587399.49000	4161273.83000	0.04140	18.09	192.17	0.00
ANNUAL ALL	00000005				
587419.49000	4161273.83000	0.03864	17.86	192.17	0.00
ANNUAL ALL	00000005				
587439.49000	4161273.83000	0.03621	18.15	192.17	0.00
ANNUAL ALL	00000005				
587459.49000	4161273.83000	0.03400	18.47	192.17	0.00
ANNUAL ALL	00000005				
587479.49000	4161273.83000	0.03203	19.17	192.17	0.00
ANNUAL ALL	00000005				
587299.49000	4161293.83000	0.06214	18.12	192.17	0.00
ANNUAL ALL	00000005				
587319.49000	4161293.83000	0.05690	17.77	192.17	0.00
ANNUAL ALL	00000005				
587339.49000	4161293.83000	0.05233	17.56	192.17	0.00
ANNUAL ALL	00000005				
587359.49000	4161293.83000	0.04840	17.81	192.17	0.00
ANNUAL ALL	00000005				
587379.49000	4161293.83000	0.04497	18.42	192.17	0.00
ANNUAL ALL	00000005				
587399.49000	4161293.83000	0.04179	18.51	192.17	0.00
ANNUAL ALL	00000005				
587419.49000	4161293.83000	0.03893	18.42	192.17	0.00
ANNUAL ALL	00000005				
587439.49000	4161293.83000	0.03637	18.49	192.17	0.00
ANNUAL ALL	00000005				
587459.49000	4161293.83000	0.03411	18.96	192.17	0.00
ANNUAL ALL	00000005				
587479.49000	4161293.83000	0.03205	19.52	192.17	0.00
ANNUAL ALL	00000005				
587499.49000	4161293.83000	0.03017	19.97	192.17	0.00
ANNUAL ALL	00000005				
587279.49000	4161313.83000	0.06973	18.21	192.17	0.00
ANNUAL ALL	00000005				
587299.49000	4161313.83000	0.06325	17.92	192.17	0.00
ANNUAL ALL	00000005				
587319.49000	4161313.83000	0.05768	17.74	192.17	0.00
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587339.49000	4161313.83000	0.05300	18.15	192.17	0.00
ANNUAL ALL	00000005				
587359.49000	4161313.83000	0.04878	18.12	192.17	0.00
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587379.49000	4161313.83000	0.04508	18.21	192.17	0.00
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587399.49000	4161313.83000	0.04192	19.04	192.17	0.00
ANNUAL ALL	00000005				
587419.49000	4161313.83000	0.03898	19.10	192.17	0.00
ANNUAL ALL	00000005				
587439.49000	4161313.83000	0.03634	19.08	192.17	0.00
ANNUAL ALL	00000005				

587459.49000	4161313.83000	0.03402	19.51	192.17	0.00
ANNUAL ALL	00000005				
587479.49000	4161313.83000	0.03192	19.91	192.17	0.00
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587499.49000	4161313.83000	0.03001	20.23	192.17	0.00
ANNUAL ALL	00000005				
587519.49000	4161313.83000	0.02831	21.55	192.17	0.00
ANNUAL ALL	00000005				
587259.49000	4161333.83000	0.07844	17.55	192.17	0.00
ANNUAL ALL	00000005				
587279.49000	4161333.83000	0.07075	18.18	192.17	0.00
ANNUAL ALL	00000005				
587299.49000	4161333.83000	0.06378	17.85	192.17	0.00
ANNUAL ALL	00000005				
587319.49000	4161333.83000	0.05805	18.12	192.17	0.00
ANNUAL ALL	00000005				
587339.49000	4161333.83000	0.05316	18.65	192.17	0.00
ANNUAL ALL	00000005				
587359.49000	4161333.83000	0.04878	18.66	192.17	0.00
ANNUAL ALL	00000005				
587379.49000	4161333.83000	0.04490	18.32	192.17	0.00
ANNUAL ALL	00000005				
587399.49000	4161333.83000	0.04163	18.84	192.17	0.00
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587419.49000	4161333.83000	0.03873	19.51	192.17	0.00
ANNUAL ALL	00000005				
587439.49000	4161333.83000	0.03608	19.54	192.17	0.00
ANNUAL ALL	00000005				
587459.49000	4161333.83000	0.03372	19.81	192.17	0.00
ANNUAL ALL	00000005				
587479.49000	4161333.83000	0.03162	20.27	192.17	0.00
ANNUAL ALL	00000005				
587499.49000	4161333.83000	0.02974	21.27	192.17	0.00
ANNUAL ALL	00000005				
587519.49000	4161333.83000	0.02800	21.71	192.17	0.00
ANNUAL ALL	00000005				
587539.49000	4161333.83000	0.02639	21.26	192.17	0.00
ANNUAL ALL	00000005				
587239.49000	4161353.83000	0.08994	18.02	192.17	0.00
ANNUAL ALL	00000005				
587259.49000	4161353.83000	0.07928	17.81	192.17	0.00
ANNUAL ALL	00000005				
587279.49000	4161353.83000	0.07062	17.69	192.17	0.00
ANNUAL ALL	00000005				
587299.49000	4161353.83000	0.06376	18.35	192.17	0.00
ANNUAL ALL	00000005				
587319.49000	4161353.83000	0.05782	18.66	192.17	0.00
ANNUAL ALL	00000005				
587339.49000	4161353.83000	0.05274	18.98	192.17	0.00
ANNUAL ALL	00000005				
587359.49000	4161353.83000	0.04820	18.53	192.17	0.00
ANNUAL ALL	00000005				

587379.49000	4161353.83000	0.04439	18.68	192.17	0.00
ANNUAL ALL	00000005				
587399.49000	4161353.83000	0.04107	18.93	192.17	0.00
ANNUAL ALL	00000005				
587419.49000	4161353.83000	0.03816	19.35	192.17	0.00
ANNUAL ALL	00000005				
587439.49000	4161353.83000	0.03556	19.72	192.17	0.00
ANNUAL ALL	00000005				
587459.49000	4161353.83000	0.03325	20.30	192.17	0.00
ANNUAL ALL	00000005				
587479.49000	4161353.83000	0.03119	21.17	192.17	0.00
ANNUAL ALL	00000005				
587499.49000	4161353.83000	0.02929	21.55	192.17	0.00
ANNUAL ALL	00000005				
587519.49000	4161353.83000	0.02754	21.16	192.17	0.00
ANNUAL ALL	00000005				
587539.49000	4161353.83000	0.02598	21.40	192.17	0.00
ANNUAL ALL	00000005				
587559.49000	4161353.83000	0.02456	21.86	192.17	0.00
ANNUAL ALL	00000005				
587219.49000	4161373.83000	0.10471	18.43	192.17	0.00
ANNUAL ALL	00000005				
587239.49000	4161373.83000	0.09020	18.43	192.17	0.00
ANNUAL ALL	00000005				
587259.49000	4161373.83000	0.07865	17.99	192.17	0.00
ANNUAL ALL	00000005				
587279.49000	4161373.83000	0.06970	17.87	192.17	0.00
ANNUAL ALL	00000005				
587299.49000	4161373.83000	0.06245	17.84	192.17	0.00
ANNUAL ALL	00000005				
587319.49000	4161373.83000	0.05680	18.97	192.17	0.00
ANNUAL ALL	00000005				
587339.49000	4161373.83000	0.05161	18.71	192.17	0.00
ANNUAL ALL	00000005				
587359.49000	4161373.83000	0.04722	18.63	192.17	0.00
ANNUAL ALL	00000005				
587379.49000	4161373.83000	0.04350	18.94	192.17	0.00
ANNUAL ALL	00000005				
587399.49000	4161373.83000	0.04026	19.32	192.17	0.00
ANNUAL ALL	00000005				
587419.49000	4161373.83000	0.03738	19.57	192.17	0.00
ANNUAL ALL	00000005				
587439.49000	4161373.83000	0.03486	20.18	192.17	0.00
ANNUAL ALL	00000005				
587459.49000	4161373.83000	0.03261	20.90	192.17	0.00
ANNUAL ALL	00000005				
587479.49000	4161373.83000	0.03057	21.47	192.17	0.00
ANNUAL ALL	00000005				
587499.49000	4161373.83000	0.02869	21.15	192.17	0.00
ANNUAL ALL	00000005				
587519.49000	4161373.83000	0.02700	21.26	192.17	0.00
ANNUAL ALL	00000005				

587539.49000	4161373.83000	0.02549	21.79	192.17	0.00
ANNUAL ALL	00000005				
587199.49000	4161393.83000	0.12339	18.32	192.17	0.00
ANNUAL ALL	00000005				
587219.49000	4161393.83000	0.10244	18.35	192.17	0.00
ANNUAL ALL	00000005				
587239.49000	4161393.83000	0.08730	18.05	192.17	0.00
ANNUAL ALL	00000005				
587259.49000	4161393.83000	0.07640	18.37	192.17	0.00
ANNUAL ALL	00000005				
587279.49000	4161393.83000	0.06761	18.26	192.17	0.00
ANNUAL ALL	00000005				
587299.49000	4161393.83000	0.06041	17.83	192.17	0.00
ANNUAL ALL	00000005				
587319.49000	4161393.83000	0.05467	17.96	192.17	0.00
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587399.49000	4161393.83000	0.03914	19.51	192.17	0.00
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587419.49000	4161393.83000	0.03640	20.07	192.17	0.00
ANNUAL ALL	00000005				
587439.49000	4161393.83000	0.03398	20.76	192.17	0.00
ANNUAL ALL	00000005				
587459.49000	4161393.83000	0.03179	21.38	192.17	0.00
ANNUAL ALL	00000005				
587479.49000	4161393.83000	0.02978	21.07	192.17	0.00
ANNUAL ALL	00000005				
587499.49000	4161393.83000	0.02798	21.11	192.17	0.00
ANNUAL ALL	00000005				
587519.49000	4161393.83000	0.02638	21.62	192.17	0.00
ANNUAL ALL	00000005				
587539.49000	4161393.83000	0.02492	22.86	192.17	0.00
ANNUAL ALL	00000005				
586777.58000	4161816.47000	0.01339	23.05	192.17	0.00
ANNUAL ALL	00000005				
586797.58000	4161816.47000	0.01353	22.65	192.17	0.00
ANNUAL ALL	00000005				
586817.58000	4161816.47000	0.01365	22.31	192.17	0.00
ANNUAL ALL	00000005				
586837.58000	4161816.47000	0.01374	22.06	192.17	0.00
ANNUAL ALL	00000005				
586857.58000	4161816.47000	0.01382	21.80	192.17	0.00
ANNUAL ALL	00000005				
586877.58000	4161816.47000	0.01389	22.02	192.17	0.00
ANNUAL ALL	00000005				
586897.58000	4161816.47000	0.01392	21.92	192.17	0.00
ANNUAL ALL	00000005				
586917.58000	4161816.47000	0.01394	21.80	192.17	0.00
ANNUAL ALL	00000005				
586937.58000	4161816.47000	0.01393	21.51	192.17	0.00
ANNUAL ALL	00000005				
586957.58000	4161816.47000	0.01389	21.31	192.17	0.00
ANNUAL ALL	00000005				

586977.58000	4161816.47000	0.01386	21.63	192.17	0.00
ANNUAL ALL	00000005				
586997.58000	4161816.47000	0.01378	21.50	192.17	0.00
ANNUAL ALL	00000005				
587017.58000	4161816.47000	0.01369	21.31	192.17	0.00
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587037.58000	4161816.47000	0.01359	21.69	192.17	0.00
ANNUAL ALL	00000005				
587057.58000	4161816.47000	0.01346	21.57	192.17	0.00
ANNUAL ALL	00000005				
587077.58000	4161816.47000	0.01332	21.20	192.17	0.00
ANNUAL ALL	00000005				
587097.58000	4161816.47000	0.01316	20.67	192.17	0.00
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587117.58000	4161816.47000	0.01300	20.70	192.17	0.00
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587137.58000	4161816.47000	0.01284	21.05	192.17	0.00
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586797.58000	4161836.47000	0.01198	22.88	192.17	0.00
ANNUAL ALL	00000005				
586817.58000	4161836.47000	0.01207	22.40	192.17	0.00
ANNUAL ALL	00000005				
586837.58000	4161836.47000	0.01216	22.56	192.17	0.00
ANNUAL ALL	00000005				
586857.58000	4161836.47000	0.01223	22.45	192.17	0.00
ANNUAL ALL	00000005				
586877.58000	4161836.47000	0.01229	22.50	192.17	0.00
ANNUAL ALL	00000005				
586897.58000	4161836.47000	0.01232	22.21	192.17	0.00
ANNUAL ALL	00000005				
586917.58000	4161836.47000	0.01235	21.98	192.17	0.00
ANNUAL ALL	00000005				
586937.58000	4161836.47000	0.01235	21.54	192.17	0.00
ANNUAL ALL	00000005				
586957.58000	4161836.47000	0.01235	22.00	192.17	0.00
ANNUAL ALL	00000005				
586977.58000	4161836.47000	0.01232	21.67	192.17	0.00
ANNUAL ALL	00000005				
586997.58000	4161836.47000	0.01228	21.46	192.17	0.00
ANNUAL ALL	00000005				
587017.58000	4161836.47000	0.01223	21.85	192.17	0.00
ANNUAL ALL	00000005				
587037.58000	4161836.47000	0.01216	21.68	192.17	0.00
ANNUAL ALL	00000005				
587057.58000	4161836.47000	0.01207	21.31	192.17	0.00
ANNUAL ALL	00000005				
587077.58000	4161836.47000	0.01197	20.84	192.17	0.00
ANNUAL ALL	00000005				
587097.58000	4161836.47000	0.01187	20.91	192.17	0.00
ANNUAL ALL	00000005				
587117.58000	4161836.47000	0.01176	21.16	192.17	0.00
ANNUAL ALL	00000005				

586797.58000	4161856.47000	0.01070	22.95	192.17	0.00
ANNUAL ALL	00000005				
586817.58000	4161856.47000	0.01078	22.72	192.17	0.00
ANNUAL ALL	00000005				
586837.58000	4161856.47000	0.01085	23.12	192.17	0.00
ANNUAL ALL	00000005				
586857.58000	4161856.47000	0.01092	22.79	192.17	0.00
ANNUAL ALL	00000005				
586877.58000	4161856.47000	0.01097	22.72	192.17	0.00
ANNUAL ALL	00000005				
586897.58000	4161856.47000	0.01101	22.65	192.17	0.00
ANNUAL ALL	00000005				
586917.58000	4161856.47000	0.01104	22.18	192.17	0.00
ANNUAL ALL	00000005				
586937.58000	4161856.47000	0.01105	21.87	192.17	0.00
ANNUAL ALL	00000005				
586957.58000	4161856.47000	0.01105	21.73	192.17	0.00
ANNUAL ALL	00000005				
586977.58000	4161856.47000	0.01104	21.68	192.17	0.00
ANNUAL ALL	00000005				
586997.58000	4161856.47000	0.01103	22.24	192.17	0.00
ANNUAL ALL	00000005				
587017.58000	4161856.47000	0.01099	22.00	192.17	0.00
ANNUAL ALL	00000005				
587037.58000	4161856.47000	0.01094	21.30	192.17	0.00
ANNUAL ALL	00000005				
587057.58000	4161856.47000	0.01088	20.90	192.17	0.00
ANNUAL ALL	00000005				
587077.58000	4161856.47000	0.01082	20.80	192.17	0.00
ANNUAL ALL	00000005				
587097.58000	4161856.47000	0.01076	21.49	192.17	0.00
ANNUAL ALL	00000005				
587117.58000	4161856.47000	0.01068	22.02	192.17	0.00
ANNUAL ALL	00000005				
586797.58000	4161876.47000	0.00962	23.56	192.17	0.00
ANNUAL ALL	00000005				
586817.58000	4161876.47000	0.00970	23.15	192.17	0.00
ANNUAL ALL	00000005				
586837.58000	4161876.47000	0.00976	23.47	192.17	0.00
ANNUAL ALL	00000005				
586857.58000	4161876.47000	0.00982	23.24	192.17	0.00
ANNUAL ALL	00000005				
586877.58000	4161876.47000	0.00986	23.30	192.17	0.00
ANNUAL ALL	00000005				
586897.58000	4161876.47000	0.00991	23.13	192.17	0.00
ANNUAL ALL	00000005				
586917.58000	4161876.47000	0.00994	22.55	192.17	0.00
ANNUAL ALL	00000005				
586937.58000	4161876.47000	0.00996	22.11	192.17	0.00
ANNUAL ALL	00000005				
586957.58000	4161876.47000	0.00996	21.90	192.17	0.00
ANNUAL ALL	00000005				

586977.58000	4161876.47000	0.00997	22.39	192.17	0.00
ANNUAL ALL	00000005				
586997.58000	4161876.47000	0.00996	22.50	192.17	0.00
ANNUAL ALL	00000005				
587017.58000	4161876.47000	0.00994	21.67	192.17	0.00
ANNUAL ALL	00000005				
587037.58000	4161876.47000	0.00990	21.20	192.17	0.00
ANNUAL ALL	00000005				
587057.58000	4161876.47000	0.00986	20.84	192.17	0.00
ANNUAL ALL	00000005				
587077.58000	4161876.47000	0.00983	21.35	192.17	0.00
ANNUAL ALL	00000005				
587097.58000	4161876.47000	0.00979	21.98	192.17	0.00
ANNUAL ALL	00000005				
586797.58000	4161896.47000	0.00873	23.84	192.17	0.00
ANNUAL ALL	00000005				
586817.58000	4161896.47000	0.00879	23.50	192.17	0.00
ANNUAL ALL	00000005				
586837.58000	4161896.47000	0.00884	23.59	192.17	0.00
ANNUAL ALL	00000005				
586857.58000	4161896.47000	0.00888	23.80	192.17	0.00
ANNUAL ALL	00000005				
586877.58000	4161896.47000	0.00893	23.77	192.17	0.00
ANNUAL ALL	00000005				
586897.58000	4161896.47000	0.00897	23.38	192.17	0.00
ANNUAL ALL	00000005				
586917.58000	4161896.47000	0.00901	22.74	192.17	0.00
ANNUAL ALL	00000005				
586937.58000	4161896.47000	0.00903	22.17	192.17	0.00
ANNUAL ALL	00000005				
586957.58000	4161896.47000	0.00905	22.48	192.17	0.00
ANNUAL ALL	00000005				
586977.58000	4161896.47000	0.00906	22.60	192.17	0.00
ANNUAL ALL	00000005				
586997.58000	4161896.47000	0.00905	21.81	192.17	0.00
ANNUAL ALL	00000005				
587017.58000	4161896.47000	0.00903	21.30	192.17	0.00
ANNUAL ALL	00000005				
587037.58000	4161896.47000	0.00901	20.93	192.17	0.00
ANNUAL ALL	00000005				
587057.58000	4161896.47000	0.00900	21.32	192.17	0.00
ANNUAL ALL	00000005				
587077.58000	4161896.47000	0.00898	21.92	192.17	0.00
ANNUAL ALL	00000005				
586797.58000	4161916.47000	0.00796	24.08	192.17	0.00
ANNUAL ALL	00000005				
586817.58000	4161916.47000	0.00801	23.76	192.17	0.00
ANNUAL ALL	00000005				
586837.58000	4161916.47000	0.00806	23.95	192.17	0.00
ANNUAL ALL	00000005				
586857.58000	4161916.47000	0.00809	24.10	192.17	0.00
ANNUAL ALL	00000005				

586877.58000	4161916.47000	0.00813	24.08	192.17	0.00
ANNUAL ALL	00000005				
586897.58000	4161916.47000	0.00817	24.07	192.17	0.00
ANNUAL ALL	00000005				
586917.58000	4161916.47000	0.00821	23.51	192.17	0.00
ANNUAL ALL	00000005				
586937.58000	4161916.47000	0.00824	22.46	192.17	0.00
ANNUAL ALL	00000005				
586957.58000	4161916.47000	0.00826	22.88	192.17	0.00
ANNUAL ALL	00000005				
586977.58000	4161916.47000	0.00827	22.11	192.17	0.00
ANNUAL ALL	00000005				
586997.58000	4161916.47000	0.00826	21.53	192.17	0.00
ANNUAL ALL	00000005				
587017.58000	4161916.47000	0.00825	20.96	192.17	0.00
ANNUAL ALL	00000005				
587037.58000	4161916.47000	0.00825	21.49	192.17	0.00
ANNUAL ALL	00000005				
587057.58000	4161916.47000	0.00824	21.91	192.17	0.00
ANNUAL ALL	00000005				
586817.58000	4161936.47000	0.00734	24.20	192.17	0.00
ANNUAL ALL	00000005				
586837.58000	4161936.47000	0.00738	24.07	192.17	0.00
ANNUAL ALL	00000005				
586857.58000	4161936.47000	0.00742	24.04	192.17	0.00
ANNUAL ALL	00000005				
586877.58000	4161936.47000	0.00746	24.13	192.17	0.00
ANNUAL ALL	00000005				
586897.58000	4161936.47000	0.00749	24.05	192.17	0.00
ANNUAL ALL	00000005				
586917.58000	4161936.47000	0.00752	23.90	192.17	0.00
ANNUAL ALL	00000005				
586937.58000	4161936.47000	0.00756	22.70	192.17	0.00
ANNUAL ALL	00000005				
586957.58000	4161936.47000	0.00758	22.46	192.17	0.00
ANNUAL ALL	00000005				
586977.58000	4161936.47000	0.00758	21.99	192.17	0.00
ANNUAL ALL	00000005				
586997.58000	4161936.47000	0.00758	21.22	192.17	0.00
ANNUAL ALL	00000005				
587017.58000	4161936.47000	0.00759	21.59	192.17	0.00
ANNUAL ALL	00000005				
587037.58000	4161936.47000	0.00759	21.98	192.17	0.00
ANNUAL ALL	00000005				
586817.58000	4161956.47000	0.00676	24.28	192.17	0.00
ANNUAL ALL	00000005				
586837.58000	4161956.47000	0.00680	24.11	192.17	0.00
ANNUAL ALL	00000005				
586857.58000	4161956.47000	0.00684	23.87	192.17	0.00
ANNUAL ALL	00000005				
586877.58000	4161956.47000	0.00688	23.74	192.17	0.00
ANNUAL ALL	00000005				

586897.58000	4161956.47000	0.00690	23.99	192.17	0.00
ANNUAL ALL	00000005				
586917.58000	4161956.47000	0.00692	24.07	192.17	0.00
ANNUAL ALL	00000005				
586937.58000	4161956.47000	0.00696	23.04	192.17	0.00
ANNUAL ALL	00000005				
586957.58000	4161956.47000	0.00698	22.42	192.17	0.00
ANNUAL ALL	00000005				
586977.58000	4161956.47000	0.00699	21.74	192.17	0.00
ANNUAL ALL	00000005				
586997.58000	4161956.47000	0.00700	21.94	192.17	0.00
ANNUAL ALL	00000005				
587017.58000	4161956.47000	0.00701	22.22	192.17	0.00
ANNUAL ALL	00000005				
586817.58000	4162196.47000	0.00318	27.38	192.17	0.00
ANNUAL ALL	00000005				
586416.73000	4161818.30000	0.00859	23.00	23.00	0.00
ANNUAL ALL	00000005				
586436.73000	4161818.30000	0.00890	23.23	23.23	0.00
ANNUAL ALL	00000005				
586456.73000	4161818.30000	0.00923	23.51	24.35	0.00
ANNUAL ALL	00000005				
586476.73000	4161818.30000	0.00955	24.63	24.63	0.00
ANNUAL ALL	00000005				
586496.73000	4161818.30000	0.00989	24.10	24.10	0.00
ANNUAL ALL	00000005				
586516.73000	4161818.30000	0.01022	24.01	181.37	0.00
ANNUAL ALL	00000005				
586536.73000	4161818.30000	0.01055	23.91	181.37	0.00
ANNUAL ALL	00000005				
586556.73000	4161818.30000	0.01088	24.02	181.37	0.00
ANNUAL ALL	00000005				
586576.73000	4161818.30000	0.01118	24.35	181.37	0.00
ANNUAL ALL	00000005				
586596.73000	4161818.30000	0.01148	24.24	181.37	0.00
ANNUAL ALL	00000005				
586616.73000	4161818.30000	0.01175	24.07	191.71	0.00
ANNUAL ALL	00000005				
586636.73000	4161818.30000	0.01200	24.01	192.17	0.00
ANNUAL ALL	00000005				
586656.73000	4161818.30000	0.01222	23.79	192.17	0.00
ANNUAL ALL	00000005				
586676.73000	4161818.30000	0.01242	23.75	192.17	0.00
ANNUAL ALL	00000005				
586696.73000	4161818.30000	0.01260	23.37	192.17	0.00
ANNUAL ALL	00000005				
586716.73000	4161818.30000	0.01276	23.54	192.17	0.00
ANNUAL ALL	00000005				
586436.73000	4161838.30000	0.00840	23.31	23.31	0.00
ANNUAL ALL	00000005				
586456.73000	4161838.30000	0.00868	24.08	24.08	0.00
ANNUAL ALL	00000005				

586476.73000	4161838.30000	0.00895	24.93	24.93	0.00
ANNUAL ALL	00000005				
586496.73000	4161838.30000	0.00922	24.79	24.79	0.00
ANNUAL ALL	00000005				
586516.73000	4161838.30000	0.00950	24.18	181.37	0.00
ANNUAL ALL	00000005				
586536.73000	4161838.30000	0.00976	24.08	181.37	0.00
ANNUAL ALL	00000005				
586556.73000	4161838.30000	0.01001	24.21	181.37	0.00
ANNUAL ALL	00000005				
586576.73000	4161838.30000	0.01025	24.57	181.37	0.00
ANNUAL ALL	00000005				
586596.73000	4161838.30000	0.01046	24.79	181.37	0.00
ANNUAL ALL	00000005				
586616.73000	4161838.30000	0.01067	24.26	192.17	0.00
ANNUAL ALL	00000005				
586636.73000	4161838.30000	0.01084	24.13	192.17	0.00
ANNUAL ALL	00000005				
586656.73000	4161838.30000	0.01100	24.02	192.17	0.00
ANNUAL ALL	00000005				
586676.73000	4161838.30000	0.01114	23.95	192.17	0.00
ANNUAL ALL	00000005				
586696.73000	4161838.30000	0.01127	23.61	192.17	0.00
ANNUAL ALL	00000005				
586716.73000	4161838.30000	0.01138	23.84	192.17	0.00
ANNUAL ALL	00000005				
586736.73000	4161838.30000	0.01150	23.45	192.17	0.00
ANNUAL ALL	00000005				
586776.73000	4161838.30000	0.01173	23.17	192.17	0.00
ANNUAL ALL	00000005				
586456.73000	4161858.30000	0.00816	23.84	23.84	0.00
ANNUAL ALL	00000005				
586476.73000	4161858.30000	0.00839	24.57	24.57	0.00
ANNUAL ALL	00000005				
586496.73000	4161858.30000	0.00861	24.67	181.17	0.00
ANNUAL ALL	00000005				
586516.73000	4161858.30000	0.00883	24.72	181.37	0.00
ANNUAL ALL	00000005				
586536.73000	4161858.30000	0.00904	24.36	181.37	0.00
ANNUAL ALL	00000005				
586556.73000	4161858.30000	0.00923	24.50	181.37	0.00
ANNUAL ALL	00000005				
586576.73000	4161858.30000	0.00941	24.80	181.37	0.00
ANNUAL ALL	00000005				
586596.73000	4161858.30000	0.00957	25.03	181.37	0.00
ANNUAL ALL	00000005				
586616.73000	4161858.30000	0.00972	24.49	192.17	0.00
ANNUAL ALL	00000005				
586636.73000	4161858.30000	0.00985	24.33	192.17	0.00
ANNUAL ALL	00000005				
586656.73000	4161858.30000	0.00996	24.13	192.17	0.00
ANNUAL ALL	00000005				

586676.73000	4161858.30000	0.01006	24.06	192.17	0.00
ANNUAL	ALL 00000005				
586696.73000	4161858.30000	0.01015	23.76	192.17	0.00
ANNUAL	ALL 00000005				
586716.73000	4161858.30000	0.01024	23.49	192.17	0.00
ANNUAL	ALL 00000005				
586736.73000	4161858.30000	0.01033	23.34	192.17	0.00
ANNUAL	ALL 00000005				
586776.73000	4161858.30000	0.01050	23.27	192.17	0.00
ANNUAL	ALL 00000005				
586476.73000	4161878.30000	0.00786	24.33	24.33	0.00
ANNUAL	ALL 00000005				
586496.73000	4161878.30000	0.00804	24.53	181.37	0.00
ANNUAL	ALL 00000005				
586516.73000	4161878.30000	0.00822	24.92	181.37	0.00
ANNUAL	ALL 00000005				
586536.73000	4161878.30000	0.00838	24.77	181.37	0.00
ANNUAL	ALL 00000005				
586556.73000	4161878.30000	0.00853	24.90	181.37	0.00
ANNUAL	ALL 00000005				
586576.73000	4161878.30000	0.00867	24.99	181.37	0.00
ANNUAL	ALL 00000005				
586596.73000	4161878.30000	0.00879	24.83	181.37	0.00
ANNUAL	ALL 00000005				
586616.73000	4161878.30000	0.00889	24.64	192.17	0.00
ANNUAL	ALL 00000005				
586636.73000	4161878.30000	0.00898	24.47	192.17	0.00
ANNUAL	ALL 00000005				
586656.73000	4161878.30000	0.00906	24.18	192.17	0.00
ANNUAL	ALL 00000005				
586676.73000	4161878.30000	0.00913	24.13	192.17	0.00
ANNUAL	ALL 00000005				
586696.73000	4161878.30000	0.00920	23.83	192.17	0.00
ANNUAL	ALL 00000005				
586716.73000	4161878.30000	0.00926	23.76	192.17	0.00
ANNUAL	ALL 00000005				
586736.73000	4161878.30000	0.00933	23.52	192.17	0.00
ANNUAL	ALL 00000005				
586496.73000	4161898.30000	0.00752	24.62	181.37	0.00
ANNUAL	ALL 00000005				
586516.73000	4161898.30000	0.00766	24.84	181.37	0.00
ANNUAL	ALL 00000005				
586536.73000	4161898.30000	0.00778	24.98	181.37	0.00
ANNUAL	ALL 00000005				
586556.73000	4161898.30000	0.00790	24.99	181.37	0.00
ANNUAL	ALL 00000005				
586576.73000	4161898.30000	0.00800	25.06	181.37	0.00
ANNUAL	ALL 00000005				
586596.73000	4161898.30000	0.00809	24.95	192.17	0.00
ANNUAL	ALL 00000005				
586616.73000	4161898.30000	0.00817	24.93	192.17	0.00
ANNUAL	ALL 00000005				

586636.73000	4161898.30000	0.00823	24.66	192.17	0.00
ANNUAL ALL	00000005				
586656.73000	4161898.30000	0.00829	24.36	192.17	0.00
ANNUAL ALL	00000005				
586676.73000	4161898.30000	0.00834	24.17	192.17	0.00
ANNUAL ALL	00000005				
586696.73000	4161898.30000	0.00839	24.08	192.17	0.00
ANNUAL ALL	00000005				
586716.73000	4161898.30000	0.00843	23.99	192.17	0.00
ANNUAL ALL	00000005				
586736.73000	4161898.30000	0.00849	23.70	192.17	0.00
ANNUAL ALL	00000005				
586536.73000	4161918.30000	0.00724	25.10	181.37	0.00
ANNUAL ALL	00000005				
586556.73000	4161918.30000	0.00733	25.14	181.37	0.00
ANNUAL ALL	00000005				
586576.73000	4161918.30000	0.00740	25.22	181.37	0.00
ANNUAL ALL	00000005				
586596.73000	4161918.30000	0.00747	24.96	192.17	0.00
ANNUAL ALL	00000005				
586616.73000	4161918.30000	0.00753	24.90	192.17	0.00
ANNUAL ALL	00000005				
586636.73000	4161918.30000	0.00757	24.87	192.17	0.00
ANNUAL ALL	00000005				
586656.73000	4161918.30000	0.00761	24.58	192.17	0.00
ANNUAL ALL	00000005				
586676.73000	4161918.30000	0.00765	24.36	192.17	0.00
ANNUAL ALL	00000005				
586696.73000	4161918.30000	0.00768	24.09	192.17	0.00
ANNUAL ALL	00000005				
586716.73000	4161918.30000	0.00772	24.00	192.17	0.00
ANNUAL ALL	00000005				
586736.73000	4161918.30000	0.00776	23.98	192.17	0.00
ANNUAL ALL	00000005				
586756.73000	4161918.30000	0.00780	23.96	192.17	0.00
ANNUAL ALL	00000005				
586556.73000	4161938.30000	0.00681	25.30	181.37	0.00
ANNUAL ALL	00000005				
586576.73000	4161938.30000	0.00687	25.50	181.37	0.00
ANNUAL ALL	00000005				
586596.73000	4161938.30000	0.00692	25.19	192.17	0.00
ANNUAL ALL	00000005				
586616.73000	4161938.30000	0.00696	25.02	192.17	0.00
ANNUAL ALL	00000005				
586636.73000	4161938.30000	0.00699	24.82	192.17	0.00
ANNUAL ALL	00000005				
586656.73000	4161938.30000	0.00702	24.63	192.17	0.00
ANNUAL ALL	00000005				
586676.73000	4161938.30000	0.00705	24.32	192.17	0.00
ANNUAL ALL	00000005				
586696.73000	4161938.30000	0.00707	24.31	192.17	0.00
ANNUAL ALL	00000005				

586716.73000	4161938.30000	0.00710	24.26	192.17	0.00
ANNUAL ALL	00000005				
586736.73000	4161938.30000	0.00713	23.94	192.17	0.00
ANNUAL ALL	00000005				
586756.73000	4161938.30000	0.00717	23.97	192.17	0.00
ANNUAL ALL	00000005				
586576.73000	4161958.30000	0.00639	25.43	191.71	0.00
ANNUAL ALL	00000005				
586596.73000	4161958.30000	0.00642	25.33	192.17	0.00
ANNUAL ALL	00000005				
586616.73000	4161958.30000	0.00645	25.19	192.17	0.00
ANNUAL ALL	00000005				
586636.73000	4161958.30000	0.00648	24.88	192.17	0.00
ANNUAL ALL	00000005				
586656.73000	4161958.30000	0.00650	24.69	192.17	0.00
ANNUAL ALL	00000005				
586676.73000	4161958.30000	0.00651	24.54	192.17	0.00
ANNUAL ALL	00000005				
586696.73000	4161958.30000	0.00653	24.41	192.17	0.00
ANNUAL ALL	00000005				
586716.73000	4161958.30000	0.00656	24.29	192.17	0.00
ANNUAL ALL	00000005				
586736.73000	4161958.30000	0.00658	24.03	192.17	0.00
ANNUAL ALL	00000005				
586756.73000	4161958.30000	0.00661	24.11	192.17	0.00
ANNUAL ALL	00000005				
586596.73000	4161978.30000	0.00598	25.35	192.17	0.00
ANNUAL ALL	00000005				
586616.73000	4161978.30000	0.00600	25.15	192.17	0.00
ANNUAL ALL	00000005				
586636.73000	4161978.30000	0.00602	24.96	192.17	0.00
ANNUAL ALL	00000005				
586656.73000	4161978.30000	0.00603	24.65	192.17	0.00
ANNUAL ALL	00000005				
586676.73000	4161978.30000	0.00604	24.57	192.17	0.00
ANNUAL ALL	00000005				
586376.97000	4161416.66000	0.01584	19.12	19.12	0.00
ANNUAL ALL	00000005				
586396.97000	4161416.66000	0.01716	19.27	19.27	0.00
ANNUAL ALL	00000005				
586416.97000	4161416.66000	0.01867	19.60	19.60	0.00
ANNUAL ALL	00000005				
586436.97000	4161416.66000	0.02037	19.59	19.59	0.00
ANNUAL ALL	00000005				
586456.97000	4161416.66000	0.02234	19.79	19.79	0.00
ANNUAL ALL	00000005				
586476.97000	4161416.66000	0.02461	19.90	19.90	0.00
ANNUAL ALL	00000005				
586496.97000	4161416.66000	0.02725	20.04	20.04	0.00
ANNUAL ALL	00000005				
586516.97000	4161416.66000	0.03034	20.05	20.05	0.00
ANNUAL ALL	00000005				

586536.97000	4161416.66000	0.03402	20.16	20.16	0.00
ANNUAL ALL	00000005				
586376.97000	4161436.66000	0.01551	19.06	19.06	0.00
ANNUAL ALL	00000005				
586396.97000	4161436.66000	0.01681	19.45	19.45	0.00
ANNUAL ALL	00000005				
586416.97000	4161436.66000	0.01829	19.73	19.73	0.00
ANNUAL ALL	00000005				
586436.97000	4161436.66000	0.01997	19.79	19.79	0.00
ANNUAL ALL	00000005				
586456.97000	4161436.66000	0.02191	19.91	19.91	0.00
ANNUAL ALL	00000005				
586476.97000	4161436.66000	0.02416	20.00	20.00	0.00
ANNUAL ALL	00000005				
586496.97000	4161436.66000	0.02683	20.38	20.38	0.00
ANNUAL ALL	00000005				
586516.97000	4161436.66000	0.02995	20.49	20.49	0.00
ANNUAL ALL	00000005				
586596.97000	4161436.66000	0.05074	20.80	20.80	0.00
ANNUAL ALL	00000005				
586376.97000	4161456.66000	0.01515	19.19	19.19	0.00
ANNUAL ALL	00000005				
586396.97000	4161456.66000	0.01641	19.45	19.45	0.00
ANNUAL ALL	00000005				
586416.97000	4161456.66000	0.01786	19.86	19.86	0.00
ANNUAL ALL	00000005				
586436.97000	4161456.66000	0.01952	20.17	20.17	0.00
ANNUAL ALL	00000005				
586456.97000	4161456.66000	0.02142	20.23	20.23	0.00
ANNUAL ALL	00000005				
586476.97000	4161456.66000	0.02362	20.24	20.24	0.00
ANNUAL ALL	00000005				
586496.97000	4161456.66000	0.02623	20.35	20.35	0.00
ANNUAL ALL	00000005				
586576.97000	4161456.66000	0.04326	20.77	20.77	0.00
ANNUAL ALL	00000005				
586616.97000	4161456.66000	0.06020	20.66	20.66	0.00
ANNUAL ALL	00000005				
586376.97000	4161476.66000	0.01479	19.70	19.70	0.00
ANNUAL ALL	00000005				
586396.97000	4161476.66000	0.01601	19.76	19.76	0.00
ANNUAL ALL	00000005				
586416.97000	4161476.66000	0.01741	20.16	20.16	0.00
ANNUAL ALL	00000005				
586436.97000	4161476.66000	0.01901	20.45	20.45	0.00
ANNUAL ALL	00000005				
586456.97000	4161476.66000	0.02086	20.66	20.66	0.00
ANNUAL ALL	00000005				
586476.97000	4161476.66000	0.02300	20.55	20.55	0.00
ANNUAL ALL	00000005				
586556.97000	4161476.66000	0.03671	20.74	20.74	0.00
ANNUAL ALL	00000005				

586596.97000	4161476.66000	0.04979	20.96	20.96	0.00
ANNUAL ALL	00000005				
586616.97000	4161476.66000	0.05984	20.95	20.95	0.00
ANNUAL ALL	00000005				
586376.97000	4161496.66000	0.01441	20.10	20.10	0.00
ANNUAL ALL	00000005				
586396.97000	4161496.66000	0.01558	20.17	20.17	0.00
ANNUAL ALL	00000005				
586416.97000	4161496.66000	0.01692	20.40	20.40	0.00
ANNUAL ALL	00000005				
586436.97000	4161496.66000	0.01845	20.52	20.52	0.00
ANNUAL ALL	00000005				
586456.97000	4161496.66000	0.02022	20.64	20.64	0.00
ANNUAL ALL	00000005				
586476.97000	4161496.66000	0.02229	20.79	20.79	0.00
ANNUAL ALL	00000005				
586536.97000	4161496.66000	0.03120	20.98	20.98	0.00
ANNUAL ALL	00000005				
586576.97000	4161496.66000	0.04114	21.02	21.02	0.00
ANNUAL ALL	00000005				
586596.97000	4161496.66000	0.04854	21.38	21.38	0.00
ANNUAL ALL	00000005				
586616.97000	4161496.66000	0.05851	21.18	21.18	0.00
ANNUAL ALL	00000005				
586376.97000	4161516.66000	0.01402	20.47	20.47	0.00
ANNUAL ALL	00000005				
586396.97000	4161516.66000	0.01514	20.71	20.71	0.00
ANNUAL ALL	00000005				
586416.97000	4161516.66000	0.01640	20.47	20.47	0.00
ANNUAL ALL	00000005				
586436.97000	4161516.66000	0.01786	20.68	20.68	0.00
ANNUAL ALL	00000005				
586456.97000	4161516.66000	0.01954	20.71	20.71	0.00
ANNUAL ALL	00000005				
586516.97000	4161516.66000	0.02662	21.03	21.03	0.00
ANNUAL ALL	00000005				
586556.97000	4161516.66000	0.03415	20.94	20.94	0.00
ANNUAL ALL	00000005				
586576.97000	4161516.66000	0.03949	21.07	21.07	0.00
ANNUAL ALL	00000005				
586596.97000	4161516.66000	0.04652	21.27	21.27	0.00
ANNUAL ALL	00000005				
586616.97000	4161516.66000	0.05613	21.27	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161516.66000	0.07050	21.30	181.37	0.00
ANNUAL ALL	00000005				
586376.97000	4161536.66000	0.01363	20.81	20.81	0.00
ANNUAL ALL	00000005				
586396.97000	4161536.66000	0.01468	20.76	20.76	0.00
ANNUAL ALL	00000005				
586416.97000	4161536.66000	0.01588	20.77	20.77	0.00
ANNUAL ALL	00000005				

586436.97000	4161536.66000	0.01726	20.75	20.75	0.00
ANNUAL ALL	00000005				
586496.97000	4161536.66000	0.02289	21.11	21.11	0.00
ANNUAL ALL	00000005				
586536.97000	4161536.66000	0.02867	21.34	21.34	0.00
ANNUAL ALL	00000005				
586556.97000	4161536.66000	0.03262	21.59	21.59	0.00
ANNUAL ALL	00000005				
586576.97000	4161536.66000	0.03753	21.22	21.22	0.00
ANNUAL ALL	00000005				
586596.97000	4161536.66000	0.04407	21.38	21.38	0.00
ANNUAL ALL	00000005				
586616.97000	4161536.66000	0.05291	21.33	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161536.66000	0.06584	21.47	181.37	0.00
ANNUAL ALL	00000005				
586376.97000	4161556.66000	0.01322	20.86	20.86	0.00
ANNUAL ALL	00000005				
586396.97000	4161556.66000	0.01422	20.83	20.83	0.00
ANNUAL ALL	00000005				
586416.97000	4161556.66000	0.01535	20.82	20.82	0.00
ANNUAL ALL	00000005				
586476.97000	4161556.66000	0.01987	21.24	21.24	0.00
ANNUAL ALL	00000005				
586516.97000	4161556.66000	0.02429	21.11	21.11	0.00
ANNUAL ALL	00000005				
586536.97000	4161556.66000	0.02723	21.52	21.52	0.00
ANNUAL ALL	00000005				
586556.97000	4161556.66000	0.03086	21.77	21.77	0.00
ANNUAL ALL	00000005				
586576.97000	4161556.66000	0.03536	21.56	21.56	0.00
ANNUAL ALL	00000005				
586596.97000	4161556.66000	0.04125	21.58	181.37	0.00
ANNUAL ALL	00000005				
586616.97000	4161556.66000	0.04918	21.57	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161556.66000	0.06046	21.57	181.37	0.00
ANNUAL ALL	00000005				
586656.97000	4161556.66000	0.07806	21.66	181.37	0.00
ANNUAL ALL	00000005				
586376.97000	4161576.66000	0.01281	20.83	20.83	0.00
ANNUAL ALL	00000005				
586396.97000	4161576.66000	0.01375	20.88	20.88	0.00
ANNUAL ALL	00000005				
586456.97000	4161576.66000	0.01741	21.29	21.29	0.00
ANNUAL ALL	00000005				
586496.97000	4161576.66000	0.02087	21.33	21.33	0.00
ANNUAL ALL	00000005				
586516.97000	4161576.66000	0.02307	21.48	21.48	0.00
ANNUAL ALL	00000005				
586536.97000	4161576.66000	0.02572	21.58	21.58	0.00
ANNUAL ALL	00000005				

586556.97000	4161576.66000	0.02896	21.63	21.63	0.00
ANNUAL ALL	00000005				
586576.97000	4161576.66000	0.03300	21.69	21.69	0.00
ANNUAL ALL	00000005				
586596.97000	4161576.66000	0.03819	21.76	181.37	0.00
ANNUAL ALL	00000005				
586616.97000	4161576.66000	0.04508	21.71	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161576.66000	0.05476	21.76	181.37	0.00
ANNUAL ALL	00000005				
586656.97000	4161576.66000	0.06979	21.91	181.37	0.00
ANNUAL ALL	00000005				
586376.97000	4161596.66000	0.01240	20.84	20.84	0.00
ANNUAL ALL	00000005				
586436.97000	4161596.66000	0.01541	21.39	21.39	0.00
ANNUAL ALL	00000005				
586476.97000	4161596.66000	0.01815	21.50	21.50	0.00
ANNUAL ALL	00000005				
586496.97000	4161596.66000	0.01985	21.71	21.71	0.00
ANNUAL ALL	00000005				
586516.97000	4161596.66000	0.02183	21.67	21.67	0.00
ANNUAL ALL	00000005				
586536.97000	4161596.66000	0.02420	21.81	21.81	0.00
ANNUAL ALL	00000005				
586556.97000	4161596.66000	0.02706	21.82	21.82	0.00
ANNUAL ALL	00000005				
586576.97000	4161596.66000	0.03058	21.86	181.17	0.00
ANNUAL ALL	00000005				
586596.97000	4161596.66000	0.03504	21.90	181.37	0.00
ANNUAL ALL	00000005				
586616.97000	4161596.66000	0.04092	22.08	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161596.66000	0.04899	22.07	181.37	0.00
ANNUAL ALL	00000005				
586416.97000	4161616.66000	0.01375	21.49	21.49	0.00
ANNUAL ALL	00000005				
586456.97000	4161616.66000	0.01595	21.53	21.53	0.00
ANNUAL ALL	00000005				
586476.97000	4161616.66000	0.01729	21.80	21.80	0.00
ANNUAL ALL	00000005				
586496.97000	4161616.66000	0.01882	21.85	21.85	0.00
ANNUAL ALL	00000005				
586516.97000	4161616.66000	0.02060	21.92	21.92	0.00
ANNUAL ALL	00000005				
586536.97000	4161616.66000	0.02268	21.96	21.96	0.00
ANNUAL ALL	00000005				
586556.97000	4161616.66000	0.02516	21.92	21.92	0.00
ANNUAL ALL	00000005				
586576.97000	4161616.66000	0.02818	21.97	181.37	0.00
ANNUAL ALL	00000005				
586596.97000	4161616.66000	0.03195	22.20	181.37	0.00
ANNUAL ALL	00000005				

586616.97000	4161616.66000	0.03675	22.14	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161616.66000	0.04326	22.20	181.37	0.00
ANNUAL ALL	00000005				
586656.97000	4161616.66000	0.05279	22.25	181.37	0.00
ANNUAL ALL	00000005				
586396.97000	4161636.66000	0.01237	21.60	21.60	0.00
ANNUAL ALL	00000005				
586416.97000	4161636.66000	0.01322	21.61	21.61	0.00
ANNUAL ALL	00000005				
586436.97000	4161636.66000	0.01417	21.58	21.58	0.00
ANNUAL ALL	00000005				
586456.97000	4161636.66000	0.01523	21.73	21.73	0.00
ANNUAL ALL	00000005				
586476.97000	4161636.66000	0.01644	21.98	21.98	0.00
ANNUAL ALL	00000005				
586496.97000	4161636.66000	0.01781	22.00	22.00	0.00
ANNUAL ALL	00000005				
586516.97000	4161636.66000	0.01938	22.10	22.10	0.00
ANNUAL ALL	00000005				
586536.97000	4161636.66000	0.02120	22.15	22.15	0.00
ANNUAL ALL	00000005				
586556.97000	4161636.66000	0.02333	22.11	181.17	0.00
ANNUAL ALL	00000005				
586576.97000	4161636.66000	0.02589	22.41	181.37	0.00
ANNUAL ALL	00000005				
586596.97000	4161636.66000	0.02898	22.42	181.37	0.00
ANNUAL ALL	00000005				
586616.97000	4161636.66000	0.03284	22.26	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161636.66000	0.03790	22.30	181.37	0.00
ANNUAL ALL	00000005				
586656.97000	4161636.66000	0.04508	22.67	181.37	0.00
ANNUAL ALL	00000005				
586676.97000	4161636.66000	0.05664	22.84	181.37	0.00
ANNUAL ALL	00000005				
586376.97000	4161656.66000	0.01120	21.62	21.62	0.00
ANNUAL ALL	00000005				
586396.97000	4161656.66000	0.01192	22.12	22.12	0.00
ANNUAL ALL	00000005				
586416.97000	4161656.66000	0.01270	22.24	22.24	0.00
ANNUAL ALL	00000005				
586436.97000	4161656.66000	0.01356	22.18	22.18	0.00
ANNUAL ALL	00000005				
586456.97000	4161656.66000	0.01452	21.93	21.93	0.00
ANNUAL ALL	00000005				
586476.97000	4161656.66000	0.01560	22.01	22.01	0.00
ANNUAL ALL	00000005				
586496.97000	4161656.66000	0.01681	22.23	22.23	0.00
ANNUAL ALL	00000005				
586516.97000	4161656.66000	0.01819	22.31	22.31	0.00
ANNUAL ALL	00000005				

586536.97000	4161656.66000	0.01976	22.30	22.30	0.00
ANNUAL ALL	00000005				
586556.97000	4161656.66000	0.02158	22.48	181.37	0.00
ANNUAL ALL	00000005				
586576.97000	4161656.66000	0.02369	22.53	181.37	0.00
ANNUAL ALL	00000005				
586596.97000	4161656.66000	0.02619	22.40	181.37	0.00
ANNUAL ALL	00000005				
586616.97000	4161656.66000	0.02924	22.47	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161656.66000	0.03307	22.48	181.37	0.00
ANNUAL ALL	00000005				
586656.97000	4161656.66000	0.03815	22.82	181.37	0.00
ANNUAL ALL	00000005				
586676.97000	4161656.66000	0.04590	23.00	181.37	0.00
ANNUAL ALL	00000005				
586376.97000	4161676.66000	0.01080	21.89	21.89	0.00
ANNUAL ALL	00000005				
586396.97000	4161676.66000	0.01146	22.34	22.34	0.00
ANNUAL ALL	00000005				
586416.97000	4161676.66000	0.01217	22.86	22.86	0.00
ANNUAL ALL	00000005				
586436.97000	4161676.66000	0.01295	22.84	22.84	0.00
ANNUAL ALL	00000005				
586456.97000	4161676.66000	0.01382	22.35	22.35	0.00
ANNUAL ALL	00000005				
586476.97000	4161676.66000	0.01477	22.38	22.38	0.00
ANNUAL ALL	00000005				
586496.97000	4161676.66000	0.01584	22.47	22.47	0.00
ANNUAL ALL	00000005				
586516.97000	4161676.66000	0.01703	22.40	22.40	0.00
ANNUAL ALL	00000005				
586536.97000	4161676.66000	0.01837	22.65	22.65	0.00
ANNUAL ALL	00000005				
586556.97000	4161676.66000	0.01989	22.64	181.37	0.00
ANNUAL ALL	00000005				
586576.97000	4161676.66000	0.02162	22.60	181.37	0.00
ANNUAL ALL	00000005				
586596.97000	4161676.66000	0.02362	22.67	181.37	0.00
ANNUAL ALL	00000005				
586616.97000	4161676.66000	0.02597	22.81	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161676.66000	0.02878	22.88	181.37	0.00
ANNUAL ALL	00000005				
586656.97000	4161676.66000	0.03224	23.09	181.37	0.00
ANNUAL ALL	00000005				
586676.97000	4161676.66000	0.03686	22.86	192.17	0.00
ANNUAL ALL	00000005				
586376.97000	4161696.66000	0.01040	22.27	22.27	0.00
ANNUAL ALL	00000005				
586396.97000	4161696.66000	0.01099	22.81	22.81	0.00
ANNUAL ALL	00000005				

586416.97000	4161696.66000	0.01164	22.94	22.94	0.00
ANNUAL ALL	00000005				
586436.97000	4161696.66000	0.01235	22.43	22.43	0.00
ANNUAL ALL	00000005				
586456.97000	4161696.66000	0.01312	22.42	22.42	0.00
ANNUAL ALL	00000005				
586476.97000	4161696.66000	0.01396	22.57	22.57	0.00
ANNUAL ALL	00000005				
586496.97000	4161696.66000	0.01489	22.72	22.72	0.00
ANNUAL ALL	00000005				
586516.97000	4161696.66000	0.01591	22.75	22.75	0.00
ANNUAL ALL	00000005				
586536.97000	4161696.66000	0.01704	22.87	181.17	0.00
ANNUAL ALL	00000005				
586556.97000	4161696.66000	0.01830	22.82	181.37	0.00
ANNUAL ALL	00000005				
586576.97000	4161696.66000	0.01970	22.76	181.37	0.00
ANNUAL ALL	00000005				
586596.97000	4161696.66000	0.02128	23.00	181.37	0.00
ANNUAL ALL	00000005				
586616.97000	4161696.66000	0.02305	23.07	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161696.66000	0.02505	23.41	181.37	0.00
ANNUAL ALL	00000005				
586656.97000	4161696.66000	0.02735	23.14	181.37	0.00
ANNUAL ALL	00000005				
586676.97000	4161696.66000	0.02995	23.07	192.17	0.00
ANNUAL ALL	00000005				
586376.97000	4161716.66000	0.00999	22.56	22.56	0.00
ANNUAL ALL	00000005				
586396.97000	4161716.66000	0.01053	22.83	22.83	0.00
ANNUAL ALL	00000005				
586416.97000	4161716.66000	0.01112	22.53	22.53	0.00
ANNUAL ALL	00000005				
586436.97000	4161716.66000	0.01175	22.40	22.40	0.00
ANNUAL ALL	00000005				
586456.97000	4161716.66000	0.01243	22.62	22.62	0.00
ANNUAL ALL	00000005				
586476.97000	4161716.66000	0.01317	22.81	22.81	0.00
ANNUAL ALL	00000005				
586496.97000	4161716.66000	0.01397	23.07	23.07	0.00
ANNUAL ALL	00000005				
586516.97000	4161716.66000	0.01484	23.03	23.03	0.00
ANNUAL ALL	00000005				
586536.97000	4161716.66000	0.01578	22.98	181.37	0.00
ANNUAL ALL	00000005				
586556.97000	4161716.66000	0.01681	22.95	181.37	0.00
ANNUAL ALL	00000005				
586576.97000	4161716.66000	0.01793	22.93	181.37	0.00
ANNUAL ALL	00000005				
586596.97000	4161716.66000	0.01915	23.16	181.37	0.00
ANNUAL ALL	00000005				

586616.97000	4161716.66000	0.02047	23.37	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161716.66000	0.02189	23.36	181.37	0.00
ANNUAL ALL	00000005				
586656.97000	4161716.66000	0.02340	23.37	191.71	0.00
ANNUAL ALL	00000005				
586676.97000	4161716.66000	0.02497	23.37	192.17	0.00
ANNUAL ALL	00000005				
586696.97000	4161716.66000	0.02656	23.06	192.17	0.00
ANNUAL ALL	00000005				
586376.97000	4161736.66000	0.00959	22.43	22.43	0.00
ANNUAL ALL	00000005				
586396.97000	4161736.66000	0.01008	22.48	22.48	0.00
ANNUAL ALL	00000005				
586416.97000	4161736.66000	0.01060	22.27	22.27	0.00
ANNUAL ALL	00000005				
586436.97000	4161736.66000	0.01116	22.43	22.43	0.00
ANNUAL ALL	00000005				
586456.97000	4161736.66000	0.01175	22.76	22.76	0.00
ANNUAL ALL	00000005				
586476.97000	4161736.66000	0.01239	23.19	23.19	0.00
ANNUAL ALL	00000005				
586496.97000	4161736.66000	0.01308	23.32	23.32	0.00
ANNUAL ALL	00000005				
586516.97000	4161736.66000	0.01381	23.20	23.20	0.00
ANNUAL ALL	00000005				
586536.97000	4161736.66000	0.01460	23.26	181.37	0.00
ANNUAL ALL	00000005				
586556.97000	4161736.66000	0.01543	23.17	181.37	0.00
ANNUAL ALL	00000005				
586576.97000	4161736.66000	0.01631	23.21	181.37	0.00
ANNUAL ALL	00000005				
586596.97000	4161736.66000	0.01724	23.60	181.37	0.00
ANNUAL ALL	00000005				
586616.97000	4161736.66000	0.01821	23.57	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161736.66000	0.01922	23.58	181.37	0.00
ANNUAL ALL	00000005				
586656.97000	4161736.66000	0.02023	23.56	192.17	0.00
ANNUAL ALL	00000005				
586676.97000	4161736.66000	0.02122	23.42	192.17	0.00
ANNUAL ALL	00000005				
586696.97000	4161736.66000	0.02219	23.04	192.17	0.00
ANNUAL ALL	00000005				
586376.97000	4161756.66000	0.00919	22.23	22.23	0.00
ANNUAL ALL	00000005				
586396.97000	4161756.66000	0.00962	22.17	22.17	0.00
ANNUAL ALL	00000005				
586416.97000	4161756.66000	0.01009	22.50	22.50	0.00
ANNUAL ALL	00000005				
586436.97000	4161756.66000	0.01058	22.65	22.65	0.00
ANNUAL ALL	00000005				

586456.97000	4161756.66000	0.01110	22.99	22.99	0.00
ANNUAL ALL	00000005				
586476.97000	4161756.66000	0.01165	23.28	23.28	0.00
ANNUAL ALL	00000005				
586496.97000	4161756.66000	0.01223	23.41	23.41	0.00
ANNUAL ALL	00000005				
586516.97000	4161756.66000	0.01284	23.29	181.17	0.00
ANNUAL ALL	00000005				
586536.97000	4161756.66000	0.01349	23.31	181.37	0.00
ANNUAL ALL	00000005				
586556.97000	4161756.66000	0.01415	23.49	181.37	0.00
ANNUAL ALL	00000005				
586576.97000	4161756.66000	0.01484	23.67	181.37	0.00
ANNUAL ALL	00000005				
586596.97000	4161756.66000	0.01555	23.73	181.37	0.00
ANNUAL ALL	00000005				
586616.97000	4161756.66000	0.01626	23.66	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161756.66000	0.01697	23.74	181.37	0.00
ANNUAL ALL	00000005				
586656.97000	4161756.66000	0.01765	23.60	192.17	0.00
ANNUAL ALL	00000005				
586676.97000	4161756.66000	0.01831	23.34	192.17	0.00
ANNUAL ALL	00000005				
586696.97000	4161756.66000	0.01893	22.99	192.17	0.00
ANNUAL ALL	00000005				
586716.97000	4161756.66000	0.01949	22.93	192.17	0.00
ANNUAL ALL	00000005				
586376.97000	4161776.66000	0.00879	22.19	22.19	0.00
ANNUAL ALL	00000005				
586396.97000	4161776.66000	0.00918	22.28	22.28	0.00
ANNUAL ALL	00000005				
586416.97000	4161776.66000	0.00959	22.57	22.57	0.00
ANNUAL ALL	00000005				
586436.97000	4161776.66000	0.01002	22.97	22.97	0.00
ANNUAL ALL	00000005				
586456.97000	4161776.66000	0.01047	23.21	23.21	0.00
ANNUAL ALL	00000005				
586476.97000	4161776.66000	0.01094	23.40	23.40	0.00
ANNUAL ALL	00000005				
586496.97000	4161776.66000	0.01143	23.45	23.45	0.00
ANNUAL ALL	00000005				
586516.97000	4161776.66000	0.01193	23.64	181.17	0.00
ANNUAL ALL	00000005				
586536.97000	4161776.66000	0.01245	23.69	181.37	0.00
ANNUAL ALL	00000005				
586556.97000	4161776.66000	0.01298	23.68	181.37	0.00
ANNUAL ALL	00000005				
586576.97000	4161776.66000	0.01352	23.76	181.37	0.00
ANNUAL ALL	00000005				
586596.97000	4161776.66000	0.01405	23.78	181.37	0.00
ANNUAL ALL	00000005				

586616.97000	4161776.66000	0.01457	23.86	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161776.66000	0.01507	23.89	192.17	0.00
ANNUAL ALL	00000005				
586656.97000	4161776.66000	0.01554	23.61	192.17	0.00
ANNUAL ALL	00000005				
586676.97000	4161776.66000	0.01598	23.35	192.17	0.00
ANNUAL ALL	00000005				
586696.97000	4161776.66000	0.01639	23.01	192.17	0.00
ANNUAL ALL	00000005				
586716.97000	4161776.66000	0.01676	22.83	192.17	0.00
ANNUAL ALL	00000005				
586396.97000	4161796.66000	0.00874	22.52	22.52	0.00
ANNUAL ALL	00000005				
586416.97000	4161796.66000	0.00910	22.84	22.84	0.00
ANNUAL ALL	00000005				
586436.97000	4161796.66000	0.00947	23.38	23.38	0.00
ANNUAL ALL	00000005				
586456.97000	4161796.66000	0.00986	23.34	23.34	0.00
ANNUAL ALL	00000005				
586476.97000	4161796.66000	0.01026	23.51	23.51	0.00
ANNUAL ALL	00000005				
586496.97000	4161796.66000	0.01066	23.82	23.82	0.00
ANNUAL ALL	00000005				
586516.97000	4161796.66000	0.01108	23.69	181.37	0.00
ANNUAL ALL	00000005				
586536.97000	4161796.66000	0.01150	23.78	181.37	0.00
ANNUAL ALL	00000005				
586556.97000	4161796.66000	0.01192	23.93	181.37	0.00
ANNUAL ALL	00000005				
586576.97000	4161796.66000	0.01233	23.91	181.37	0.00
ANNUAL ALL	00000005				
586596.97000	4161796.66000	0.01273	23.88	181.37	0.00
ANNUAL ALL	00000005				
586616.97000	4161796.66000	0.01311	24.15	181.37	0.00
ANNUAL ALL	00000005				
586636.97000	4161796.66000	0.01347	23.93	192.17	0.00
ANNUAL ALL	00000005				
586656.97000	4161796.66000	0.01379	23.74	192.17	0.00
ANNUAL ALL	00000005				
586676.97000	4161796.66000	0.01409	23.36	192.17	0.00
ANNUAL ALL	00000005				
586696.97000	4161796.66000	0.01437	23.08	192.17	0.00
ANNUAL ALL	00000005				
586716.97000	4161796.66000	0.01462	22.81	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161435.88000	0.11841	18.66	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161455.88000	0.10872	18.69	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161455.88000	0.09487	18.42	192.17	0.00
ANNUAL ALL	00000005				

587136.80000	4161475.88000	0.09251	18.81	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161475.88000	0.08500	18.49	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161475.88000	0.07777	18.39	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161495.88000	0.08100	18.84	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161495.88000	0.07557	18.49	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161495.88000	0.07075	18.54	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161495.88000	0.06608	18.71	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161515.88000	0.07575	19.16	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161515.88000	0.07017	18.71	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161515.88000	0.06542	18.45	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161515.88000	0.06143	18.77	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161515.88000	0.05767	18.96	192.17	0.00
ANNUAL ALL	00000005				
587076.80000	4161535.88000	0.07347	19.78	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161535.88000	0.06738	19.26	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161535.88000	0.06221	18.56	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161535.88000	0.05822	18.97	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161535.88000	0.05455	19.08	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161535.88000	0.05122	19.11	192.17	0.00
ANNUAL ALL	00000005				
587056.80000	4161555.88000	0.07298	20.16	192.17	0.00
ANNUAL ALL	00000005				
587076.80000	4161555.88000	0.06610	19.85	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161555.88000	0.06048	19.24	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161555.88000	0.05609	19.40	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161555.88000	0.05225	19.24	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161555.88000	0.04893	19.25	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161555.88000	0.04587	18.82	192.17	0.00
ANNUAL ALL	00000005				
587036.80000	4161575.88000	0.07337	19.74	192.17	0.00
ANNUAL ALL	00000005				

587056.80000	4161575.88000	0.06550	19.85	192.17	0.00
ANNUAL ALL	00000005				
587076.80000	4161575.88000	0.05933	19.58	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161575.88000	0.05458	19.87	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161575.88000	0.05056	19.83	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161575.88000	0.04712	19.70	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161575.88000	0.04403	19.10	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161575.88000	0.04142	19.04	192.17	0.00
ANNUAL ALL	00000005				
587016.80000	4161595.88000	0.07372	20.10	192.17	0.00
ANNUAL ALL	00000005				
587036.80000	4161595.88000	0.06484	19.82	192.17	0.00
ANNUAL ALL	00000005				
587056.80000	4161595.88000	0.05811	19.44	192.17	0.00
ANNUAL ALL	00000005				
587076.80000	4161595.88000	0.05300	19.54	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161595.88000	0.04895	20.05	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161595.88000	0.04547	20.11	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161595.88000	0.04239	19.57	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161595.88000	0.03977	19.33	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161595.88000	0.03753	19.50	192.17	0.00
ANNUAL ALL	00000005				
586956.80000	4161615.88000	0.09376	20.89	192.17	0.00
ANNUAL ALL	00000005				
586976.80000	4161615.88000	0.08095	20.38	192.17	0.00
ANNUAL ALL	00000005				
586996.80000	4161615.88000	0.07072	20.13	192.17	0.00
ANNUAL ALL	00000005				
587016.80000	4161615.88000	0.06251	19.71	192.17	0.00
ANNUAL ALL	00000005				
587036.80000	4161615.88000	0.05618	19.63	192.17	0.00
ANNUAL ALL	00000005				
587056.80000	4161615.88000	0.05122	19.93	192.17	0.00
ANNUAL ALL	00000005				
587076.80000	4161615.88000	0.04698	19.58	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161615.88000	0.04353	19.56	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161615.88000	0.04065	19.74	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161615.88000	0.03812	19.63	192.17	0.00
ANNUAL ALL	00000005				

587156.80000	4161615.88000	0.03597	19.92	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161615.88000	0.03395	19.45	192.17	0.00
ANNUAL ALL	00000005				
586956.80000	4161635.88000	0.07086	21.08	192.17	0.00
ANNUAL ALL	00000005				
586976.80000	4161635.88000	0.06404	20.85	192.17	0.00
ANNUAL ALL	00000005				
586996.80000	4161635.88000	0.05765	19.80	192.17	0.00
ANNUAL ALL	00000005				
587016.80000	4161635.88000	0.05263	19.85	192.17	0.00
ANNUAL ALL	00000005				
587036.80000	4161635.88000	0.04836	20.07	192.17	0.00
ANNUAL ALL	00000005				
587056.80000	4161635.88000	0.04467	20.21	192.17	0.00
ANNUAL ALL	00000005				
587076.80000	4161635.88000	0.04148	20.19	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161635.88000	0.03863	19.58	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161635.88000	0.03625	19.49	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161635.88000	0.03425	19.94	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161635.88000	0.03239	19.76	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161635.88000	0.03067	19.20	192.17	0.00
ANNUAL ALL	00000005				
586777.84000	4161660.60000	0.09904	21.63	192.17	0.00
ANNUAL ALL	00000005				
586796.80000	4161655.88000	0.11429	21.53	192.17	0.00
ANNUAL ALL	00000005				
586936.80000	4161655.88000	0.05955	20.84	192.17	0.00
ANNUAL ALL	00000005				
586956.80000	4161655.88000	0.05521	20.68	192.17	0.00
ANNUAL ALL	00000005				
586976.80000	4161655.88000	0.05142	21.01	192.17	0.00
ANNUAL ALL	00000005				
586996.80000	4161655.88000	0.04774	20.76	192.17	0.00
ANNUAL ALL	00000005				
587016.80000	4161655.88000	0.04434	20.30	192.17	0.00
ANNUAL ALL	00000005				
587036.80000	4161655.88000	0.04139	20.34	192.17	0.00
ANNUAL ALL	00000005				
587056.80000	4161655.88000	0.03872	20.25	192.17	0.00
ANNUAL ALL	00000005				
587076.80000	4161655.88000	0.03630	19.90	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161655.88000	0.03417	19.67	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161655.88000	0.03230	19.64	192.17	0.00
ANNUAL ALL	00000005				

587136.80000	4161655.88000	0.03061	19.38	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161655.88000	0.02911	19.39	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161655.88000	0.02780	19.92	192.17	0.00
ANNUAL ALL	00000005				
586876.80000	4161675.88000	0.05536	21.34	192.17	0.00
ANNUAL ALL	00000005				
586896.80000	4161675.88000	0.05218	20.88	192.17	0.00
ANNUAL ALL	00000005				
586916.80000	4161675.88000	0.04937	20.83	192.17	0.00
ANNUAL ALL	00000005				
586936.80000	4161675.88000	0.04675	20.91	192.17	0.00
ANNUAL ALL	00000005				
586956.80000	4161675.88000	0.04427	21.01	192.17	0.00
ANNUAL ALL	00000005				
586976.80000	4161675.88000	0.04178	20.59	192.17	0.00
ANNUAL ALL	00000005				
586996.80000	4161675.88000	0.03961	20.91	192.17	0.00
ANNUAL ALL	00000005				
587016.80000	4161675.88000	0.03744	20.74	192.17	0.00
ANNUAL ALL	00000005				
587036.80000	4161675.88000	0.03540	20.47	192.17	0.00
ANNUAL ALL	00000005				
587056.80000	4161675.88000	0.03350	20.16	192.17	0.00
ANNUAL ALL	00000005				
587076.80000	4161675.88000	0.03174	19.80	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161675.88000	0.03021	20.07	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161675.88000	0.02876	19.95	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161675.88000	0.02739	19.48	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161675.88000	0.02620	19.61	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161675.88000	0.02510	19.84	192.17	0.00
ANNUAL ALL	00000005				
586876.80000	4161695.88000	0.04170	21.07	192.17	0.00
ANNUAL ALL	00000005				
586896.80000	4161695.88000	0.04028	20.71	192.17	0.00
ANNUAL ALL	00000005				
586916.80000	4161695.88000	0.03892	20.86	192.17	0.00
ANNUAL ALL	00000005				
586936.80000	4161695.88000	0.03754	21.18	192.17	0.00
ANNUAL ALL	00000005				
586956.80000	4161695.88000	0.03604	21.05	192.17	0.00
ANNUAL ALL	00000005				
586976.80000	4161695.88000	0.03452	20.65	192.17	0.00
ANNUAL ALL	00000005				
586996.80000	4161695.88000	0.03308	20.50	192.17	0.00
ANNUAL ALL	00000005				

587016.80000	4161695.88000	0.03174	20.81	192.17	0.00
ANNUAL ALL	00000005				
587036.80000	4161695.88000	0.03041	20.89	192.17	0.00
ANNUAL ALL	00000005				
587056.80000	4161695.88000	0.02906	20.38	192.17	0.00
ANNUAL ALL	00000005				
587076.80000	4161695.88000	0.02783	20.27	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161695.88000	0.02667	20.23	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161695.88000	0.02553	19.75	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161695.88000	0.02455	20.22	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161695.88000	0.02359	20.13	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161695.88000	0.02266	19.75	192.17	0.00
ANNUAL ALL	00000005				
586876.80000	4161715.88000	0.03267	21.28	192.17	0.00
ANNUAL ALL	00000005				
586896.80000	4161715.88000	0.03204	20.87	192.17	0.00
ANNUAL ALL	00000005				
586916.80000	4161715.88000	0.03141	21.12	192.17	0.00
ANNUAL ALL	00000005				
586936.80000	4161715.88000	0.03065	21.22	192.17	0.00
ANNUAL ALL	00000005				
586956.80000	4161715.88000	0.02977	20.93	192.17	0.00
ANNUAL ALL	00000005				
586976.80000	4161715.88000	0.02885	20.61	192.17	0.00
ANNUAL ALL	00000005				
586996.80000	4161715.88000	0.02799	20.87	192.17	0.00
ANNUAL ALL	00000005				
587016.80000	4161715.88000	0.02706	20.59	192.17	0.00
ANNUAL ALL	00000005				
587036.80000	4161715.88000	0.02618	20.75	192.17	0.00
ANNUAL ALL	00000005				
587056.80000	4161715.88000	0.02530	20.81	192.17	0.00
ANNUAL ALL	00000005				
587076.80000	4161715.88000	0.02440	20.39	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161715.88000	0.02354	20.16	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161715.88000	0.02270	19.82	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161715.88000	0.02193	19.89	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161715.88000	0.02123	20.56	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161715.88000	0.02051	20.40	192.17	0.00
ANNUAL ALL	00000005				
586876.80000	4161735.88000	0.02638	21.43	192.17	0.00
ANNUAL ALL	00000005				

586896.80000	4161735.88000	0.02613	21.06	192.17	0.00
ANNUAL ALL	00000005				
586916.80000	4161735.88000	0.02584	21.21	192.17	0.00
ANNUAL ALL	00000005				
586936.80000	4161735.88000	0.02544	21.11	192.17	0.00
ANNUAL ALL	00000005				
586956.80000	4161735.88000	0.02493	20.76	192.17	0.00
ANNUAL ALL	00000005				
586976.80000	4161735.88000	0.02443	20.96	192.17	0.00
ANNUAL ALL	00000005				
586996.80000	4161735.88000	0.02390	21.20	192.17	0.00
ANNUAL ALL	00000005				
587016.80000	4161735.88000	0.02329	20.92	192.17	0.00
ANNUAL ALL	00000005				
587036.80000	4161735.88000	0.02266	20.55	192.17	0.00
ANNUAL ALL	00000005				
587056.80000	4161735.88000	0.02206	20.52	192.17	0.00
ANNUAL ALL	00000005				
587076.80000	4161735.88000	0.02145	20.45	192.17	0.00
ANNUAL ALL	00000005				
587096.80000	4161735.88000	0.02084	20.39	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161735.88000	0.02025	20.53	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161735.88000	0.01964	20.22	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161735.88000	0.01906	20.06	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161735.88000	0.01854	20.69	192.17	0.00
ANNUAL ALL	00000005				
586876.80000	4161755.88000	0.02186	21.57	192.17	0.00
ANNUAL ALL	00000005				
586896.80000	4161755.88000	0.02180	21.47	192.17	0.00
ANNUAL ALL	00000005				
586916.80000	4161755.88000	0.02164	21.04	192.17	0.00
ANNUAL ALL	00000005				
586936.80000	4161755.88000	0.02147	21.26	192.17	0.00
ANNUAL ALL	00000005				
586956.80000	4161755.88000	0.02121	21.25	192.17	0.00
ANNUAL ALL	00000005				
586976.80000	4161755.88000	0.02092	21.41	192.17	0.00
ANNUAL ALL	00000005				
586996.80000	4161755.88000	0.02056	21.21	192.17	0.00
ANNUAL ALL	00000005				
587016.80000	4161755.88000	0.02017	20.84	192.17	0.00
ANNUAL ALL	00000005				
587036.80000	4161755.88000	0.01979	21.20	192.17	0.00
ANNUAL ALL	00000005				
587056.80000	4161755.88000	0.01935	20.68	192.17	0.00
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587076.80000	4161755.88000	0.01893	20.71	192.17	0.00
ANNUAL ALL	00000005				

587096.80000	4161755.88000	0.01852	21.01	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161755.88000	0.01807	20.76	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161755.88000	0.01762	20.44	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161755.88000	0.01717	20.14	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161755.88000	0.01675	20.51	192.17	0.00
ANNUAL ALL	00000005				
586876.80000	4161775.88000	0.01851	21.76	192.17	0.00
ANNUAL ALL	00000005				
586896.80000	4161775.88000	0.01852	21.74	192.17	0.00
ANNUAL ALL	00000005				
586916.80000	4161775.88000	0.01846	21.25	192.17	0.00
ANNUAL ALL	00000005				
586936.80000	4161775.88000	0.01840	21.85	192.17	0.00
ANNUAL ALL	00000005				
586956.80000	4161775.88000	0.01825	21.49	192.17	0.00
ANNUAL ALL	00000005				
586976.80000	4161775.88000	0.01808	21.40	192.17	0.00
ANNUAL ALL	00000005				
586996.80000	4161775.88000	0.01784	20.91	192.17	0.00
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587016.80000	4161775.88000	0.01763	21.37	192.17	0.00
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587036.80000	4161775.88000	0.01736	21.11	192.17	0.00
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587056.80000	4161775.88000	0.01708	21.05	192.17	0.00
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587076.80000	4161775.88000	0.01680	21.39	192.17	0.00
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587096.80000	4161775.88000	0.01648	21.07	192.17	0.00
ANNUAL ALL	00000005				
587116.80000	4161775.88000	0.01616	21.00	192.17	0.00
ANNUAL ALL	00000005				
587136.80000	4161775.88000	0.01582	20.36	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161775.88000	0.01550	20.58	192.17	0.00
ANNUAL ALL	00000005				
587176.80000	4161775.88000	0.01518	20.78	192.17	0.00
ANNUAL ALL	00000005				
586876.80000	4161795.88000	0.01595	21.83	192.17	0.00
ANNUAL ALL	00000005				
586896.80000	4161795.88000	0.01598	21.79	192.17	0.00
ANNUAL ALL	00000005				
586916.80000	4161795.88000	0.01597	21.48	192.17	0.00
ANNUAL ALL	00000005				
586936.80000	4161795.88000	0.01595	21.85	192.17	0.00
ANNUAL ALL	00000005				
586956.80000	4161795.88000	0.01588	21.61	192.17	0.00
ANNUAL ALL	00000005				

586976.80000	4161795.88000	0.01576	21.07	192.17	0.00
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586996.80000	4161795.88000	0.01566	21.50	192.17	0.00
ANNUAL ALL	00000005				
587016.80000	4161795.88000	0.01550	21.34	192.17	0.00
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587036.80000	4161795.88000	0.01533	21.14	192.17	0.00
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587056.80000	4161795.88000	0.01516	21.64	192.17	0.00
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587076.80000	4161795.88000	0.01495	21.34	192.17	0.00
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587096.80000	4161795.88000	0.01472	20.89	192.17	0.00
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587116.80000	4161795.88000	0.01448	20.52	192.17	0.00
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587136.80000	4161795.88000	0.01425	20.59	192.17	0.00
ANNUAL ALL	00000005				
587156.80000	4161795.88000	0.01402	21.00	192.17	0.00
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587199.00000	4161414.19000	0.11492	18.52	192.17	0.00
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587219.00000	4161414.19000	0.09552	18.08	192.17	0.00
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587239.00000	4161414.19000	0.08221	18.12	192.17	0.00
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587259.00000	4161414.19000	0.07203	17.96	192.17	0.00
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587279.00000	4161414.19000	0.06432	18.45	192.17	0.00
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587299.00000	4161414.19000	0.05789	18.59	192.17	0.00
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587319.00000	4161414.19000	0.05242	18.34	192.17	0.00
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587399.00000	4161414.19000	0.03784	19.92	192.17	0.00
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587419.00000	4161414.19000	0.03522	20.20	192.17	0.00
ANNUAL ALL	00000005				
587439.00000	4161414.19000	0.03295	21.33	192.17	0.00
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587459.00000	4161414.19000	0.03082	21.01	192.17	0.00
ANNUAL ALL	00000005				
587479.00000	4161414.19000	0.02891	20.90	192.17	0.00
ANNUAL ALL	00000005				
587499.00000	4161414.19000	0.02722	21.47	192.17	0.00
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587519.00000	4161414.19000	0.02569	22.44	192.17	0.00
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587199.00000	4161434.19000	0.09905	18.20	192.17	0.00
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587219.00000	4161434.19000	0.08564	18.44	192.17	0.00
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587239.00000	4161434.19000	0.07512	18.50	192.17	0.00
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587259.00000	4161434.19000	0.06664	18.29	192.17	0.00
ANNUAL ALL	00000005				
587279.00000	4161434.19000	0.05984	18.22	192.17	0.00
ANNUAL ALL	00000005				
587299.00000	4161434.19000	0.05442	18.88	192.17	0.00
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587379.00000	4161434.19000	0.03906	20.35	192.17	0.00
ANNUAL ALL	00000005				
587399.00000	4161434.19000	0.03633	20.77	192.17	0.00
ANNUAL ALL	00000005				
587419.00000	4161434.19000	0.03384	20.40	192.17	0.00
ANNUAL ALL	00000005				
587439.00000	4161434.19000	0.03166	20.61	192.17	0.00
ANNUAL ALL	00000005				
587459.00000	4161434.19000	0.02970	20.78	192.17	0.00
ANNUAL ALL	00000005				
587479.00000	4161434.19000	0.02794	21.30	192.17	0.00
ANNUAL ALL	00000005				
587499.00000	4161434.19000	0.02635	22.12	192.17	0.00
ANNUAL ALL	00000005				
587199.00000	4161454.19000	0.08378	18.13	192.17	0.00
ANNUAL ALL	00000005				
587219.00000	4161454.19000	0.07481	18.41	192.17	0.00
ANNUAL ALL	00000005				
587239.00000	4161454.19000	0.06723	18.65	192.17	0.00
ANNUAL ALL	00000005				
587259.00000	4161454.19000	0.06070	18.61	192.17	0.00
ANNUAL ALL	00000005				
587279.00000	4161454.19000	0.05523	18.76	192.17	0.00
ANNUAL ALL	00000005				
587299.00000	4161454.19000	0.05052	18.89	192.17	0.00
ANNUAL ALL	00000005				
587359.00000	4161454.19000	0.03981	19.73	192.17	0.00
ANNUAL ALL	00000005				
587379.00000	4161454.19000	0.03706	20.26	192.17	0.00
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587399.00000	4161454.19000	0.03459	20.59	192.17	0.00
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587419.00000	4161454.19000	0.03236	20.80	192.17	0.00
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587439.00000	4161454.19000	0.03032	20.51	192.17	0.00
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587459.00000	4161454.19000	0.02853	21.17	192.17	0.00
ANNUAL ALL	00000005				
587479.00000	4161454.19000	0.02689	21.70	192.17	0.00
ANNUAL ALL	00000005				
587199.00000	4161474.19000	0.07145	18.57	192.17	0.00
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587219.00000	4161474.19000	0.06505	18.24	192.17	0.00
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587239.00000	4161474.19000	0.05956	18.32	192.17	0.00
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587259.00000	4161474.19000	0.05477	18.70	192.17	0.00
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587279.00000	4161474.19000	0.05054	19.24	192.17	0.00
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587299.00000	4161474.19000	0.04668	19.46	192.17	0.00
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587319.00000	4161474.19000	0.04320	19.40	192.17	0.00
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587339.00000	4161474.19000	0.04021	20.06	192.17	0.00
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587359.00000	4161474.19000	0.03741	19.79	192.17	0.00
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587379.00000	4161474.19000	0.03494	19.89	192.17	0.00
ANNUAL ALL	00000005				
587399.00000	4161474.19000	0.03275	20.31	192.17	0.00
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587419.00000	4161474.19000	0.03072	20.21	192.17	0.00
ANNUAL ALL	00000005				
587439.00000	4161474.19000	0.02894	20.97	192.17	0.00
ANNUAL ALL	00000005				
587459.00000	4161474.19000	0.02729	21.46	192.17	0.00
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587199.00000	4161494.19000	0.06173	18.81	192.17	0.00
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587219.00000	4161494.19000	0.05719	18.58	192.17	0.00
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587239.00000	4161494.19000	0.05300	18.37	192.17	0.00
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587259.00000	4161494.19000	0.04935	18.82	192.17	0.00
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587279.00000	4161494.19000	0.04592	19.02	192.17	0.00
ANNUAL ALL	00000005				
587299.00000	4161494.19000	0.04283	19.44	192.17	0.00
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587319.00000	4161494.19000	0.03998	19.67	192.17	0.00
ANNUAL ALL	00000005				
587339.00000	4161494.19000	0.03741	20.14	192.17	0.00
ANNUAL ALL	00000005				
587359.00000	4161494.19000	0.03504	20.31	192.17	0.00
ANNUAL ALL	00000005				
587379.00000	4161494.19000	0.03284	19.96	192.17	0.00
ANNUAL ALL	00000005				
587399.00000	4161494.19000	0.03088	20.02	192.17	0.00
ANNUAL ALL	00000005				
587419.00000	4161494.19000	0.02911	20.52	192.17	0.00
ANNUAL ALL	00000005				
587439.00000	4161494.19000	0.02749	20.99	192.17	0.00
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587199.00000	4161514.19000	0.05421	18.92	192.17	0.00
ANNUAL ALL	00000005				

587219.00000	4161514.19000	0.05063	18.47	192.17	0.00
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587239.00000	4161514.19000	0.04751	18.76	192.17	0.00
ANNUAL ALL	00000005				
587259.00000	4161514.19000	0.04455	18.96	192.17	0.00
ANNUAL ALL	00000005				
587279.00000	4161514.19000	0.04183	19.38	192.17	0.00
ANNUAL ALL	00000005				
587299.00000	4161514.19000	0.03921	19.28	192.17	0.00
ANNUAL ALL	00000005				
587319.00000	4161514.19000	0.03684	19.49	192.17	0.00
ANNUAL ALL	00000005				
587339.00000	4161514.19000	0.03467	19.89	192.17	0.00
ANNUAL ALL	00000005				
587359.00000	4161514.19000	0.03267	20.35	192.17	0.00
ANNUAL ALL	00000005				
587379.00000	4161514.19000	0.03081	20.61	192.17	0.00
ANNUAL ALL	00000005				
587399.00000	4161514.19000	0.02906	20.38	192.17	0.00
ANNUAL ALL	00000005				
587419.00000	4161514.19000	0.02749	20.73	192.17	0.00
ANNUAL ALL	00000005				
587199.00000	4161534.19000	0.04815	18.59	192.17	0.00
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587219.00000	4161534.19000	0.04539	18.83	192.17	0.00
ANNUAL ALL	00000005				
587239.00000	4161534.19000	0.04280	19.04	192.17	0.00
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587259.00000	4161534.19000	0.04039	19.37	192.17	0.00
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587279.00000	4161534.19000	0.03811	19.56	192.17	0.00
ANNUAL ALL	00000005				
587299.00000	4161534.19000	0.03600	19.95	192.17	0.00
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587319.00000	4161534.19000	0.03394	19.63	192.17	0.00
ANNUAL ALL	00000005				
587339.00000	4161534.19000	0.03208	19.72	192.17	0.00
ANNUAL ALL	00000005				
587359.00000	4161534.19000	0.03036	20.05	192.17	0.00
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587379.00000	4161534.19000	0.02877	20.46	192.17	0.00
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587399.00000	4161534.19000	0.02727	20.75	192.17	0.00
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587199.00000	4161554.19000	0.04333	18.88	192.17	0.00
ANNUAL ALL	00000005				
587219.00000	4161554.19000	0.04094	19.06	192.17	0.00
ANNUAL ALL	00000005				
587239.00000	4161554.19000	0.03874	19.23	192.17	0.00
ANNUAL ALL	00000005				
587259.00000	4161554.19000	0.03670	19.51	192.17	0.00
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587279.00000	4161554.19000	0.03481	19.93	192.17	0.00
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587299.00000	4161554.19000	0.03301	20.14	192.17	0.00
ANNUAL ALL	00000005				
587319.00000	4161554.19000	0.03131	20.22	192.17	0.00
ANNUAL ALL	00000005				
587339.00000	4161554.19000	0.02965	19.53	192.17	0.00
ANNUAL ALL	00000005				
587359.00000	4161554.19000	0.02820	20.12	192.17	0.00
ANNUAL ALL	00000005				
587379.00000	4161554.19000	0.02681	20.29	192.17	0.00
ANNUAL ALL	00000005				
587199.00000	4161574.19000	0.03921	19.19	192.17	0.00
ANNUAL ALL	00000005				
587219.00000	4161574.19000	0.03711	19.29	192.17	0.00
ANNUAL ALL	00000005				
587239.00000	4161574.19000	0.03521	19.49	192.17	0.00
ANNUAL ALL	00000005				
587259.00000	4161574.19000	0.03347	19.84	192.17	0.00
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587279.00000	4161574.19000	0.03183	20.07	192.17	0.00
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ANNUAL ALL	00000005				
587319.00000	4161574.19000	0.02879	19.73	192.17	0.00
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587259.00000	4161594.19000	0.03057	20.08	192.17	0.00
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587279.00000	4161594.19000	0.02915	20.25	192.17	0.00
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ANNUAL ALL	00000005				
587319.00000	4161594.19000	0.02654	19.93	192.17	0.00
ANNUAL ALL	00000005				
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587199.00000	4161614.19000	0.03226	19.34	192.17	0.00
ANNUAL ALL	00000005				
587219.00000	4161614.19000	0.03073	19.87	192.17	0.00
ANNUAL ALL	00000005				
587239.00000	4161614.19000	0.02930	20.17	192.17	0.00
ANNUAL ALL	00000005				

587259.00000	4161614.19000	0.02798	20.38	192.17	0.00
ANNUAL ALL	00000005				
587279.00000	4161614.19000	0.02670	19.94	192.17	0.00
ANNUAL ALL	00000005				
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ANNUAL ALL	00000005				
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ANNUAL ALL	00000005				
587339.00000	4161614.19000	0.02351	21.13	192.17	0.00
ANNUAL ALL	00000005				
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ANNUAL ALL	00000005				
587219.00000	4161634.19000	0.02799	20.00	192.17	0.00
ANNUAL ALL	00000005				
587239.00000	4161634.19000	0.02676	20.34	192.17	0.00
ANNUAL ALL	00000005				
587259.00000	4161634.19000	0.02559	20.09	192.17	0.00
ANNUAL ALL	00000005				
587279.00000	4161634.19000	0.02451	20.00	192.17	0.00
ANNUAL ALL	00000005				
587299.00000	4161634.19000	0.02353	20.33	192.17	0.00
ANNUAL ALL	00000005				
587319.00000	4161634.19000	0.02261	20.71	192.17	0.00
ANNUAL ALL	00000005				
587199.00000	4161654.19000	0.02658	19.35	192.17	0.00
ANNUAL ALL	00000005				
587219.00000	4161654.19000	0.02549	20.13	192.17	0.00
ANNUAL ALL	00000005				
587239.00000	4161654.19000	0.02442	20.04	192.17	0.00
ANNUAL ALL	00000005				
587259.00000	4161654.19000	0.02341	19.82	192.17	0.00
ANNUAL ALL	00000005				
587279.00000	4161654.19000	0.02253	20.42	192.17	0.00
ANNUAL ALL	00000005				
587299.00000	4161654.19000	0.02168	20.76	192.17	0.00
ANNUAL ALL	00000005				
587199.00000	4161674.19000	0.02417	20.01	192.17	0.00
ANNUAL ALL	00000005				
587219.00000	4161674.19000	0.02317	19.51	192.17	0.00
ANNUAL ALL	00000005				
587239.00000	4161674.19000	0.02228	19.70	192.17	0.00
ANNUAL ALL	00000005				
587259.00000	4161674.19000	0.02148	20.35	192.17	0.00
ANNUAL ALL	00000005				
587279.00000	4161674.19000	0.02071	20.75	192.17	0.00
ANNUAL ALL	00000005				
587199.00000	4161694.19000	0.02193	20.08	192.17	0.00
ANNUAL ALL	00000005				
587219.00000	4161694.19000	0.02114	20.13	192.17	0.00
ANNUAL ALL	00000005				
587239.00000	4161694.19000	0.02039	20.35	192.17	0.00
ANNUAL ALL	00000005				

587259.00000	4161694.19000	0.01969	20.44	192.17	0.00
ANNUAL ALL	00000005				
587199.00000	4161714.19000	0.01990	20.03	192.17	0.00
ANNUAL ALL	00000005				
587219.00000	4161714.19000	0.01926	20.35	192.17	0.00
ANNUAL ALL	00000005				
587239.00000	4161714.19000	0.01866	21.12	192.17	0.00
ANNUAL ALL	00000005				
587199.00000	4161734.19000	0.01807	20.42	192.17	0.00
ANNUAL ALL	00000005				
587219.00000	4161734.19000	0.01754	20.43	192.17	0.00
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587199.00000	4161754.19000	0.01643	20.88	192.17	0.00
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586920.17000	4160794.91000	0.01288	15.68	15.68	0.00
ANNUAL ALL	00000005				
586940.17000	4160794.91000	0.01311	15.54	15.54	0.00
ANNUAL ALL	00000005				
586960.17000	4160794.91000	0.01330	14.54	15.41	0.00
ANNUAL ALL	00000005				
586980.17000	4160794.91000	0.01359	15.08	15.08	0.00
ANNUAL ALL	00000005				
586900.17000	4160814.91000	0.01351	15.73	15.73	0.00
ANNUAL ALL	00000005				
586920.17000	4160814.91000	0.01376	15.76	15.76	0.00
ANNUAL ALL	00000005				
586940.17000	4160814.91000	0.01402	15.76	15.76	0.00
ANNUAL ALL	00000005				
586960.17000	4160814.91000	0.01429	15.69	15.69	0.00
ANNUAL ALL	00000005				
586980.17000	4160814.91000	0.01458	16.00	16.00	0.00
ANNUAL ALL	00000005				
587000.17000	4160814.91000	0.01486	16.14	16.14	0.00
ANNUAL ALL	00000005				
586880.17000	4160834.91000	0.01421	15.59	15.59	0.00
ANNUAL ALL	00000005				
586900.17000	4160834.91000	0.01447	15.72	15.72	0.00
ANNUAL ALL	00000005				
586920.17000	4160834.91000	0.01474	15.80	15.80	0.00
ANNUAL ALL	00000005				
586940.17000	4160834.91000	0.01503	15.84	15.84	0.00
ANNUAL ALL	00000005				
586960.17000	4160834.91000	0.01534	15.97	15.97	0.00
ANNUAL ALL	00000005				
587000.17000	4160834.91000	0.01591	15.73	15.73	0.00
ANNUAL ALL	00000005				
587020.17000	4160834.91000	0.01618	15.71	15.71	0.00
ANNUAL ALL	00000005				
586860.17000	4160854.91000	0.01500	15.59	15.59	0.00
ANNUAL ALL	00000005				
586880.17000	4160854.91000	0.01526	15.76	15.76	0.00
ANNUAL ALL	00000005				

586900.17000	4160854.91000	0.01554	15.84	15.84	0.00
ANNUAL ALL	00000005				
586920.17000	4160854.91000	0.01584	15.80	15.80	0.00
ANNUAL ALL	00000005				
587000.17000	4160854.91000	0.01709	15.57	15.57	0.00
ANNUAL ALL	00000005				
587020.17000	4160854.91000	0.01738	15.65	15.65	0.00
ANNUAL ALL	00000005				
587040.17000	4160854.91000	0.01765	15.70	15.70	0.00
ANNUAL ALL	00000005				
586840.17000	4160874.91000	0.01593	15.99	15.99	0.00
ANNUAL ALL	00000005				
586860.17000	4160874.91000	0.01617	15.95	15.95	0.00
ANNUAL ALL	00000005				
586880.17000	4160874.91000	0.01645	15.98	15.98	0.00
ANNUAL ALL	00000005				
586900.17000	4160874.91000	0.01674	15.79	15.79	0.00
ANNUAL ALL	00000005				
586960.17000	4160874.91000	0.01779	15.97	15.97	0.00
ANNUAL ALL	00000005				
587000.17000	4160874.91000	0.01839	15.12	15.12	0.00
ANNUAL ALL	00000005				
587020.17000	4160874.91000	0.01873	15.53	15.53	0.00
ANNUAL ALL	00000005				
587040.17000	4160874.91000	0.01902	15.71	15.71	0.00
ANNUAL ALL	00000005				
587060.17000	4160874.91000	0.01924	15.61	15.61	0.00
ANNUAL ALL	00000005				
586860.17000	4160894.91000	0.01747	16.10	16.10	0.00
ANNUAL ALL	00000005				
586880.17000	4160894.91000	0.01774	15.71	15.71	0.00
ANNUAL ALL	00000005				
586940.17000	4160894.91000	0.01883	15.58	15.58	0.00
ANNUAL ALL	00000005				
586960.17000	4160894.91000	0.01925	15.91	15.91	0.00
ANNUAL ALL	00000005				
587020.17000	4160894.91000	0.02025	15.47	15.47	0.00
ANNUAL ALL	00000005				
587040.17000	4160894.91000	0.02054	15.62	15.62	0.00
ANNUAL ALL	00000005				
587060.17000	4160894.91000	0.02079	15.73	15.73	0.00
ANNUAL ALL	00000005				
587080.17000	4160894.91000	0.02096	15.63	15.63	0.00
ANNUAL ALL	00000005				
586920.17000	4160914.91000	0.02009	16.08	16.08	0.00
ANNUAL ALL	00000005				
586940.17000	4160914.91000	0.02042	15.23	15.23	0.00
ANNUAL ALL	00000005				
586960.17000	4160914.91000	0.02090	15.73	15.73	0.00
ANNUAL ALL	00000005				
587020.17000	4160914.91000	0.02200	15.69	15.69	0.00
ANNUAL ALL	00000005				

587040.17000	4160914.91000	0.02228	15.66	15.66	0.00
ANNUAL ALL	00000005				
587060.17000	4160914.91000	0.02251	15.73	15.73	0.00
ANNUAL ALL	00000005				
587080.17000	4160914.91000	0.02266	15.52	15.52	0.00
ANNUAL ALL	00000005				
586900.17000	4160934.91000	0.02142	15.90	15.90	0.00
ANNUAL ALL	00000005				
586920.17000	4160934.91000	0.02192	16.11	16.11	0.00
ANNUAL ALL	00000005				
586940.17000	4160934.91000	0.02229	15.29	15.29	0.00
ANNUAL ALL	00000005				
586960.17000	4160934.91000	0.02278	15.49	15.49	0.00
ANNUAL ALL	00000005				
586980.17000	4160934.91000	0.02331	16.23	16.23	0.00
ANNUAL ALL	00000005				
587020.17000	4160934.91000	0.02396	15.51	15.51	0.00
ANNUAL ALL	00000005				
587040.17000	4160934.91000	0.02426	15.71	15.71	0.00
ANNUAL ALL	00000005				
587060.17000	4160934.91000	0.02447	15.68	15.68	0.00
ANNUAL ALL	00000005				
586900.17000	4160954.91000	0.02348	15.92	15.92	0.00
ANNUAL ALL	00000005				
586920.17000	4160954.91000	0.02403	16.06	16.06	0.00
ANNUAL ALL	00000005				
586940.17000	4160954.91000	0.02461	16.43	16.43	0.00
ANNUAL ALL	00000005				
586960.17000	4160954.91000	0.02504	15.88	15.88	0.00
ANNUAL ALL	00000005				
586980.17000	4160954.91000	0.02554	16.08	16.08	0.00
ANNUAL ALL	00000005				
587020.17000	4160954.91000	0.02626	15.80	15.80	0.00
ANNUAL ALL	00000005				
587040.17000	4160954.91000	0.02657	16.09	16.09	0.00
ANNUAL ALL	00000005				
586960.17000	4160974.91000	0.02770	16.30	16.30	0.00
ANNUAL ALL	00000005				
586980.17000	4160974.91000	0.02817	16.12	16.12	0.00
ANNUAL ALL	00000005				
586820.17000	4161014.91000	0.02938	16.32	16.32	0.00
ANNUAL ALL	00000005				
586840.17000	4161014.91000	0.02991	16.01	16.01	0.00
ANNUAL ALL	00000005				
586860.17000	4161014.91000	0.03061	16.15	16.15	0.00
ANNUAL ALL	00000005				
586880.17000	4161014.91000	0.03145	16.57	16.57	0.00
ANNUAL ALL	00000005				
586900.17000	4161014.91000	0.03229	16.72	16.72	0.00
ANNUAL ALL	00000005				
586920.17000	4161014.91000	0.03314	16.91	16.91	0.00
ANNUAL ALL	00000005				

586940.17000	4161014.91000	0.03389	16.85	16.85	0.00
ANNUAL	ALL 00000005				
586800.17000	4161034.91000	0.03223	16.62	16.62	0.00
ANNUAL	ALL 00000005				
586820.17000	4161034.91000	0.03287	16.27	16.27	0.00
ANNUAL	ALL 00000005				
586840.17000	4161034.91000	0.03369	16.48	16.48	0.00
ANNUAL	ALL 00000005				
586860.17000	4161034.91000	0.03453	16.51	16.51	0.00
ANNUAL	ALL 00000005				
586880.17000	4161034.91000	0.03551	16.78	16.78	0.00
ANNUAL	ALL 00000005				
586900.17000	4161034.91000	0.03654	16.99	16.99	0.00
ANNUAL	ALL 00000005				
586920.17000	4161034.91000	0.03750	17.00	17.00	0.00
ANNUAL	ALL 00000005				
586800.17000	4161054.91000	0.03621	16.62	16.62	0.00
ANNUAL	ALL 00000005				
586820.17000	4161054.91000	0.03720	16.56	16.56	0.00
ANNUAL	ALL 00000005				
586840.17000	4161054.91000	0.03822	16.59	16.59	0.00
ANNUAL	ALL 00000005				
586860.17000	4161054.91000	0.03936	16.81	16.81	0.00
ANNUAL	ALL 00000005				
586880.17000	4161054.91000	0.04058	17.02	17.02	0.00
ANNUAL	ALL 00000005				
586900.17000	4161054.91000	0.04180	17.09	17.09	0.00
ANNUAL	ALL 00000005				
586800.17000	4161074.91000	0.04099	16.68	16.68	0.00
ANNUAL	ALL 00000005				
586820.17000	4161074.91000	0.04236	16.50	16.50	0.00
ANNUAL	ALL 00000005				
586840.17000	4161074.91000	0.04388	16.72	16.72	0.00
ANNUAL	ALL 00000005				
586860.17000	4161074.91000	0.04543	16.98	16.98	0.00
ANNUAL	ALL 00000005				
586880.17000	4161074.91000	0.04694	17.02	17.02	0.00
ANNUAL	ALL 00000005				
586840.17000	4161094.91000	0.05116	16.95	16.95	0.00
ANNUAL	ALL 00000005				
586860.17000	4161094.91000	0.05322	16.96	16.96	0.00
ANNUAL	ALL 00000005				
586267.04000	4160991.81000	0.01124	16.01	16.01	0.00
ANNUAL	ALL 00000005				
586287.04000	4160991.81000	0.01169	16.15	16.15	0.00
ANNUAL	ALL 00000005				
586347.04000	4160991.81000	0.01316	16.47	16.47	0.00
ANNUAL	ALL 00000005				
586367.04000	4160991.81000	0.01369	16.45	16.45	0.00
ANNUAL	ALL 00000005				
586387.04000	4160991.81000	0.01421	15.91	15.91	0.00
ANNUAL	ALL 00000005				

586407.04000	4160991.81000	0.01474	15.19	15.19	0.00
ANNUAL ALL	00000005				
586427.04000	4160991.81000	0.01529	14.68	14.68	0.00
ANNUAL ALL	00000005				
586447.04000	4160991.81000	0.01589	14.62	14.62	0.00
ANNUAL ALL	00000005				
586467.04000	4160991.81000	0.01652	14.83	14.83	0.00
ANNUAL ALL	00000005				
586267.04000	4161011.81000	0.01143	16.17	16.17	0.00
ANNUAL ALL	00000005				
586287.04000	4161011.81000	0.01192	16.56	16.56	0.00
ANNUAL ALL	00000005				
586307.04000	4161011.81000	0.01243	16.80	16.80	0.00
ANNUAL ALL	00000005				
586347.04000	4161011.81000	0.01350	16.73	16.73	0.00
ANNUAL ALL	00000005				
586367.04000	4161011.81000	0.01405	16.10	16.10	0.00
ANNUAL ALL	00000005				
586387.04000	4161011.81000	0.01462	15.57	15.57	0.00
ANNUAL ALL	00000005				
586407.04000	4161011.81000	0.01523	15.23	15.23	0.00
ANNUAL ALL	00000005				
586427.04000	4161011.81000	0.01587	15.03	15.03	0.00
ANNUAL ALL	00000005				
586447.04000	4161011.81000	0.01655	14.95	14.95	0.00
ANNUAL ALL	00000005				
586467.04000	4161011.81000	0.01727	15.12	15.12	0.00
ANNUAL ALL	00000005				
586487.04000	4161011.81000	0.01808	15.81	15.81	0.00
ANNUAL ALL	00000005				
586507.04000	4161011.81000	0.01892	16.51	16.51	0.00
ANNUAL ALL	00000005				
586267.04000	4161031.81000	0.01162	16.56	16.56	0.00
ANNUAL ALL	00000005				
586287.04000	4161031.81000	0.01213	16.77	16.77	0.00
ANNUAL ALL	00000005				
586307.04000	4161031.81000	0.01267	16.91	16.91	0.00
ANNUAL ALL	00000005				
586327.04000	4161031.81000	0.01323	16.85	16.85	0.00
ANNUAL ALL	00000005				
586347.04000	4161031.81000	0.01381	16.70	16.70	0.00
ANNUAL ALL	00000005				
586367.04000	4161031.81000	0.01440	16.04	16.04	0.00
ANNUAL ALL	00000005				
586387.04000	4161031.81000	0.01503	15.67	15.67	0.00
ANNUAL ALL	00000005				
586407.04000	4161031.81000	0.01571	15.48	15.48	0.00
ANNUAL ALL	00000005				
586427.04000	4161031.81000	0.01645	15.66	15.66	0.00
ANNUAL ALL	00000005				
586447.04000	4161031.81000	0.01723	15.77	15.77	0.00
ANNUAL ALL	00000005				

586467.04000	4161031.81000	0.01805	15.67	15.67	0.00
ANNUAL ALL	00000005				
586487.04000	4161031.81000	0.01900	16.15	16.15	0.00
ANNUAL ALL	00000005				
586507.04000	4161031.81000	0.02005	16.80	16.80	0.00
ANNUAL ALL	00000005				
586267.04000	4161051.81000	0.01177	16.72	16.72	0.00
ANNUAL ALL	00000005				
586287.04000	4161051.81000	0.01231	16.86	16.86	0.00
ANNUAL ALL	00000005				
586307.04000	4161051.81000	0.01288	16.81	16.81	0.00
ANNUAL ALL	00000005				
586327.04000	4161051.81000	0.01347	16.64	16.64	0.00
ANNUAL ALL	00000005				
586347.04000	4161051.81000	0.01410	16.78	16.78	0.00
ANNUAL ALL	00000005				
586367.04000	4161051.81000	0.01474	16.14	16.14	0.00
ANNUAL ALL	00000005				
586387.04000	4161051.81000	0.01543	15.93	15.93	0.00
ANNUAL ALL	00000005				
586407.04000	4161051.81000	0.01617	15.79	15.79	0.00
ANNUAL ALL	00000005				
586427.04000	4161051.81000	0.01698	15.87	15.87	0.00
ANNUAL ALL	00000005				
586447.04000	4161051.81000	0.01784	15.93	15.93	0.00
ANNUAL ALL	00000005				
586467.04000	4161051.81000	0.01879	16.00	16.00	0.00
ANNUAL ALL	00000005				
586487.04000	4161051.81000	0.01991	16.52	16.52	0.00
ANNUAL ALL	00000005				
586507.04000	4161051.81000	0.02130	17.35	17.35	0.00
ANNUAL ALL	00000005				
586267.04000	4161071.81000	0.01191	16.92	16.92	0.00
ANNUAL ALL	00000005				
586287.04000	4161071.81000	0.01248	17.01	17.01	0.00
ANNUAL ALL	00000005				
586307.04000	4161071.81000	0.01307	16.88	16.88	0.00
ANNUAL ALL	00000005				
586327.04000	4161071.81000	0.01369	16.62	16.62	0.00
ANNUAL ALL	00000005				
586347.04000	4161071.81000	0.01438	17.08	17.08	0.00
ANNUAL ALL	00000005				
586367.04000	4161071.81000	0.01506	16.42	16.42	0.00
ANNUAL ALL	00000005				
586387.04000	4161071.81000	0.01581	16.26	16.26	0.00
ANNUAL ALL	00000005				
586407.04000	4161071.81000	0.01658	15.77	15.77	0.00
ANNUAL ALL	00000005				
586427.04000	4161071.81000	0.01745	15.73	15.73	0.00
ANNUAL ALL	00000005				
586447.04000	4161071.81000	0.01838	15.60	15.60	0.00
ANNUAL ALL	00000005				

586467.04000	4161071.81000	0.01944	15.78	15.78	0.00
ANNUAL ALL	00000005				
586487.04000	4161071.81000	0.02075	16.64	16.64	0.00
ANNUAL ALL	00000005				
586507.04000	4161071.81000	0.02245	17.72	17.72	0.00
ANNUAL ALL	00000005				
586267.04000	4161091.81000	0.01203	16.97	16.97	0.00
ANNUAL ALL	00000005				
586287.04000	4161091.81000	0.01262	17.01	17.01	0.00
ANNUAL ALL	00000005				
586307.04000	4161091.81000	0.01324	17.01	17.01	0.00
ANNUAL ALL	00000005				
586327.04000	4161091.81000	0.01392	17.23	17.23	0.00
ANNUAL ALL	00000005				
586347.04000	4161091.81000	0.01463	17.21	17.21	0.00
ANNUAL ALL	00000005				
586367.04000	4161091.81000	0.01539	17.32	17.32	0.00
ANNUAL ALL	00000005				
586387.04000	4161091.81000	0.01618	16.93	16.93	0.00
ANNUAL ALL	00000005				
586407.04000	4161091.81000	0.01701	16.31	16.31	0.00
ANNUAL ALL	00000005				
586427.04000	4161091.81000	0.01790	15.81	15.81	0.00
ANNUAL ALL	00000005				
586447.04000	4161091.81000	0.01891	15.69	15.69	0.00
ANNUAL ALL	00000005				
586467.04000	4161091.81000	0.02007	15.93	15.93	0.00
ANNUAL ALL	00000005				
586487.04000	4161091.81000	0.02152	16.96	16.96	0.00
ANNUAL ALL	00000005				
586507.04000	4161091.81000	0.02336	17.54	17.54	0.00
ANNUAL ALL	00000005				
586527.04000	4161091.81000	0.02638	17.45	17.45	0.00
ANNUAL ALL	00000005				
586267.04000	4161111.81000	0.01211	16.88	16.88	0.00
ANNUAL ALL	00000005				
586287.04000	4161111.81000	0.01272	16.74	16.74	0.00
ANNUAL ALL	00000005				
586307.04000	4161111.81000	0.01339	17.27	17.27	0.00
ANNUAL ALL	00000005				
586327.04000	4161111.81000	0.01410	17.45	17.45	0.00
ANNUAL ALL	00000005				
586347.04000	4161111.81000	0.01484	17.20	17.20	0.00
ANNUAL ALL	00000005				
586367.04000	4161111.81000	0.01564	17.32	17.32	0.00
ANNUAL ALL	00000005				
586387.04000	4161111.81000	0.01649	17.22	17.22	0.00
ANNUAL ALL	00000005				
586407.04000	4161111.81000	0.01744	17.58	17.58	0.00
ANNUAL ALL	00000005				
586427.04000	4161111.81000	0.01843	17.25	17.25	0.00
ANNUAL ALL	00000005				

586447.04000	4161111.81000	0.01949	16.79	16.79	0.00
ANNUAL ALL	00000005				
586467.04000	4161111.81000	0.02065	16.13	16.13	0.00
ANNUAL ALL	00000005				
586487.04000	4161111.81000	0.02218	17.16	17.16	0.00
ANNUAL ALL	00000005				
586507.04000	4161111.81000	0.02405	17.76	17.76	0.00
ANNUAL ALL	00000005				
586267.04000	4161131.81000	0.01217	16.70	16.70	0.00
ANNUAL ALL	00000005				
586287.04000	4161131.81000	0.01280	16.52	16.52	0.00
ANNUAL ALL	00000005				
586307.04000	4161131.81000	0.01348	16.56	16.56	0.00
ANNUAL ALL	00000005				
586327.04000	4161131.81000	0.01424	17.35	17.35	0.00
ANNUAL ALL	00000005				
586347.04000	4161131.81000	0.01503	17.39	17.39	0.00
ANNUAL ALL	00000005				
586367.04000	4161131.81000	0.01588	17.61	17.61	0.00
ANNUAL ALL	00000005				
586387.04000	4161131.81000	0.01679	17.70	17.70	0.00
ANNUAL ALL	00000005				
586407.04000	4161131.81000	0.01775	17.44	17.44	0.00
ANNUAL ALL	00000005				
586427.04000	4161131.81000	0.01885	17.93	17.93	0.00
ANNUAL ALL	00000005				
586447.04000	4161131.81000	0.02002	17.81	17.81	0.00
ANNUAL ALL	00000005				
586467.04000	4161131.81000	0.02131	17.58	17.58	0.00
ANNUAL ALL	00000005				
586487.04000	4161131.81000	0.02282	17.78	17.78	0.00
ANNUAL ALL	00000005				
586267.04000	4161151.81000	0.01221	16.63	16.63	0.00
ANNUAL ALL	00000005				
586287.04000	4161151.81000	0.01287	16.50	16.50	0.00
ANNUAL ALL	00000005				
586307.04000	4161151.81000	0.01357	16.51	17.42	0.00
ANNUAL ALL	00000005				
586327.04000	4161151.81000	0.01438	17.65	17.65	0.00
ANNUAL ALL	00000005				
586347.04000	4161151.81000	0.01520	17.85	17.85	0.00
ANNUAL ALL	00000005				
586367.04000	4161151.81000	0.01608	17.75	17.75	0.00
ANNUAL ALL	00000005				
586387.04000	4161151.81000	0.01702	17.66	17.66	0.00
ANNUAL ALL	00000005				
586407.04000	4161151.81000	0.01807	17.98	17.98	0.00
ANNUAL ALL	00000005				
586427.04000	4161151.81000	0.01920	18.04	18.04	0.00
ANNUAL ALL	00000005				
586447.04000	4161151.81000	0.02044	18.07	18.07	0.00
ANNUAL ALL	00000005				

586467.04000	4161151.81000	0.02182	18.14	18.14	0.00
ANNUAL ALL	00000005				
586267.04000	4161171.81000	0.01225	17.05	17.05	0.00
ANNUAL ALL	00000005				
586287.04000	4161171.81000	0.01293	17.24	17.24	0.00
ANNUAL ALL	00000005				
586307.04000	4161171.81000	0.01368	17.57	17.57	0.00
ANNUAL ALL	00000005				
586327.04000	4161171.81000	0.01447	17.75	17.75	0.00
ANNUAL ALL	00000005				
586347.04000	4161171.81000	0.01532	17.74	17.74	0.00
ANNUAL ALL	00000005				
586367.04000	4161171.81000	0.01623	17.64	17.64	0.00
ANNUAL ALL	00000005				
586387.04000	4161171.81000	0.01724	17.95	17.95	0.00
ANNUAL ALL	00000005				
586407.04000	4161171.81000	0.01831	17.72	17.72	0.00
ANNUAL ALL	00000005				
586427.04000	4161171.81000	0.01950	17.96	17.96	0.00
ANNUAL ALL	00000005				
586447.04000	4161171.81000	0.02079	17.97	17.97	0.00
ANNUAL ALL	00000005				
586287.04000	4161191.81000	0.01295	17.30	17.30	0.00
ANNUAL ALL	00000005				
586307.04000	4161191.81000	0.01371	17.60	17.60	0.00
ANNUAL ALL	00000005				
586327.04000	4161191.81000	0.01453	17.59	17.59	0.00
ANNUAL ALL	00000005				
586347.04000	4161191.81000	0.01540	17.46	17.46	0.00
ANNUAL ALL	00000005				
586367.04000	4161191.81000	0.01638	17.99	17.99	0.00
ANNUAL ALL	00000005				
586387.04000	4161191.81000	0.01742	18.22	18.22	0.00
ANNUAL ALL	00000005				
586407.04000	4161191.81000	0.01854	18.12	18.12	0.00
ANNUAL ALL	00000005				
586527.04000	4161191.81000	0.02850	17.82	17.82	0.00
ANNUAL ALL	00000005				
586547.04000	4161191.81000	0.03192	17.98	17.98	0.00
ANNUAL ALL	00000005				
586287.04000	4161211.81000	0.01294	17.31	17.31	0.00
ANNUAL ALL	00000005				
586307.04000	4161211.81000	0.01371	17.40	17.40	0.00
ANNUAL ALL	00000005				
586327.04000	4161211.81000	0.01455	17.34	17.34	0.00
ANNUAL ALL	00000005				
586347.04000	4161211.81000	0.01546	17.56	17.56	0.00
ANNUAL ALL	00000005				
586367.04000	4161211.81000	0.01646	17.86	17.86	0.00
ANNUAL ALL	00000005				
586387.04000	4161211.81000	0.01756	18.37	18.37	0.00
ANNUAL ALL	00000005				

586487.04000	4161211.81000	0.02468	17.87	17.87	0.00
ANNUAL ALL	00000005				
586507.04000	4161211.81000	0.02670	18.14	18.14	0.00
ANNUAL ALL	00000005				
586527.04000	4161211.81000	0.02903	18.01	18.01	0.00
ANNUAL ALL	00000005				
586547.04000	4161211.81000	0.03220	18.30	18.30	0.00
ANNUAL ALL	00000005				
586307.04000	4161231.81000	0.01368	17.19	17.19	0.00
ANNUAL ALL	00000005				
586327.04000	4161231.81000	0.01455	17.45	17.45	0.00
ANNUAL ALL	00000005				
586347.04000	4161231.81000	0.01549	17.58	17.58	0.00
ANNUAL ALL	00000005				
586367.04000	4161231.81000	0.01654	18.30	18.30	0.00
ANNUAL ALL	00000005				
586467.04000	4161231.81000	0.02326	18.07	18.07	0.00
ANNUAL ALL	00000005				
586487.04000	4161231.81000	0.02509	18.19	18.19	0.00
ANNUAL ALL	00000005				
586507.04000	4161231.81000	0.02715	18.23	18.23	0.00
ANNUAL ALL	00000005				
586527.04000	4161231.81000	0.02958	18.36	18.36	0.00
ANNUAL ALL	00000005				
586547.04000	4161231.81000	0.03263	18.45	18.45	0.00
ANNUAL ALL	00000005				
586567.04000	4161231.81000	0.03718	18.67	18.67	0.00
ANNUAL ALL	00000005				
586307.04000	4161251.81000	0.01364	17.32	17.32	0.00
ANNUAL ALL	00000005				
586327.04000	4161251.81000	0.01452	17.45	17.45	0.00
ANNUAL ALL	00000005				
586347.04000	4161251.81000	0.01547	17.57	17.57	0.00
ANNUAL ALL	00000005				
586367.04000	4161251.81000	0.01655	18.15	18.15	0.00
ANNUAL ALL	00000005				
586447.04000	4161251.81000	0.02185	18.18	18.18	0.00
ANNUAL ALL	00000005				
586467.04000	4161251.81000	0.02355	18.33	18.33	0.00
ANNUAL ALL	00000005				
586487.04000	4161251.81000	0.02545	18.35	18.35	0.00
ANNUAL ALL	00000005				
586507.04000	4161251.81000	0.02759	18.40	18.40	0.00
ANNUAL ALL	00000005				
586527.04000	4161251.81000	0.03009	18.52	18.52	0.00
ANNUAL ALL	00000005				
586547.04000	4161251.81000	0.03309	18.50	18.50	0.00
ANNUAL ALL	00000005				
586567.04000	4161251.81000	0.03764	18.95	18.95	0.00
ANNUAL ALL	00000005				
586307.04000	4161271.81000	0.01356	17.51	17.51	0.00
ANNUAL ALL	00000005				

586327.04000	4161271.81000	0.01446	17.60	17.60	0.00
ANNUAL ALL	00000005				
586347.04000	4161271.81000	0.01544	17.73	17.73	0.00
ANNUAL ALL	00000005				
586427.04000	4161271.81000	0.02044	18.36	18.36	0.00
ANNUAL ALL	00000005				
586447.04000	4161271.81000	0.02204	18.58	18.58	0.00
ANNUAL ALL	00000005				
586467.04000	4161271.81000	0.02380	18.55	18.55	0.00
ANNUAL ALL	00000005				
586487.04000	4161271.81000	0.02576	18.52	18.52	0.00
ANNUAL ALL	00000005				
586507.04000	4161271.81000	0.02800	18.60	18.60	0.00
ANNUAL ALL	00000005				
586527.04000	4161271.81000	0.03056	18.60	18.60	0.00
ANNUAL ALL	00000005				
586547.04000	4161271.81000	0.03361	18.57	18.57	0.00
ANNUAL ALL	00000005				
586567.04000	4161271.81000	0.03779	18.71	18.71	0.00
ANNUAL ALL	00000005				
586327.04000	4161291.81000	0.01438	17.97	17.97	0.00
ANNUAL ALL	00000005				
586347.04000	4161291.81000	0.01538	18.18	18.18	0.00
ANNUAL ALL	00000005				
586407.04000	4161291.81000	0.01901	18.34	18.34	0.00
ANNUAL ALL	00000005				
586427.04000	4161291.81000	0.02052	18.80	18.80	0.00
ANNUAL ALL	00000005				
586447.04000	4161291.81000	0.02216	18.74	18.74	0.00
ANNUAL ALL	00000005				
586467.04000	4161291.81000	0.02398	18.63	18.63	0.00
ANNUAL ALL	00000005				
586487.04000	4161291.81000	0.02604	18.70	18.70	0.00
ANNUAL ALL	00000005				
586507.04000	4161291.81000	0.02838	18.88	18.88	0.00
ANNUAL ALL	00000005				
586527.04000	4161291.81000	0.03105	18.85	18.85	0.00
ANNUAL ALL	00000005				
586547.04000	4161291.81000	0.03419	18.85	18.85	0.00
ANNUAL ALL	00000005				
586567.04000	4161291.81000	0.03819	18.93	18.93	0.00
ANNUAL ALL	00000005				
586587.04000	4161291.81000	0.04381	19.03	19.03	0.00
ANNUAL ALL	00000005				
586327.04000	4161311.81000	0.01426	18.28	18.28	0.00
ANNUAL ALL	00000005				
586387.04000	4161311.81000	0.01760	18.36	18.36	0.00
ANNUAL ALL	00000005				
586407.04000	4161311.81000	0.01899	18.67	18.67	0.00
ANNUAL ALL	00000005				
586427.04000	4161311.81000	0.02051	18.78	18.78	0.00
ANNUAL ALL	00000005				

586447.04000	4161311.81000	0.02220	18.70	18.70	0.00
ANNUAL ALL	00000005				
586467.04000	4161311.81000	0.02410	18.77	18.77	0.00
ANNUAL ALL	00000005				
586487.04000	4161311.81000	0.02625	18.89	18.89	0.00
ANNUAL ALL	00000005				
586507.04000	4161311.81000	0.02869	18.97	18.97	0.00
ANNUAL ALL	00000005				
586527.04000	4161311.81000	0.03148	19.00	19.00	0.00
ANNUAL ALL	00000005				
586547.04000	4161311.81000	0.03474	18.98	18.98	0.00
ANNUAL ALL	00000005				
586567.04000	4161311.81000	0.03875	19.01	19.01	0.00
ANNUAL ALL	00000005				
586587.04000	4161311.81000	0.04441	19.00	19.00	0.00
ANNUAL ALL	00000005				
586367.04000	4161331.81000	0.01625	18.58	18.58	0.00
ANNUAL ALL	00000005				
586387.04000	4161331.81000	0.01751	18.97	18.97	0.00
ANNUAL ALL	00000005				
586407.04000	4161331.81000	0.01889	18.77	18.77	0.00
ANNUAL ALL	00000005				
586427.04000	4161331.81000	0.02044	18.69	18.69	0.00
ANNUAL ALL	00000005				
586447.04000	4161331.81000	0.02220	18.92	18.92	0.00
ANNUAL ALL	00000005				
586467.04000	4161331.81000	0.02417	19.07	19.07	0.00
ANNUAL ALL	00000005				
586487.04000	4161331.81000	0.02639	19.06	19.06	0.00
ANNUAL ALL	00000005				
586507.04000	4161331.81000	0.02894	19.18	19.18	0.00
ANNUAL ALL	00000005				
586527.04000	4161331.81000	0.03184	19.11	19.11	0.00
ANNUAL ALL	00000005				
586547.04000	4161331.81000	0.03526	19.18	19.18	0.00
ANNUAL ALL	00000005				
586567.04000	4161331.81000	0.03942	19.25	19.25	0.00
ANNUAL ALL	00000005				
586587.04000	4161331.81000	0.04517	19.31	19.31	0.00
ANNUAL ALL	00000005				
586347.04000	4161351.81000	0.01496	18.99	18.99	0.00
ANNUAL ALL	00000005				
586367.04000	4161351.81000	0.01608	18.94	18.94	0.00
ANNUAL ALL	00000005				
586387.04000	4161351.81000	0.01734	18.92	18.92	0.00
ANNUAL ALL	00000005				
586407.04000	4161351.81000	0.01874	18.78	18.78	0.00
ANNUAL ALL	00000005				
586427.04000	4161351.81000	0.02034	19.09	19.09	0.00
ANNUAL ALL	00000005				
586447.04000	4161351.81000	0.02214	19.35	19.35	0.00
ANNUAL ALL	00000005				

586467.04000	4161351.81000	0.02416	19.34	19.34	0.00
ANNUAL ALL	00000005				
586487.04000	4161351.81000	0.02647	19.38	19.38	0.00
ANNUAL ALL	00000005				
586507.04000	4161351.81000	0.02909	19.32	19.32	0.00
ANNUAL ALL	00000005				
586527.04000	4161351.81000	0.03214	19.37	19.37	0.00
ANNUAL ALL	00000005				
586547.04000	4161351.81000	0.03572	19.44	19.44	0.00
ANNUAL ALL	00000005				
586567.04000	4161351.81000	0.04005	19.50	19.50	0.00
ANNUAL ALL	00000005				
586587.04000	4161351.81000	0.04578	19.58	19.58	0.00
ANNUAL ALL	00000005				
586367.04000	4161371.81000	0.01586	18.86	18.86	0.00
ANNUAL ALL	00000005				
586387.04000	4161371.81000	0.01712	18.86	18.86	0.00
ANNUAL ALL	00000005				
586407.04000	4161371.81000	0.01853	18.87	18.87	0.00
ANNUAL ALL	00000005				
586427.04000	4161371.81000	0.02017	19.40	19.40	0.00
ANNUAL ALL	00000005				
586447.04000	4161371.81000	0.02199	19.60	19.60	0.00
ANNUAL ALL	00000005				
586467.04000	4161371.81000	0.02407	19.71	19.71	0.00
ANNUAL ALL	00000005				
586487.04000	4161371.81000	0.02642	19.55	19.55	0.00
ANNUAL ALL	00000005				
586507.04000	4161371.81000	0.02913	19.47	19.47	0.00
ANNUAL ALL	00000005				
586527.04000	4161371.81000	0.03231	19.58	19.58	0.00
ANNUAL ALL	00000005				
586547.04000	4161371.81000	0.03603	19.61	19.61	0.00
ANNUAL ALL	00000005				
586567.04000	4161371.81000	0.04053	19.71	19.71	0.00
ANNUAL ALL	00000005				
586587.04000	4161371.81000	0.04631	19.81	19.81	0.00
ANNUAL ALL	00000005				
586367.04000	4161391.81000	0.01561	18.92	18.92	0.00
ANNUAL ALL	00000005				
586387.04000	4161391.81000	0.01686	18.96	18.96	0.00
ANNUAL ALL	00000005				
586407.04000	4161391.81000	0.01828	19.15	19.15	0.00
ANNUAL ALL	00000005				
586427.04000	4161391.81000	0.01990	19.38	19.38	0.00
ANNUAL ALL	00000005				
586447.04000	4161391.81000	0.02175	19.71	19.71	0.00
ANNUAL ALL	00000005				
586467.04000	4161391.81000	0.02385	19.77	19.77	0.00
ANNUAL ALL	00000005				
586487.04000	4161391.81000	0.02624	19.58	19.58	0.00
ANNUAL ALL	00000005				

586507.04000	4161391.81000	0.02905	19.70	19.70	0.00
ANNUAL ALL	00000005				
586527.04000	4161391.81000	0.03232	19.77	19.77	0.00
ANNUAL ALL	00000005				
586547.04000	4161391.81000	0.03619	19.83	19.83	0.00
ANNUAL ALL	00000005				
586567.04000	4161391.81000	0.04084	19.88	19.88	0.00
ANNUAL ALL	00000005				
586208.57000	4160992.06000	0.01002	15.57	15.57	0.00
ANNUAL ALL	00000005				
586228.57000	4160992.06000	0.01042	15.71	15.71	0.00
ANNUAL ALL	00000005				
586248.57000	4160992.06000	0.01084	15.90	15.90	0.00
ANNUAL ALL	00000005				
586208.57000	4161012.06000	0.01014	15.77	15.77	0.00
ANNUAL ALL	00000005				
586228.57000	4161012.06000	0.01056	15.88	15.88	0.00
ANNUAL ALL	00000005				
586248.57000	4161012.06000	0.01101	16.03	16.03	0.00
ANNUAL ALL	00000005				
586208.57000	4161032.06000	0.01025	15.95	15.95	0.00
ANNUAL ALL	00000005				
586228.57000	4161032.06000	0.01069	15.95	15.95	0.00
ANNUAL ALL	00000005				
586248.57000	4161032.06000	0.01116	16.17	16.17	0.00
ANNUAL ALL	00000005				
586228.57000	4161052.06000	0.01081	16.31	16.31	0.00
ANNUAL ALL	00000005				
586248.57000	4161052.06000	0.01130	16.47	16.47	0.00
ANNUAL ALL	00000005				
586228.57000	4161072.06000	0.01091	16.57	16.57	0.00
ANNUAL ALL	00000005				
586248.57000	4161072.06000	0.01142	16.75	16.75	0.00
ANNUAL ALL	00000005				
586228.57000	4161092.06000	0.01098	16.67	16.67	0.00
ANNUAL ALL	00000005				
586248.57000	4161092.06000	0.01151	16.85	16.85	0.00
ANNUAL ALL	00000005				
586248.57000	4161112.06000	0.01158	16.87	16.87	0.00
ANNUAL ALL	00000005				
586248.57000	4161132.06000	0.01163	16.82	16.82	0.00
ANNUAL ALL	00000005				
586135.10000	4160812.45000	0.00761	14.21	14.21	0.00
ANNUAL ALL	00000005				
586135.10000	4160832.45000	0.00777	14.24	14.24	0.00
ANNUAL ALL	00000005				
586135.10000	4160852.45000	0.00791	14.23	14.23	0.00
ANNUAL ALL	00000005				
586135.10000	4160872.45000	0.00806	14.65	14.65	0.00
ANNUAL ALL	00000005				
586393.03000	4160750.97000	0.00897	13.86	13.86	0.00
ANNUAL ALL	00000005				

586413.03000	4160750.97000	0.00908	13.79	13.79	0.00
ANNUAL ALL	00000005				
586433.03000	4160750.97000	0.00918	13.55	13.55	0.00
ANNUAL ALL	00000005				
586313.03000	4160770.97000	0.00877	14.21	14.21	0.00
ANNUAL ALL	00000005				
586333.03000	4160770.97000	0.00892	14.22	14.22	0.00
ANNUAL ALL	00000005				
586353.03000	4160770.97000	0.00907	14.03	14.03	0.00
ANNUAL ALL	00000005				
586373.03000	4160770.97000	0.00922	14.01	14.01	0.00
ANNUAL ALL	00000005				
586393.03000	4160770.97000	0.00935	13.97	13.97	0.00
ANNUAL ALL	00000005				
586413.03000	4160770.97000	0.00949	14.15	14.15	0.00
ANNUAL ALL	00000005				
586433.03000	4160770.97000	0.00961	13.98	13.98	0.00
ANNUAL ALL	00000005				
586233.03000	4160790.97000	0.00836	14.51	14.51	0.00
ANNUAL ALL	00000005				
586253.03000	4160790.97000	0.00855	14.60	14.60	0.00
ANNUAL ALL	00000005				
586273.03000	4160790.97000	0.00872	14.24	14.24	0.00
ANNUAL ALL	00000005				
586293.03000	4160790.97000	0.00891	14.51	14.51	0.00
ANNUAL ALL	00000005				
586313.03000	4160790.97000	0.00909	14.37	14.37	0.00
ANNUAL ALL	00000005				
586333.03000	4160790.97000	0.00927	14.60	14.60	0.00
ANNUAL ALL	00000005				
586353.03000	4160790.97000	0.00944	14.30	14.30	0.00
ANNUAL ALL	00000005				
586373.03000	4160790.97000	0.00961	14.47	14.47	0.00
ANNUAL ALL	00000005				
586393.03000	4160790.97000	0.00977	14.52	14.52	0.00
ANNUAL ALL	00000005				
586413.03000	4160790.97000	0.00992	14.32	14.32	0.00
ANNUAL ALL	00000005				
586433.03000	4160790.97000	0.01005	13.91	13.91	0.00
ANNUAL ALL	00000005				
586153.03000	4160810.97000	0.00778	14.25	14.25	0.00
ANNUAL ALL	00000005				
586173.03000	4160810.97000	0.00798	14.38	14.38	0.00
ANNUAL ALL	00000005				
586193.03000	4160810.97000	0.00819	14.46	14.46	0.00
ANNUAL ALL	00000005				
586213.03000	4160810.97000	0.00839	14.51	14.51	0.00
ANNUAL ALL	00000005				
586233.03000	4160810.97000	0.00860	14.63	14.63	0.00
ANNUAL ALL	00000005				
586253.03000	4160810.97000	0.00880	14.40	14.40	0.00
ANNUAL ALL	00000005				

586273.03000	4160810.97000	0.00900	14.34	14.34	0.00
ANNUAL ALL	00000005				
586293.03000	4160810.97000	0.00921	14.55	14.55	0.00
ANNUAL ALL	00000005				
586313.03000	4160810.97000	0.00942	14.73	14.73	0.00
ANNUAL ALL	00000005				
586333.03000	4160810.97000	0.00963	15.00	15.00	0.00
ANNUAL ALL	00000005				
586353.03000	4160810.97000	0.00981	14.55	14.55	0.00
ANNUAL ALL	00000005				
586373.03000	4160810.97000	0.01000	14.52	14.52	0.00
ANNUAL ALL	00000005				
586393.03000	4160810.97000	0.01019	14.51	14.51	0.00
ANNUAL ALL	00000005				
586413.03000	4160810.97000	0.01036	14.40	14.40	0.00
ANNUAL ALL	00000005				
586433.03000	4160810.97000	0.01053	14.27	14.27	0.00
ANNUAL ALL	00000005				
586153.03000	4160830.97000	0.00795	14.29	14.29	0.00
ANNUAL ALL	00000005				
586173.03000	4160830.97000	0.00817	14.38	14.38	0.00
ANNUAL ALL	00000005				
586193.03000	4160830.97000	0.00839	14.49	14.49	0.00
ANNUAL ALL	00000005				
586213.03000	4160830.97000	0.00861	14.58	14.58	0.00
ANNUAL ALL	00000005				
586233.03000	4160830.97000	0.00884	14.77	14.77	0.00
ANNUAL ALL	00000005				
586253.03000	4160830.97000	0.00906	14.61	14.61	0.00
ANNUAL ALL	00000005				
586273.03000	4160830.97000	0.00929	14.71	14.71	0.00
ANNUAL ALL	00000005				
586293.03000	4160830.97000	0.00952	14.81	14.81	0.00
ANNUAL ALL	00000005				
586313.03000	4160830.97000	0.00975	14.96	14.96	0.00
ANNUAL ALL	00000005				
586333.03000	4160830.97000	0.00998	14.96	14.96	0.00
ANNUAL ALL	00000005				
586353.03000	4160830.97000	0.01019	14.77	14.77	0.00
ANNUAL ALL	00000005				
586373.03000	4160830.97000	0.01041	14.75	14.75	0.00
ANNUAL ALL	00000005				
586393.03000	4160830.97000	0.01062	14.70	14.70	0.00
ANNUAL ALL	00000005				
586413.03000	4160830.97000	0.01082	14.53	14.53	0.00
ANNUAL ALL	00000005				
586433.03000	4160830.97000	0.01102	14.47	14.47	0.00
ANNUAL ALL	00000005				
586453.03000	4160830.97000	0.01120	14.37	14.37	0.00
ANNUAL ALL	00000005				
586153.03000	4160850.97000	0.00811	14.25	14.25	0.00
ANNUAL ALL	00000005				

586173.03000	4160850.97000	0.00834	14.34	14.34	0.00
ANNUAL ALL	00000005				
586193.03000	4160850.97000	0.00859	14.68	14.68	0.00
ANNUAL ALL	00000005				
586213.03000	4160850.97000	0.00883	14.87	14.87	0.00
ANNUAL ALL	00000005				
586233.03000	4160850.97000	0.00908	14.93	14.93	0.00
ANNUAL ALL	00000005				
586253.03000	4160850.97000	0.00933	14.94	14.94	0.00
ANNUAL ALL	00000005				
586273.03000	4160850.97000	0.00957	14.85	14.85	0.00
ANNUAL ALL	00000005				
586293.03000	4160850.97000	0.00982	14.82	14.82	0.00
ANNUAL ALL	00000005				
586313.03000	4160850.97000	0.01009	15.19	15.19	0.00
ANNUAL ALL	00000005				
586333.03000	4160850.97000	0.01034	15.17	15.17	0.00
ANNUAL ALL	00000005				
586353.03000	4160850.97000	0.01059	15.13	15.13	0.00
ANNUAL ALL	00000005				
586373.03000	4160850.97000	0.01083	14.91	14.91	0.00
ANNUAL ALL	00000005				
586393.03000	4160850.97000	0.01107	14.91	14.91	0.00
ANNUAL ALL	00000005				
586413.03000	4160850.97000	0.01131	15.07	15.07	0.00
ANNUAL ALL	00000005				
586433.03000	4160850.97000	0.01153	14.74	14.74	0.00
ANNUAL ALL	00000005				
586453.03000	4160850.97000	0.01176	14.88	14.88	0.00
ANNUAL ALL	00000005				
586153.03000	4160870.97000	0.00827	14.73	14.73	0.00
ANNUAL ALL	00000005				
586173.03000	4160870.97000	0.00852	14.84	14.84	0.00
ANNUAL ALL	00000005				
586193.03000	4160870.97000	0.00878	14.93	14.93	0.00
ANNUAL ALL	00000005				
586213.03000	4160870.97000	0.00904	14.99	14.99	0.00
ANNUAL ALL	00000005				
586233.03000	4160870.97000	0.00931	15.12	15.12	0.00
ANNUAL ALL	00000005				
586253.03000	4160870.97000	0.00958	15.22	15.22	0.00
ANNUAL ALL	00000005				
586273.03000	4160870.97000	0.00986	15.12	15.12	0.00
ANNUAL ALL	00000005				
586293.03000	4160870.97000	0.01013	15.01	15.01	0.00
ANNUAL ALL	00000005				
586313.03000	4160870.97000	0.01042	15.24	15.24	0.00
ANNUAL ALL	00000005				
586333.03000	4160870.97000	0.01070	15.24	15.24	0.00
ANNUAL ALL	00000005				
586353.03000	4160870.97000	0.01098	15.34	15.34	0.00
ANNUAL ALL	00000005				

586373.03000	4160870.97000	0.01125	15.05	15.05	0.00
ANNUAL ALL	00000005				
586393.03000	4160870.97000	0.01154	15.31	15.31	0.00
ANNUAL ALL	00000005				
586413.03000	4160870.97000	0.01181	15.26	15.26	0.00
ANNUAL ALL	00000005				
586433.03000	4160870.97000	0.01206	15.00	15.00	0.00
ANNUAL ALL	00000005				
586453.03000	4160870.97000	0.01236	15.82	16.39	0.00
ANNUAL ALL	00000005				
586473.03000	4160870.97000	0.01258	15.11	18.04	0.00
ANNUAL ALL	00000005				
586153.03000	4160890.97000	0.00842	14.93	14.93	0.00
ANNUAL ALL	00000005				
586173.03000	4160890.97000	0.00869	14.94	14.94	0.00
ANNUAL ALL	00000005				
586193.03000	4160890.97000	0.00896	15.12	15.12	0.00
ANNUAL ALL	00000005				
586213.03000	4160890.97000	0.00925	15.23	15.23	0.00
ANNUAL ALL	00000005				
586233.03000	4160890.97000	0.00954	15.30	15.30	0.00
ANNUAL ALL	00000005				
586253.03000	4160890.97000	0.00983	15.37	15.37	0.00
ANNUAL ALL	00000005				
586273.03000	4160890.97000	0.01013	15.34	15.34	0.00
ANNUAL ALL	00000005				
586293.03000	4160890.97000	0.01044	15.32	15.32	0.00
ANNUAL ALL	00000005				
586313.03000	4160890.97000	0.01074	15.32	15.32	0.00
ANNUAL ALL	00000005				
586333.03000	4160890.97000	0.01106	15.42	15.42	0.00
ANNUAL ALL	00000005				
586353.03000	4160890.97000	0.01137	15.37	15.37	0.00
ANNUAL ALL	00000005				
586373.03000	4160890.97000	0.01168	15.30	15.30	0.00
ANNUAL ALL	00000005				
586393.03000	4160890.97000	0.01199	15.24	15.24	0.00
ANNUAL ALL	00000005				
586413.03000	4160890.97000	0.01230	15.14	17.90	0.00
ANNUAL ALL	00000005				
586433.03000	4160890.97000	0.01266	16.26	17.97	0.00
ANNUAL ALL	00000005				
586453.03000	4160890.97000	0.01301	17.48	18.04	0.00
ANNUAL ALL	00000005				
586473.03000	4160890.97000	0.01325	16.02	18.04	0.00
ANNUAL ALL	00000005				
586153.03000	4160910.97000	0.00855	14.95	14.95	0.00
ANNUAL ALL	00000005				
586173.03000	4160910.97000	0.00884	15.05	15.05	0.00
ANNUAL ALL	00000005				
586193.03000	4160910.97000	0.00914	15.32	15.32	0.00
ANNUAL ALL	00000005				

586213.03000	4160910.97000	0.00944	15.44	15.44	0.00
ANNUAL ALL	00000005				
586233.03000	4160910.97000	0.00975	15.42	15.42	0.00
ANNUAL ALL	00000005				
586253.03000	4160910.97000	0.01007	15.43	15.43	0.00
ANNUAL ALL	00000005				
586273.03000	4160910.97000	0.01040	15.54	15.54	0.00
ANNUAL ALL	00000005				
586293.03000	4160910.97000	0.01073	15.45	15.45	0.00
ANNUAL ALL	00000005				
586313.03000	4160910.97000	0.01107	15.36	15.36	0.00
ANNUAL ALL	00000005				
586333.03000	4160910.97000	0.01142	15.44	15.44	0.00
ANNUAL ALL	00000005				
586353.03000	4160910.97000	0.01176	15.45	15.45	0.00
ANNUAL ALL	00000005				
586373.03000	4160910.97000	0.01213	15.85	15.85	0.00
ANNUAL ALL	00000005				
586393.03000	4160910.97000	0.01250	16.11	16.11	0.00
ANNUAL ALL	00000005				
586413.03000	4160910.97000	0.01289	17.00	17.00	0.00
ANNUAL ALL	00000005				
586433.03000	4160910.97000	0.01326	17.29	17.90	0.00
ANNUAL ALL	00000005				
586453.03000	4160910.97000	0.01361	17.17	18.05	0.00
ANNUAL ALL	00000005				
586473.03000	4160910.97000	0.01396	17.20	17.20	0.00
ANNUAL ALL	00000005				
586173.03000	4160930.97000	0.00898	15.00	15.00	0.00
ANNUAL ALL	00000005				
586193.03000	4160930.97000	0.00930	15.17	15.17	0.00
ANNUAL ALL	00000005				
586213.03000	4160930.97000	0.00962	15.15	15.15	0.00
ANNUAL ALL	00000005				
586233.03000	4160930.97000	0.00995	15.28	15.28	0.00
ANNUAL ALL	00000005				
586253.03000	4160930.97000	0.01030	15.43	15.43	0.00
ANNUAL ALL	00000005				
586273.03000	4160930.97000	0.01066	15.61	15.61	0.00
ANNUAL ALL	00000005				
586353.03000	4160930.97000	0.01217	15.90	15.90	0.00
ANNUAL ALL	00000005				
586373.03000	4160930.97000	0.01258	16.31	16.31	0.00
ANNUAL ALL	00000005				
586393.03000	4160930.97000	0.01298	16.36	16.36	0.00
ANNUAL ALL	00000005				
586413.03000	4160930.97000	0.01338	16.29	16.29	0.00
ANNUAL ALL	00000005				
586433.03000	4160930.97000	0.01373	15.17	17.97	0.00
ANNUAL ALL	00000005				
586453.03000	4160930.97000	0.01412	14.97	18.05	0.00
ANNUAL ALL	00000005				

586473.03000	4160930.97000	0.01460	16.43	16.43	0.00
ANNUAL ALL	00000005				
586173.03000	4160950.97000	0.00911	15.04	15.04	0.00
ANNUAL ALL	00000005				
586193.03000	4160950.97000	0.00945	15.15	15.15	0.00
ANNUAL ALL	00000005				
586213.03000	4160950.97000	0.00979	15.23	15.23	0.00
ANNUAL ALL	00000005				
586233.03000	4160950.97000	0.01015	15.44	15.44	0.00
ANNUAL ALL	00000005				
586253.03000	4160950.97000	0.01052	15.62	15.62	0.00
ANNUAL ALL	00000005				
586273.03000	4160950.97000	0.01091	15.79	15.79	0.00
ANNUAL ALL	00000005				
586353.03000	4160950.97000	0.01256	16.08	16.08	0.00
ANNUAL ALL	00000005				
586373.03000	4160950.97000	0.01301	16.35	16.35	0.00
ANNUAL ALL	00000005				
586393.03000	4160950.97000	0.01345	16.24	16.24	0.00
ANNUAL ALL	00000005				
586413.03000	4160950.97000	0.01386	15.21	15.21	0.00
ANNUAL ALL	00000005				
586433.03000	4160950.97000	0.01428	14.74	14.74	0.00
ANNUAL ALL	00000005				
586453.03000	4160950.97000	0.01475	14.85	14.85	0.00
ANNUAL ALL	00000005				
586473.03000	4160950.97000	0.01521	14.87	14.87	0.00
ANNUAL ALL	00000005				
586193.03000	4160970.97000	0.00958	15.31	15.31	0.00
ANNUAL ALL	00000005				
586213.03000	4160970.97000	0.00995	15.41	15.41	0.00
ANNUAL ALL	00000005				
586233.03000	4160970.97000	0.01033	15.59	15.59	0.00
ANNUAL ALL	00000005				
586253.03000	4160970.97000	0.01073	15.77	15.77	0.00
ANNUAL ALL	00000005				
586273.03000	4160970.97000	0.01114	15.92	15.92	0.00
ANNUAL ALL	00000005				
586293.03000	4160970.97000	0.01157	16.12	16.12	0.00
ANNUAL ALL	00000005				
586353.03000	4160970.97000	0.01294	16.30	16.30	0.00
ANNUAL ALL	00000005				
586373.03000	4160970.97000	0.01343	16.43	16.43	0.00
ANNUAL ALL	00000005				
586393.03000	4160970.97000	0.01391	16.00	16.00	0.00
ANNUAL ALL	00000005				
586413.03000	4160970.97000	0.01437	15.04	15.04	0.00
ANNUAL ALL	00000005				
586433.03000	4160970.97000	0.01485	14.55	14.55	0.00
ANNUAL ALL	00000005				
586453.03000	4160970.97000	0.01539	14.67	14.67	0.00
ANNUAL ALL	00000005				

586473.03000	4160970.97000	0.01593	14.82	14.82	0.00
ANNUAL ALL	00000005				
586187.00000	4160990.14000	0.00959	15.44	15.44	0.00
ANNUAL ALL	00000005				
586493.03000	4160990.97000	0.01739	15.92	15.92	0.00
ANNUAL ALL	00000005				
586880.94000	4160951.16000	0.02261	15.98	15.98	0.00
ANNUAL ALL	00000005				
586860.94000	4160971.16000	0.02435	16.01	16.01	0.00
ANNUAL ALL	00000005				
586880.94000	4160971.16000	0.02487	16.03	16.03	0.00
ANNUAL ALL	00000005				
586900.94000	4160971.16000	0.02555	16.70	16.70	0.00
ANNUAL ALL	00000005				
586920.94000	4160971.16000	0.02615	16.77	16.77	0.00
ANNUAL ALL	00000005				
586940.94000	4160971.16000	0.02672	16.72	16.72	0.00
ANNUAL ALL	00000005				
586840.94000	4160991.16000	0.02630	15.63	15.63	0.00
ANNUAL ALL	00000005				
586860.94000	4160991.16000	0.02692	16.03	16.03	0.00
ANNUAL ALL	00000005				
586880.94000	4160991.16000	0.02758	16.31	16.31	0.00
ANNUAL ALL	00000005				
586900.94000	4160991.16000	0.02832	16.76	16.76	0.00
ANNUAL ALL	00000005				
586920.94000	4160991.16000	0.02901	16.81	16.81	0.00
ANNUAL ALL	00000005				
586940.94000	4160991.16000	0.02966	16.77	16.77	0.00
ANNUAL ALL	00000005				
587317.56000	4161446.56000	0.04808	19.44	192.17	0.00
ANNUAL ALL	00000005				
587334.99000	4161430.52000	0.04677	18.77	192.17	0.00
ANNUAL ALL	00000005				
587346.61000	4161439.81000	0.04352	19.44	192.17	0.00
ANNUAL ALL	00000005				
587339.64000	4161404.03000	0.04894	18.67	192.17	0.00
ANNUAL ALL	00000005				
587354.98000	4161418.90000	0.04438	19.10	192.17	0.00
ANNUAL ALL	00000005				
587367.06000	4161428.66000	0.04142	20.02	192.17	0.00
ANNUAL ALL	00000005				
587353.58000	4161390.55000	0.04726	18.77	192.17	0.00
ANNUAL ALL	00000005				
587364.74000	4161404.49000	0.04399	19.14	192.17	0.00
ANNUAL ALL	00000005				
587377.29000	4161417.04000	0.04089	20.10	192.17	0.00
ANNUAL ALL	00000005				
587371.24000	4161390.55000	0.04391	18.98	192.17	0.00
ANNUAL ALL	00000005				
586763.66000	4161798.90000	0.01491	23.02	192.17	0.00
ANNUAL ALL	00000005				

586784.44000	4161799.45000	0.01505	22.70	192.17	0.00
ANNUAL ALL	00000005				
586805.76000	4161798.90000	0.01527	22.43	192.17	0.00
ANNUAL ALL	00000005				
586763.66000	4161777.03000	0.01746	22.83	192.17	0.00
ANNUAL ALL	00000005				
586743.98000	4161758.44000	0.01988	22.95	192.17	0.00
ANNUAL ALL	00000005				
586743.43000	4161678.06000	0.05402	22.36	192.17	0.00
ANNUAL ALL	00000005				
586743.98000	4161697.75000	0.03845	22.62	192.17	0.00
ANNUAL ALL	00000005				
586743.98000	4161717.98000	0.02952	22.80	192.17	0.00
ANNUAL ALL	00000005				
586744.52000	4161737.66000	0.02398	22.94	192.17	0.00
ANNUAL ALL	00000005				
586845.13000	4161718.53000	0.03218	21.83	192.17	0.00
ANNUAL ALL	00000005				
586764.21000	4161678.06000	0.05832	22.15	192.17	0.00
ANNUAL ALL	00000005				
586764.75000	4161697.75000	0.04052	22.31	192.17	0.00
ANNUAL ALL	00000005				
586724.29000	4161678.06000	0.04929	22.58	192.17	0.00
ANNUAL ALL	00000005				
586824.90000	4161678.06000	0.06032	21.82	192.17	0.00
ANNUAL ALL	00000005				
586807.41000	4161678.06000	0.06149	21.97	192.17	0.00
ANNUAL ALL	00000005				
586783.35000	4161679.16000	0.05939	22.06	192.17	0.00
ANNUAL ALL	00000005				
586763.66000	4161758.44000	0.02030	22.72	192.17	0.00
ANNUAL ALL	00000005				
586764.75000	4161738.21000	0.02452	22.64	192.17	0.00
ANNUAL ALL	00000005				
586764.75000	4161717.98000	0.03066	22.52	192.17	0.00
ANNUAL ALL	00000005				
586783.89000	4161778.13000	0.01757	22.64	192.17	0.00
ANNUAL ALL	00000005				
586784.44000	4161757.35000	0.02087	22.53	192.17	0.00
ANNUAL ALL	00000005				
586824.90000	4161797.81000	0.01552	22.24	192.17	0.00
ANNUAL ALL	00000005				
586845.13000	4161797.81000	0.01562	22.04	192.17	0.00
ANNUAL ALL	00000005				
586845.13000	4161798.36000	0.01556	22.05	192.17	0.00
ANNUAL ALL	00000005				
586804.67000	4161778.13000	0.01779	22.39	192.17	0.00
ANNUAL ALL	00000005				
586783.35000	4161697.75000	0.04188	22.24	192.17	0.00
ANNUAL ALL	00000005				
586784.44000	4161717.98000	0.03148	22.29	192.17	0.00
ANNUAL ALL	00000005				

586824.90000	4161777.58000	0.01804	22.19	192.17	0.00
ANNUAL ALL	00000005				
586845.13000	4161777.03000	0.01824	22.03	192.17	0.00
ANNUAL ALL	00000005				
586865.37000	4161777.03000	0.01832	21.86	192.17	0.00
ANNUAL ALL	00000005				
586823.81000	4161718.53000	0.03215	22.02	192.17	0.00
ANNUAL ALL	00000005				
586805.22000	4161757.35000	0.02117	22.31	192.17	0.00
ANNUAL ALL	00000005				
586824.90000	4161759.54000	0.02097	22.14	192.17	0.00
ANNUAL ALL	00000005				
586784.44000	4161738.76000	0.02491	22.45	192.17	0.00
ANNUAL ALL	00000005				
586807.41000	4161697.20000	0.04315	22.05	192.17	0.00
ANNUAL ALL	00000005				
586803.03000	4161718.53000	0.03181	22.18	192.17	0.00
ANNUAL ALL	00000005				
586864.82000	4161718.53000	0.03195	21.52	192.17	0.00
ANNUAL ALL	00000005				
586826.00000	4161697.20000	0.04316	21.82	192.17	0.00
ANNUAL ALL	00000005				
586845.13000	4161697.75000	0.04235	21.71	192.17	0.00
ANNUAL ALL	00000005				
586844.04000	4161740.40000	0.02529	21.94	192.17	0.00
ANNUAL ALL	00000005				
586807.41000	4161737.66000	0.02564	22.19	192.17	0.00
ANNUAL ALL	00000005				
586825.45000	4161737.66000	0.02588	22.07	192.17	0.00
ANNUAL ALL	00000005				
586844.04000	4161757.90000	0.02141	21.95	192.17	0.00
ANNUAL ALL	00000005				
586823.26000	4161655.64000	0.10169	21.59	192.17	0.00
ANNUAL ALL	00000005				
586847.32000	4161675.88000	0.05992	21.51	192.17	0.00
ANNUAL ALL	00000005				
586844.04000	4161653.46000	0.09453	21.33	192.17	0.00
ANNUAL ALL	00000005				
586864.82000	4161739.85000	0.02542	21.62	192.17	0.00
ANNUAL ALL	00000005				
586862.63000	4161757.35000	0.02158	21.73	192.17	0.00
ANNUAL ALL	00000005				
586757.04000	4161012.60000	0.02724	15.88	15.88	0.00
ANNUAL ALL	00000005				
586756.49000	4160995.10000	0.02512	16.39	16.39	0.00
ANNUAL ALL	00000005				
586737.90000	4160975.96000	0.02270	16.46	16.46	0.00
ANNUAL ALL	00000005				
586737.35000	4160994.56000	0.02465	16.36	16.36	0.00
ANNUAL ALL	00000005				
586758.13000	4160954.64000	0.02092	16.22	16.22	0.00
ANNUAL ALL	00000005				

586777.82000	4160936.59000	0.01961	16.44	16.44	0.00
ANNUAL	ALL 00000005				
586797.50000	4160916.36000	0.01826	16.62	16.62	0.00
ANNUAL	ALL 00000005				
586818.83000	4160895.58000	0.01702	16.44	16.44	0.00
ANNUAL	ALL 00000005				
586755.94000	4160975.42000	0.02292	16.36	16.36	0.00
ANNUAL	ALL 00000005				
586778.36000	4160994.56000	0.02539	15.75	15.75	0.00
ANNUAL	ALL 00000005				
586776.18000	4160974.87000	0.02320	16.39	16.39	0.00
ANNUAL	ALL 00000005				
586777.82000	4160955.73000	0.02130	16.39	16.39	0.00
ANNUAL	ALL 00000005				
586795.86000	4160935.50000	0.01974	16.49	16.49	0.00
ANNUAL	ALL 00000005				
586796.96000	4160954.64000	0.02144	16.31	16.31	0.00
ANNUAL	ALL 00000005				
586796.96000	4160955.18000	0.02149	16.30	16.30	0.00
ANNUAL	ALL 00000005				
586796.96000	4160955.18000	0.02149	16.30	16.30	0.00
ANNUAL	ALL 00000005				
586793.68000	4160955.73000	0.02151	16.34	16.34	0.00
ANNUAL	ALL 00000005				
586795.86000	4160973.78000	0.02331	15.80	15.80	0.00
ANNUAL	ALL 00000005				
586817.74000	4160936.05000	0.02004	16.25	16.25	0.00
ANNUAL	ALL 00000005				
586817.74000	4160954.64000	0.02168	15.74	15.74	0.00
ANNUAL	ALL 00000005				
586818.28000	4160914.72000	0.01836	16.52	16.52	0.00
ANNUAL	ALL 00000005				
586836.33000	4160914.17000	0.01852	16.17	16.17	0.00
ANNUAL	ALL 00000005				
586835.78000	4160936.05000	0.02024	15.72	15.72	0.00
ANNUAL	ALL 00000005				
586856.01000	4160915.81000	0.01890	15.71	15.71	0.00
ANNUAL	ALL 00000005				

** CONCUNIT ug/m^3

** DEPUNIT g/m^2

Technical Modeling Considerations for Criteria Pollutants and Human Health Effects

In their interim guidance addressing *Sierra Club v. County of Fresno* (6 Cal. 5th 502) (Friant Ranch), SMAQMD (2019) recommends lead agencies compare the air quality models used in CEQA analyses to those models designed to evaluate regional attainment with ambient air quality standards and associated human health consequences. This section describes the three models used to estimate criteria pollutant emissions generated by construction and operation of the project and evaluates their ability to assess specific health impacts of the project. This section also analyzes whether models and tools that have been developed to quantify ambient pollutant concentrations could be used to reasonably correlate project-level emissions to specific health consequences.

Review of Project Analysis Models

Criteria pollutant emissions generated by construction and operation of the project were estimated using the California Emissions Estimator Model (CalEEMod), SMAQMD's Roadway Construction Emissions Model (RCEM), and the California Air Resources Board's (CARB) Emissions FACtor (EMFAC) model. Each of the following sections note whether the given model is suitable for quantify human health consequences or changes in nonattainment days.

California Emissions Estimator Model

CalEEMod is a statewide computer model quantifies construction and operational criteria pollutant and greenhouse gas (GHG) emissions from land use development projects. The model evaluates construction emissions associated with six phases—demolition, site preparation, grading, building construction, architectural coatings, and paving. Emission sources considered by the model include offroad construction equipment, onroad mobile vehicles, fugitive dust from land disturbance, and volatile organic compounds from architectural coatings and paving activities.

CalEEMod quantifies project emissions based on user-defined inputs for project location, operational year, land use type (e.g., commercial), climate zone, and size. Based on these minimum data inputs, users can estimate construction emissions based model generated default assumptions for construction phasing, construction equipment inventory and activities, and trip lengths. Default values included in the model were provided by California air districts and account for local conditions and regulations. Where appropriate, CalEEMod combines local data with regional and statewide values to ensure enough information is available to quantify emissions. Users can override default values with project-specific information. In addition, users can implement mitigation measures and strategies to reduce construction-related exhaust and fugitive dust emissions.

Based on the user inputs and emission factors from the CARB's EMFAC and OFFROAD models, CalEEMod calculates both daily maximum (pounds per day) and annual average (tons per year) emissions. These emissions can be compared to air district mass emission thresholds, such as those adopted by EDCAQMD. CalEEMod does not quantify concentrations of the various air pollutants (in

terms of micrograms per cubic meter or parts per million), nor does it estimate secondary pollutants (such as ozone and PM_{2.5}) or potential human health effects from exposure to criteria pollutants. Accordingly, CalEEMod cannot be used to evaluate changes in the number of regional nonattainment days or correlate project-level emissions to specific health consequences.

Road Construction Emissions Model

SMAQMD's RCEM is a public-domain spreadsheet model formatted as a series of individual worksheets. The model is specifically designed to evaluate construction criteria pollutant and GHG emissions from linear projects (e.g., water infrastructure, roads). Four generic construction phases are considered by the model: 1) grubbing/land clearing, 2) grading/excavation, 3) drainage/utilities/subgrade, and 4) paving. Within these phases, the model estimates construction emissions for load hauling (onroad heavy-duty vehicle trips), worker commutes, construction site fugitive dust, and offroad construction vehicles. Although exhaust emissions are estimated for each activity, fugitive dust estimates are currently limited to major dust-generating activities, which include grubbing/land clearing and grading/excavation.

The RCEM was designed to enable users to estimate emissions using a minimum amount of project-specific information, such as construction start year and duration, project type, and the project length and area. This was done because specific data to quantify emissions from transportation projects is often unavailable when the environmental document is being prepared. To help facilitate the quantification of construction emissions based on valid assumptions, the RCEM contains default data based on surveys of construction equipment, schedules, and other construction data from a selection of construction projects in Sacramento County, as well as construction surveys conducted for CalEEMod and a technical evaluation completed by the University of California, Davis. Emission factors used by the model are from the CARB's EMFAC and OFFROAD models.

Like CalEEMod, RCEM calculates both daily maximum (pounds per day) and annual average (tons per year) emissions. RCEM does not quantify concentrations of the various air pollutants (in terms of micrograms per cubic meter or parts per million), nor does it estimate secondary pollutants (such as ozone and PM_{2.5}) or potential human health effects from exposure to criteria pollutants. Accordingly, RCEM cannot be used to evaluate changes in the number of regional nonattainment days or correlate project-level emissions to specific health consequences.

Emissions FACTor Model

CARB developed the EMFAC model to facilitate preparation of statewide and regional mobile source emissions inventories. The model generates criteria pollutant and GHG emissions rates that can be multiplied by vehicle activity data from all motor vehicles, including passenger cars to heavy-duty trucks, operating on highways, freeways, and local roads in California. The resulting emissions estimates are mass emission quantities that can be expressed in terms of pounds per day and tons per year (or other similar unit rates). Like CalEEMod and RCEM, EMFAC does not assess pollutant dispersion or quantify concentrations or potential health effects. Accordingly, EMFAC cannot be used to evaluate changes in the number of regional nonattainment days or correlate project-level emissions to specific health consequences.

Review of Photochemical and Human Health Models

Several models and tools capable of translating mass emissions of criteria pollutants to ambient pollutant concentrations and various health endpoints have been developed. Table 1 summarizes key tools, identifies the analyzed pollutants, describes their intended application and resolution, and analyzes whether they could be used to reasonably correlate project-level emissions to specific health consequences.

As shown in Table 1, almost all tools were designed to be used at the national, state, regional, and/or city-levels. This is because criteria pollutants emitted by a specific source often do not deposit immediately adjacent to that source. Pollutants can be transported by prevailing winds or transformed through chemical reactions and physical interactions with other pollutants in the atmosphere. Because some pollutants can be transported over long distances, recorded violations of the ambient air quality standards at a specific monitoring station and resultant health effects experienced by the local population may be the result of faraway emission sources (some of which may not even be located within the same air basin). For this reason, attaining the ambient air quality standards and protecting human health from exposure to criteria pollutants requires a regional, and sometimes multiregional strategy that considers the combined effect of all emission-generating sources that influence air quality within an air basin.

The models and tools that have been developed to assess attainment of the ambient air quality standards and human health effects are therefore regional in nature and are not well suited to analyze small or localized changes in pollutant concentrations associated with individual projects. Said another way, “it remains impossible, using today’s models, to correlate that increase in concentration to a specific health impact [because] such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level” (San Joaquin Valley Air Pollution Control District 2015). As of the writing of this analysis “neither the Sac Metro Air District nor any other air district currently have methodologies that would provide Lead Agencies and CEQA practitioners with a consistent, reliable, and meaningful analysis to correlate specific health impacts that may result from a proposed project’s mass emissions” (Sacramento Metropolitan Air Quality Management District 2019).

Table 1. Analysis of Photochemical and Human Health Models

Tool	Created by	Description	Resolution	Pollutants Analyzed	Project-Level CEQA Applicability
AirCounts	Abt Assoc.	Online tool that helps large and medium-sized cities quickly estimate the health benefits of PM2.5 emission reductions and economic value of those benefits. The tool estimates the number of deaths (mortality) avoided and economic value related to user-specified regional, annual PM2.5 emissions reduction. The modeling year is 2010; avoided deaths are expected to occur over a 20-year period and their present value is shown in 2010 US dollars at a 3% discount rate.	City-level	Primary PM2.5	This tool is only illustrative, as it is limited to certain cities and does not target specific sectors. Given that it was designed as a screening-level tool, is not sector specific, and includes limited California data, the tool is not recommended for project-level CEQA analysis.
AP2 (formerly Air Pollution Emission Experiments and Policy [APEEP])	Mueller and Mendelsohn, 2006	AP2 is an integrated assessment model developed to assess marginal damage impacts from emissions at the national scale but can be applied at the county-level. The model connects emissions to monetary damages through six modules: emissions (per EPA's national inventory), air quality modeling, concentrations, exposures, physical effects, and valuation. Damages are presented on a dollar-per-ton basis. Model extends damage assessment beyond human health, and includes assessment on reduced crop and timber yields, reductions in visibility, enhanced depreciation of man-made materials and damages due to lost recreation services.	National or county-level	SO ₂ , ROG, NO _x , ozone, PM2.5, PM10	The model operates at the national scale but may be applied at the county-level (although it is not clear how this adjustment should be made). The tool is also not commercially available. Accordingly, the tool is not recommended for project-level CEQA analysis.
Methodology for Estimating Premature Deaths Associated with Long-Term Exposure to Fine Airborne Particulate Matter in California	CARB	The staff report identifies a relative risk of premature death associated with PM2.5 exposure based on a review of all relevant scientific literature, and a new relative risk factor was developed. This new factor is a 10% increase in risk of premature death per 10 µg/m ³ increase in exposure to PM2.5 concentrations (uncertainty interval: 3% to 20%)	National		The primary author of the CARB staff report notes that the analysis method is not suited for small projects and may yield unreliable results due to various uncertainties. Accordingly, the tool is not recommended for project-level CEQA analysis.
Co-Benefits Risk Assessment (COBRA)	US EPA	Preliminary screening tool that contains baseline emission estimates of a variety of air pollutants for a single year (2017). COOBRA is targeted to state and local governments as a screening assessment for clean energy policies. Users specify changes to the baseline emission estimates. COBRA then uses "canned" source-receptor matrix model to estimate PM changes and resulting health outcomes and monetized values. The results can be mapped to visually represent air quality, human health, and health-related economic benefits. Analysis can be performed across the 14 major emissions categories included in the EPA's National Emissions Inventory.	National, regional, state, or county-levels	PM2.5, SO ₂ , NO _x , NH ₃ , and ROG	COBRA is a preliminary screening tool only and cannot be used at sub-county resolution. It also does not account for secondary emission changes resulting from market responses. Accordingly, the tool is not recommended for project-level CEQA analysis.
Environmental Benefits and Mapping Program-Community Edition (BenMAP-CE)	US EPA	Note that COBRA is based on EPA's BenMAP-CE (discussed in a separate entry). BenMAP is EPA's detailed model for estimating the health impacts from air pollution. It relies on input concentrations and applies concentration-response (C-R) health impact functions, which relate a change in the concentration of a pollutant with a change in the incidence of a health endpoint, including premature mortality, heart attacks, chronic respiratory illnesses, asthma exacerbation and other adverse health effects. Detailed inputs are required for air quality changes (concentrations from AERMOD), population, baseline incidence rates, and effect estimates.	National, County, City, and sub-regional levels	Ozone, PM, NO ₂ , SO ₂ , CO	<p>The smallest default analysis resolution for BenMAP-CE is 144 square kilometers (equivalent to approximately 56 square miles or 36,000 acres).</p> <p>This tool could be used to derive average health incidence/ton estimates that can be used for illustrative purposes only for most projects with proper disclosure of the inherent inaccuracies involved in averaging. It is not recommended for individual modeling of smaller projects, however.</p> <p>The tool may be appropriate for modeling certain large-scale General Plan-level analyses.</p>

Tool	Created by	Description	Resolution	Pollutants Analyzed	Project-Level CEQA Applicability
Fast Scenario Screening Tool (TM5-FASST)	Joint Research Centre (Italy)	Tool allows users to evaluate how air pollutant emissions affect large scale pollutant concentrations and their impact on human health (mortality and years of life lost) and crop yield from national to regional air quality policies, such as climate policies. The tool is web-based and does not require coding or modelling. Users must gain access through publishers.	Global and national-levels	PM2.5, ozone, NOx, NH ₃ , CO, ROG, EC, CH ₄ , SO ₂	This tool is applicable at national to global scales. Accordingly, the tool is not recommended for project-level CEQA analysis.
Long-range Energy Alternatives Planning System-- Integrated Benefits Calculator (LEAP-IBC)	Climate and Clean Air Coalition (CCAC)	Allows users to rapidly estimate the impacts of reducing emissions on health, climate, and agriculture. Tool uses sensitivity coefficients that link gridded emissions of air pollutants and precursors to health, climate and agricultural impacts at a national level. The sensitivity coefficients are generated by a chemical transport model, so air quality modeling not necessary. Tool is currently Excel-based and is available through the developers only. A web-based interface is currently under development.	National-level	PM2.5, ozone, NO ₂	This tool is applicable at national scale. Accordingly, the tool is not recommended for project-level CEQA analysis.
Multi-Pollutant Evaluation Method (MPEM)	BAAQMD	Estimates the impacts of control measures on pollutant concentration, population exposures, and health outcomes for criteria, toxic, and GHG pollutants. Monetizes the value of total health benefits from reductions in PM2.5, ozone, and certain carcinogens, and the social value of GHG reductions. MPEM was designed for development of a Clean Air Plan for the San Francisco Bay Area. The inputs are specific to the SF region and are not appropriate for projects outside BAAQMD.	Regional level in the SFBAAB	Ozone, PM, air toxics, GHG	<p>This tool is designed to support the BAAQMD in regional planning and emissions analysis within the SFBAAB. The model applies changes in pollutant concentrations over a four-square kilometer grid.</p> <p>This tool could be used to derive average health incidence/ton estimates that can be used for illustrative purposes only for most projects with proper disclosure of the inherent inaccuracies involved in averaging. It is not recommended for individual modeling of smaller projects, however.</p> <p>The tool may be appropriate for certain large-scale planning-level analyses in the SFBAAB (with permission of BAAQMD).</p>
Response Surface Model (RSM)-based Benefit-per-Ton Estimates	US EPA	Consists of tables reporting the monetized PM2.5-related health benefits from reducing PM2.5 precursors from certain source types nationally and for 9 US cities/regions. Applying these estimates simply involves multiplying the emissions reduction by the relevant benefit per-ton metric. The resulting value is the PM mortality risk estimate at a 3% discount rate.	National or regional (San Joaquin County only) levels	EC, SOx, VOC, NH ₃ , NOx	While RSM includes regional values specific to San Joaquin County, the metrics only reflect the benefits of reductions in exposure to ambient PM alone and do not include the benefits of reductions in other pollutants. The values are also dated as new sector-based BPT values are more current. Accordingly, the tool is not recommended for project-level CEQA analysis (even in San Joaquin County).
Sector-based Benefit-per-Ton Estimates	US EPA	<p>Note that RSM is based on EPA's BenMAP-CE (discussed in a separate entry).</p> <p>Two specific sets of BPT estimates for 17 key source categories are available. Both are a reduced-form approach based on BenMAP modeling. The first are based on Fann et al. (2012) values and available from EPA's website. The second is based on updated modeling from Fann et al. (2017) and available in a Technical Support Document (TSD) from EPA. Applying these factors involves multiplying the emissions reduction (in tons) by the relevant benefit (economic value) or incidence (rates of mortality and morbidity) per-ton metric. The resulting value is the economics, mortality, and morbidity of direct and indirect PM2.5 emissions.</p> <p>All values are based on a national-scale study. Local values are preferred, but not available from any existing reduced form model and use of reduced form estimates for another city is unlikely to provide a better-than-national value. Use of the current values from EPA's 2018 TSD represent the most current estimate of monetized or incidence risk. Values from Lepeule et al. (2012) represent the most current estimate of mortality.</p>	National-scale	PM2.5, SO ₂ , NOx	<p>Due to the complex non-linear chemistry governing ozone formation, EPA was not able to derive ozone or secondary PM BPT values.</p> <p>The BPT estimates provide a rough order-of-magnitude analysis of health consequences from directly-emitted PM and precursors to PM (with no secondary formation). However, the multipliers do not account for project-specific characteristics, receptor locations, or local dispersion characteristics. The resultant health effects are therefore reflective of national averages and may not be exact when applied to the project-level. Nonetheless, the estimates can be used to present an informational and scaled health risk analysis of directly-emitted PM and precursors to PM (with no secondary formation).</p>

Appendix 4.2-2, Special-Status Species with Potential to Occur in the Project Site

Table 1. Special-Status Wildlife and Fish with Potential to Occur in the Project Site:

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
Birds					
<u>American white pelican</u> <u><i>Pelecanus erythrorhynchos</i></u>	<u>-/-/SSC</u>	<u>In California, breeds in northeast part of the state.</u> <u>Confined mainly to the Klamath Basin in the northeast part of the state where they currently breed regularly at Sheepy Lake; the Lower Klamath National Wildlife Refuge, Siskiyou County; and Clear Lake National Wildlife Refuge, Modoc County. Winters mainly along coast; in shallow, protected bays and estuaries; and in large lakes in warm climates.</u>	<u>Breeds on isolated islands in freshwater lakes; forages in shallow water in inland marshes, along lake or river edges, and in wetlands, commonly 30 miles or more from the nesting islands. Associated with aquatic habitat.</u>	<u>Low</u>	<u>Project site is outside the known nesting range for the species. No nesting habitat (i.e., islands) or foraging habitat (i.e., aquatic areas) present on-site. No CNDDB records within 5 miles of the project.</u>
<u>Bald eagle</u> <u><i>Haliaeetus leucocephalus</i></u>	<u>-/-/SSC</u>	<u>Breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity Counties. Large wintering population in Klamath Basin and select locations in Southern California.</u>	<u>Associated with aquatic habitats (i.e., coastal areas, rivers, lakes, reservoirs). Uses large bodies of water or flowing rivers with adjacent snags and perches for foraging. Nests in large trees with open branches near permanent water sources.</u>	<u>Low</u>	<u>No nesting habitat (i.e., large trees near water sources) or foraging habitat (i.e., aquatic areas) present on-site. No CNDDB records within 5 miles of the project.</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
Golden eagle (nesting) <i>Aquila chrysaetos</i>	PR/-/FP	Foothills and mountains throughout California. Uncommon nonbreeding visitor to lowlands such as the Central Valley.	Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful large and medium-sized mammals.	None (moderate foraging only)	No suitable nesting habitat (cliffs and escarpments or tall trees overlooking open country) present in the project site.; <u>Although the project site contains potential and limited foraging habitat (i.e., grassland), present. Project site is flat and surrounded by agricultural and developed land. the species is not anticipated because habitat on-site is small and bounded by development. In addition, the project site is in a heavily urbanized area. It lacks a connection to natural corridors and open spaces. Furthermore, high-quality nesting and foraging habitats are available less than 1 mile to the east. The nearest CNDDDB record (Occurrence #55) for the species is from a location approximately 2.95 mile north of the project site.</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
<u>Loggerhead shrike</u> <u>(nesting)</u> <u><i>Lanius ludovicianus</i></u>	<u>-/-/SSC</u>	<u>Occurs year-round throughout California, except for the heavily forested higher mountains in the northwest and the higher areas in the deserts. The breeding range spans much of lowland California; the winter range includes most lowland areas south of Glenn County.</u>	<u>Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches; occurs only rarely in heavily urbanized areas but often found in open cropland.¹³ Nests in isolated shrubs and trees as well as the woodland/scrub edges of open habitats; forages in grasslands, agricultural fields, and low scrub habitats.</u>	<u>Low</u>	<u>Although suitable nesting (i.e., trees) and foraging habitats (i.e., grasslands and agricultural fields) are present on-site, the species is not anticipated because the project site is within a heavily urbanized area that lacks a connection to natural corridors and open spaces. Also, high-quality nesting and foraging habitats are available less than 1 mile to the east. No CNDDDB records within 5 miles of the project.</u>
<u>Long-eared owl</u> <u><i>Asio otus</i></u>	<u>-/-/SSC</u>	<u>Permanent resident east of the Cascade Range from Placer County north to the Oregon border and east of the Sierra Nevada from Alpine County to Inyo County. Scattered breeding populations along the coast and in southeastern California. Winters throughout the Central Valley and southeastern California.</u>	<u>Nests in abandoned nests of crows, hawks, or magpies, usually in dense riparian stands of willows, cottonwoods, live oaks, or conifers that are open or adjacent to grasslands, meadows, or shrub lands; key habitat components are a dense cover, suitable nest platforms, and open foraging areas.</u>	<u>Low</u>	<u>No suitable nesting habitat (i.e., dense stands of trees) with nearby high-quality foraging habitat (i.e., open grasslands, meadows, or shrub lands) is present within the project site. Grassland on-site is marginal habitat because of its small size, 2 acres, and not open</u>

¹³ Ibid.

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
					<u>because infrastructure is located on three sides. No CNDDDB records within 5 miles of the project.</u>
Northern harrier <i>Circus cyaneus</i>	-/-/SSC	Throughout lowland California but species has been recorded in fall at high elevations.	<u>Breeds and forages in open habitats, including marshes, grasslands, meadows, marshes, grasslands, weedy fields, pastures, croplands, sagebrush flats, and desert sinks, and seasonal and agricultural wetlands. ; n</u> Nests on ground within a thicket of vegetation; <u>prefers nesting in emergent wetlands or along water bodies.</u>	Low (moderate foraging only)	<u>Although the project site contains potential suitable foraging and nesting habitat (i.e., grasslands and grain fields), is present within the project site, but the species is not anticipated because the habitat on-site is not the preferred habitat. In addition, the site size is marginal (2.03 acres) and surrounded by development agricultural and developed land. Also, the site is in a heavily urbanized area. It lacks a connection to natural corridors and open spaces. Furthermore, high-quality nesting and foraging habitats are less than 1 mile to the east. The nearest CNDDDB record (Occurrence #5) for the species is from a</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
					location approximately 3.4 miles southwest of the project site.
<u>Olive-sided flycatcher (nesting)</u> <u>Contopus cooperi</u>	<u>-/-/SSC</u>	<u>Breeds mostly in the boreal forest and western coniferous forests, from sea level to more than 10,000 feet (in Rockies). In California, found in forests of spruce, fir, Douglas-fir, hemlock, western red cedar, and tamarack or larch; in Southern California and northern Baja California, inhabits mostly pine forest.</u>	<u>Nests in openings or edges of forest in relation to meadows, rivers and streams, partially logged areas, recent burns, beaver ponds, bogs, and muskegs. Presence of dead or dying trees important to nesting sites. Rarely found in deep, closed forest.</u>	<u>Low</u>	<u>No nesting habitat (i.e., forest) present on project site. No CNDDB record within 5 miles of the project.</u>
Tricolored blackbird (nesting colony) <i>Agelaius tricolor</i>	-/ST/-	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties.	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or; upland sites with blackberries; <u>weedy fields dominated by milk thistle and/or mallow and mustard, nettles, in thistles, and grain fields, usually associated with a dairy farm.</u> Habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony. <u>Foraging habitats include wetlands, grasslands, cultivated fields, and feedlots associated with dairy farms.</u>	Low (moderate foraging only)	<u>Although the project site contains potential suitable foraging (i.e., grassland) and nesting (i.e., grain field) habitats, is present within the project site, but the species is not anticipated because the habitat size is marginal (12.33 acres) and surrounded predominately by developed land. The project site is in a heavily urbanized area that lacks a connection to natural corridors and</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
					<u>open spaces</u> . Also, suitable habitat on project site is not near water. The nearest CNDDDB record (Occurrence #25) for the species is from a location approximately 3.4 miles southwest of the project site.
<u>Yellow-breasted chat (nesting)</u> <u>Icteria virens</u>	<u>-/-/SSC</u>	<u>Breeding range includes the northern Sacramento Valley, Cascade Range, Sierra Nevada foothills, northwestern California, most of the Coast Ranges, the Colorado River, and other scattered sites. Breeding range is thought to be approximately 35% of its historical range, with breeding yellow-breasted chats now rare or absent in much of the Central Valley.</u>	<u>Nests and forages in riparian thickets of willow or other brushy tangles near water with a thick understory in riparian woodland.</u>	<u>Low</u>	<u>No nesting and foraging habitat (i.e., riparian) present on-site. No CNDDDB records within 5 miles of the project.</u>
<u>Yellow-headed blackbird (nesting)</u> <u>Xanthocephalus xanthocephalus</u>	<u>-/-/SSC</u>	<u>Breeds east of the Cascade Range and in the Sierra Nevada, the Central Valley, portions of the Coast Ranges, and in Southern California in the Imperial and Colorado River Valleys. Migrates south to winter;</u>	<u>Nests in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds.</u>	<u>Low</u>	<u>No nesting habitat (i.e., freshwater emergent wetlands with dense vegetation and deep water) present on-site. No CNDDDB records within 5 miles of the project.</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
		<u>some winter in the southern Central Valley and in Imperial Valley.</u>			
<u>Yellow warbler (nesting)</u> <u><i>Setophaga petechia</i></u>	<u>-/-/SSC</u>	<u>Range includes coastal areas, Northern California, and the Sierra Nevada below approximately 7,000 feet; mostly extirpated from the southern Sacramento and San Joaquin Valleys. However, nesting territories have been recorded in the San Joaquin Wildlife Refuge.</u>	<u>Nests and forages in early successional riparian habitats.</u>	<u>Low</u>	<u>No nesting and foraging habitat (i.e., riparian) present on-site. No CNDDDB records within 5 miles of the project.</u>
Mammals					
<u>Fringed myotis</u> <u><i>Myotis thysanodes</i></u>	<u>-/-/SSC, WBWH-H</u>	<u>Throughout California, except in the southern desert regions and Central Valley.</u>	<u>In a wide variety of habitats; optimal habitats are pinyon-juniper, valley foothill hardwood, and hardwood conifer. Uses caves, mines, buildings, or crevices for maternity colonies and roosts.</u>	<u>Low</u>	<u>No optimal habitat (i.e., pinyon-juniper, valley foothill hardwood, and hardwood conifer) present on-site. Buildings on-site could be used for roosting. No CNDDDB records within 5 miles of the project.</u>
<u>Long-eared myotis</u> <u><i>Myotis evotis</i></u>	<u>-/-/SSC, WBWH-M</u>	<u>Coastal and mountainous regions throughout California.</u>	<u>Found in all brush, woodland, and forest habitats from sea level to about 9,000 feet. Prefers coniferous woodlands and forests. Nursery colonies in buildings, crevices, spaces</u>	<u>Low</u>	<u>No optimal habitat (i.e., woodlands and forests) present on-site. Buildings and trees on-site could be used for roosting. No CNDDDB records within 5 miles of the project.</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
			<u>under bark, and snags. Caves used primarily as night roosts.</u>		
<u>Long-legged myotis</u> <u><i>Myotis volans</i></u>	<u>-/-/SSC,</u> <u>WBWH-H</u>	<u>Common in California, occurring in coastal ranges from Oregon to Mexico, the Cascades/Sierra Nevada to Southern California, most of the Great Basin region, and in several Mojave Desert mountain ranges. Absent only from the Central Valley; the Colorado and Mojave Deserts, except in mountain ranges; and eastern Lassen and Modoc Counties. Although records range from sea level to 11,400 feet, most common above 4,000 feet.</u>	<u>Most common in coniferous forests but also occurs seasonally in riparian and desert habitats. Uses abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark, and hollows within snags as summer day roosts; caves and mine tunnels used as hibernacula.</u>	<u>Low</u>	<u>No optimal habitat (i.e., forests) present on-site. Buildings and trees on-site could be used for roosting. No CNDDB records within 5 miles of the project.</u>
<u>Western red bat</u> <u><i>Lasirurs blossevillii</i></u>	<u>-/-/SSC,</u> <u>WBWH-H</u>	<u>Year-round range spans the Central Valley, Sierra Nevada foothills, Coast Ranges, and coastal areas, except in Humboldt and Del Norte Counties.</u>	<u>Mature riparian broadleaf forest in the Central Valley is primarily summer breeding habitat for the species in California, including females and pups; riverside orchards may also be used as maternity roosts. Roosts alone or in small family groups in tree foliage, occasionally shrubs; prefers habitat edges and</u>	<u>Low</u>	<u>No preferred habitat (i.e., riparian forest) present on-site. On-site trees could be used for roosting. No CNDDB records within 5 miles of the project.</u>

Common Name Scientific Name	Status Federal/ State/ Other	Geographic Range	General Habitat Description	Potential for Occurrence	Rationale
			<u>mosaics with trees that are protected above and open below, with open areas for foraging, including grasslands, shrub lands, and open woodlands. Unsubstantiated records of hibernation in leaf litter during the winter.</u>		
<u>Yuma myotis</u> <u><i>Myotis yumanensis</i></u>	<u>-/-/SSC,</u> <u>WBWH-L</u>	<u>Common and widespread throughout California, from sea level to 11,000 feet, excluding the Mojave and Colorado Desert regions.</u>	<u>Optimal habitats are open forests and woodlands with sources of water. Distribution is closely tied to bodies of water. Maternity colonies occur in caves, mines, buildings, bridges, or crevices.</u>	<u>Low</u>	<u>No optimal habitat (i.e., forests or woodlands with nearby water sources) present on-site. Buildings and trees on-site could be used for roosting. No CNDDDB records within 5 miles of the project.</u>

Chapter 5

Mitigation Monitoring and Reporting Program

Public Resources Code Section 21081.6(a)(1) requires that a Lead Agency adopt a Mitigation Monitoring and Reporting Program (MMRP) before approving a project in order to mitigate or avoid significant impacts that have been identified in an Environmental Impact Report (EIR). The purpose of the MMRP is to ensure that the required mitigation measures identified in the EIR are implemented as part of the overall project development process. In addition to ensuring implementation of mitigation measures, the MMRP provides guidance to agency staff and decision-makers during project implementation, and identifies the need for enforcement action before irreversible environmental damage occurs. The MMRP must be adopted when the City Council makes a final decision on the project.

The following table summarizes the mitigation measures identified in the Final EIR for the Station East Residential/Mixed-Use project. Specifically, the table identifies each mitigation measure; the action required or the measure to be implemented; the time at which the monitoring is to occur; the monitoring conditions; and the agency or party responsible for ensuring that the monitoring is performed. Once completed, all monitoring actions will be reported in writing to or by the City, which will maintain mitigation monitoring records for the proposed project.

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
Air Quality							
Mitigation Measure AQ-2a: Require Low-VOC Coatings During Construction The project applicant shall require their contractors, as a condition of contract, to reduce construction-related fugitive ROG emissions by ensuring that low-VOC coatings that have a VOC content of 10 grams/liter (g/L) or less are used during construction. Prior to permit issuance, the project applicant shall submit evidence to the City regarding the use of low-VOC coatings to the City.	Project applicant to provide City applicable provisions of construction contract requiring the use of low-VOC coatings.	Prior to issuance of building permits for each building.	Per building permit issuance	Planning Division			
Mitigation Measure AQ-2b: Use Clean Diesel-Powered Equipment During Construction to Control Construction-Related Emissions The project applicant shall ensure that all off-road diesel-powered equipment used during construction is equipped with EPA-approved Tier 4 Final engines. Prior to permit issuance, the project applicant, in coordination with the construction contractor, shall submit evidence to the City regarding the use of EPA-approved Tier 4 Final engines or cleaner for project construction.	Project applicant to provide City applicable provisions of construction contract requiring off-road diesel-powered equipment be equipped with engines that meet EPA Tier 4 final emissions standards.	Prior to issuance of grading permits/improvement plan approvals and building permits for each building.	Per building/grading permit issuance	Planning Division and Public Works Department			
Mitigation Measure AQ-2c: Require Use of Diesel Trucks with 2010-Compliant Model Year Engines The project applicant shall ensure that contractors, as a condition of contract, to use diesel trucks that have 2010 model year or newer engines, but no less than the average fleet mix for the current calendar year as set forth in the CARB’s EMFAC2017 model database. In the event that 2010 model year or newer diesel trucks cannot be obtained, the project applicant, in coordination with the construction contractor, must provide documentation to the City showing that a good faith effort to locate such engines was conducted, such as outreach to at least two	Project applicant to provide City applicable provisions of construction contract requiring use of diesel trucks with 2010-compliant model year engines.	Prior to issuance of grading permits/improvement plan approvals and building permits for each building.	Per building/grading permit issuance	Planning Division and Public Works Department			

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
vendors. Prior to permit issuance, the project applicant shall submit evidence compliance with this mitigation measure to the City.							
Mitigation Measure AQ-2d: Implement BAAQMD Basic Construction Mitigation Measures The project applicant shall require all construction contractors to implement the basic construction mitigation measures recommended by BAAQMD. The emissions reduction measures shall include, at a minimum, all of the following: Prior to permit issuance, the project applicant shall provide documentation that these basic construction measures are reflected in all construction contracts. <ul style="list-style-type: none"> • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, unpaved access roads) will be watered two times a day. • All haul trucks will be covered when transporting soil, sand, or other loose material offsite. • All visible mud or dirt track-out material on adjacent public roads will be removed using wet-power vacuum-type street sweepers at least once a day. The use of dry-power sweeping is prohibited. • All vehicle speeds will be limited to 15 miles per hour on unpaved roads. • All roadways, driveways, and sidewalks that are to be paved will be paved as soon as possible. Building pads will be laid as soon as possible after grading, unless seeding or a soil binder is used. • All construction equipment will be maintained and properly tuned in accordance with manufacturers' specifications. All equipment will be checked by a certified visible-emissions evaluator. 	Project applicant to demonstrate that all applicable BAAQMD basic construction mitigation measures have been incorporated into contract specifications.	Prior to issuance of grading permits/improvement plan approvals and building permits for each building.	Ongoing during construction	Public Works Department			

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<ul style="list-style-type: none">• Idling times will be minimized, either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure).• Publicly visible signs will be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. BAAQMD's phone number will also be visible to ensure compliance with applicable regulations.							
Mitigation Measure AQ-2e: Require Low-VOC Coatings during Operation The project applicant shall provide in their CC&Rs a provision to require their contractors, as a condition of contract, to reduce operation-related fugitive ROG emissions by ensuring that low-VOC coatings that have a VOC content of 10 grams/liter (g/L) or less are used during operation.	Project applicant to provide City CC&Rs for review and approval.	Prior to issuance of final occupancy for each building.	Multiple	Planning Division			
Mitigation Measure AQ-2f: Require Use of Green Consumer Products during Operation The project applicant shall provide in their CC&Rs for education of residential and commercial occupants requiring green consumer products. Prior to receipt of any certificate of final occupancy, the project applicant shall work with the City of Union City to develop appropriate communications regarding consumer products that generate lower than typical VOC emissions. Examples of green products may include low-VOC cleaning supplies and consumer products.	Project applicant to provide the City CC&Rs for review and approval.	Prior to receipt of certificate of final occupancy for each building.	Multiple	Planning Division			

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>Mitigation Measure AQ-2g: Purchase of Mitigation Credits for Emissions Exceeding BAAQMD's Daily Pollutant Thresholds</p> <p>The project applicant shall provide annual operational emissions estimates to the City for review prior to receipt of any certificate of final occupancy of new buildings. Average annual emissions shall be forecasted for each operational year over the life of the project (30 years). Emissions shall be calculated using BAAQMD-accepted emissions model and project-specific land use and design features. Should the proposed development not result in operational emissions exceeding BAAQMD's daily pollutant thresholds, the project would result in less-than-significant air quality impacts during operation and no further action would be required.</p> <p>If it is shown that the project would result in exceedances of thresholds during any year of the project's life, the project applicant shall pay a mitigation offset fee pursuant to BAAQMD's emission reduction credit or interchangeable emission credit program, in an amount to be determined prior to the first year of exceedance over the life of the project (30 years). All fees for such credits shall be paid by the project applicant prior to the receipt of any certificate of final occupancy. If, at the time of the certificate of occupancy for the final building is issued, the project applicant demonstrates there are no exceedances, no further action shall be required.</p>	Project applicant to provide annual operational estimates to the City for review and approval. In the case that the project exceeds thresholds, the project applicant will pay the mitigation offset fee.	Prior to receipt of certificate of final occupancy for each building.	Multiple	Planning Division			
Biological Resources							
<p>Mitigation Measure BIO-1a: Burrowing Owl Protection</p> <p>The project applicant shall implement the following measures prior to any construction activities:</p>	Project applicant to provide City applicable construction provisions, including schedule. If	Prior to issuance of grading permits, and as needed during demolition and construction.	Ongoing	Planning Division and Public Works Department			

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<ul style="list-style-type: none"> • If construction activities occur between April and August, the project applicant shall retain a qualified biologist* to conduct preconstruction surveys for burrowing owl 14 days prior to and within 24 hours of the start of construction activities. • If an active burrow is identified, an appropriate no-disturbance buffer zone shall be established that extends a minimum of 250 feet around the burrow, and construction activities shall be prohibited within this zone during the nesting season (April through July). • Buffers may be modified based on the opinion of the biological monitor and in coordination with CDFW taking into consideration site specific conditions (e.g., line of sight to activities, specific activities taking place). • Representatives of the CDFW shall be consulted to determine whether the nest burrow should be protected and a permanent buffer established or whether the nest site may be destroyed once the young have fled. • Construction activities within the buffer zone shall not proceed until the qualified biologist has determined that the owls have fled and the nest can be destroyed or a CDFW-approved relocation plan is successfully implemented. <p>* The experience requirements for a “qualified biologist” shall include a minimum of 4 years of academic training and professional experience in biological sciences and related resource management activities, and a minimum of 2 years of experience conducting surveys for each species that may be present within the project area.</p>	<p>construction will occur in the nesting season, project applicant to submit to City pre-construction surveys for review and approval. If necessary, protective measures will be implemented by the qualified biologist.</p>						

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
Mitigation Measure BIO-1b: Bat Protection The project applicant shall implement the following measures prior to any construction activities: <ul style="list-style-type: none"> The project applicant shall retain a qualified biologist to conduct preconstruction surveys and implement protective measures for hoary bat, pallid bat, Townsend's big-eared bat, and other roosting bats. At least 2 months prior to the demolition of the existing buildings and structures, a qualified biologist shall conduct an initial daytime survey to assess the building for potential bat roosting habitat, and to look for bats and bat sign. Qualified biologists shall have knowledge of the natural history of the species that could occur and sufficient experience determining bat occupancy and bat survey techniques. The qualified biologist shall examine both the inside and outside of the building and structures for potential roosting habitat, as well as routes of entry to the building and structures. Locations of any roosting bats, signs of bat use, and entry and exit points shall be noted and mapped on a drawing of the buildings and structures. Roost sites shall also be photographed as feasible. Depending on the results of the habitat assessment, the following steps will be taken as described below. If the building and structures can be adequately assessed (i.e., all areas of the building and structures can be examined) and no habitat or limited habitat for roosting bats is present and no signs of bat use are present, a preconstruction survey of the interior and exterior of the buildings and structures by a qualified biologist shall be conducted within 24 hours of demolition. 	Project applicant to conduct and submit to City pre-construction surveys for review and approval. If necessary, protective measures will be implemented by the qualified biologist.	Prior to issuance of grading permits and/or demolition permits for each building.	Per issuance of each grading and/or demolition permits.	Planning Division and Public Works Department			

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<ul style="list-style-type: none">• If moderate or high potential habitat is present but there are no signs of bat use, the project applicant shall implement measures under the guidance of a qualified biologist to exclude bats from using the buildings and structures as a roost site, such as sealing off entry points. Prior to installing exclusion measures, a qualified biologist shall re-survey the buildings and structures to ensure that no bats are present. Additionally, a preconstruction survey of the interior and exterior of the building and structures shall be conducted within 24 hours of demolition to confirm that no bats are present.• If moderate or high potential habitat is present and bats or bat sign are observed, or if exclusion measures are not installed as described above, or the buildings and structures provides suitable habitat but could not be adequately assessed, the following protective measures shall be implemented.<ul style="list-style-type: none">○ Follow-up surveys shall be conducted to determine if bats are still present. If species identification is required by the California Department of Fish and Wildlife (CDFW), surveys using night vision goggles and active acoustic monitoring using full spectrum bat detectors shall be used. A survey plan (number, timing, and type of surveys) shall be determined in coordination with CDFW.○ Based on the timing of demolition, the extent of bat sign or occupied habitat, and the species present (if determined), the qualified biologists shall work with the City and CDFW to develop a plan to discourage or exclude bat use prior to demolition. The plan may include installing exclusion measures or using light or other means to deter bats from using the buildings and structures to roost.							

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<ul style="list-style-type: none">○ A preconstruction survey of the interior and exterior of the buildings and structures shall be conducted within 24 hours of demolition.● Depending on the species of bats present, size of the bat roost, and timing of the demolition, additional protective measures may be necessary. Appropriate measures shall be determined in coordination with the CDFW and may include measures listed below.<ul style="list-style-type: none">○ To avoid impacts on maternity colonies or hibernating bats, the buildings and structures shall not be demolished while bats are present, generally between April 1 and September 15 (maternity season) and from October 30 to March 1 (hibernation).○ Removal of roosting habitat shall only occur only following the maternity season and prior to hibernation, generally between September 15 and October 30, unless exclusionary devices are first installed (as described below). Other measures, such as using lights to deter bat roosting, may be used if developed in coordination with and approved by CDFW.○ Installation of exclusion devices shall occur before maternity colonies establish or after they disperse, generally from March 1 –30 or September 15–October 30 to preclude bats from occupying a roost site during demolition. Exclusionary devices shall only be installed by or under the supervision of a qualified biologist.○ The project applicant shall implement the following measures prior to tree removal or trimming:● Project applicant(s) shall avoid impacts on maternity colonies or hibernating bats if identified by avoiding tree removal between April 1 and September 15 (maternity season)							

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>and between October 30 and March 1 (hibernation) to the extent feasible.</p> <ul style="list-style-type: none"> No more than 2 weeks prior to the start of tree removal or trimming, a qualified biologist shall examine the trees that are to be removed or trimmed to identify suitable bat roosting habitat. High-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags) shall be identified, and the area around these features shall be searched for bats and bat sign (e.g., guano, culled insect parts, staining). If the qualified biologist concludes that the trees do not provide suitable bat roosting habitat, no further actions are necessary and tree removal or trimming may commence. <p>If the daytime survey identifies moderate or high potential for bats, an evening survey shall be conducted. The qualified biologist shall conduct evening visual emergence surveys of the source habitat feature from a half hour before sunset to 1 to 2 hours after sunset for a minimum of 2 nights within the season when construction shall take place. Night-vision goggles or full-spectrum acoustic detectors shall be used during emergence surveys to assist in species identification. All emergence surveys shall be conducted during favorable weather conditions (i.e., calm nights with temperatures conducive to bat activity [55 degrees and above] and no precipitation). If it is found that roosting special-status bats are present, protective measures determined by the qualified biologist in coordination with CDFW shall be implemented, as needed (see previous description for the types of measures). The CDFW may require compensatory mitigation for the loss of roosting habitat, depending on the species present and size of the bat roost. Compensation, if required, shall be determined in consultation with the</p>							

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
CDFW and may include constructing, installing, or monitoring suitable replacement habitat on-site or near the project site to ensure it functions as intended.							
Mitigation Measure BIO-1c: Nesting Bird Protection <ul style="list-style-type: none"> To the extent practicable, vegetation and tree removal, structural demolition, and other construction-related activities shall be performed from September 1 through January 31 to avoid the general nesting period for migratory birds protected by the MBTA. If construction occurs during migratory bird nesting season (February 1 to August 31), the project applicant shall be responsible for the retention of a qualified biologist with demonstrated nesting bird survey experience to conduct a preconstruction nesting bird survey within 7 days prior to the start of construction in areas that have not been previously disturbed by project activities or after any construction breaks of 7 days or more. The survey shall be performed in suitable habitat to locate active passerine and raptor species (birds of prey) within 100 and 300 feet, respectively, of the applicable construction phase area. If active nests are located during the preconstruction nesting bird surveys, a qualified biologist shall determine if the schedule of construction activities could affect the active nest; if so, the following measures shall apply, as determined by the qualified biologist: <ul style="list-style-type: none"> If the qualified biologist determines that construction would not affect an active nest, construction may proceed without restriction; however, a qualified biologist shall regularly monitor the nest at a frequency determined appropriate for the 	Project applicant to provide City applicable construction provisions, including schedule. If construction will occur in the nesting season, project applicant to submit to City pre-construction surveys for review and approval.	Prior to issuance of grading and demolition permits for buildings, and as needed during construction activities.	Ongoing.	Planning Division and Public Works Department			

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>surrounding construction activity to confirm that there would be no adverse effect. The frequency of spot check monitoring would be determined on a case-by-case basis, considering the particular construction activity, duration, proximity to the nest, and physical barriers that may screen activity from the nest. The qualified biologist may revise his or her determination at any time during the nesting season, in coordination with the City.</p> <ul style="list-style-type: none"> ○ If it is determined that construction may affect an active nest, the qualified biologist shall establish a no-disturbance buffer around the nest(s), and all project work shall halt within the buffer to avoid disturbance or destruction until the qualified biologist determines that the nest is no longer active. Typically, buffer distances are no less than 50 feet for passerines and no less than 250 for raptors. These are standard buffer distances that State and federal regulators agree on as it is widely known in the avian community to minimize disturbances to nesting birds. The buffer size, which can vary with different species, shall be based on species' sensitivity to disturbance, planned work activities in the vicinity of the nest, the level of noise or construction disturbance, the line of sight between the nest and the area(s) of disturbance, ambient levels of noise and other disturbances, and topographical or artificial barriers. ○ Modifying nest buffer distances, allowing certain construction activities within the buffer, and/or modifying construction methods in proximity to active nests shall be done at the discretion of the qualified 							

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>biologist, in compliance with the California Fish and Game Code and other applicable laws.</p> <ul style="list-style-type: none"> Any work that must occur within established no-disturbance buffers around active nests shall be monitored by a qualified biologist. If adverse effects in response to project work within the buffer are observed that could compromise the nest, work within the no-disturbance buffer(s) shall halt until the nest occupants have fledged. Any birds that begin nesting within the project area and survey buffers amid construction activities are assumed to be habituated to construction-related or similar noise and disturbance levels. Therefore, exclusion zones around nests may be reduced or eliminated in these cases, as determined by the qualified biologist. Work may proceed around these active nests as long as the nests and their occupants are not directly affected. <p>Any inactive non-raptor nest on the project site shall be removed by a qualified biologist to deter nesting.</p>							
Cultural Resources							
<p>Mitigation Measure CUL-2a: Preconstruction Archaeological Sensitivity Training</p> <p>Prior to the start of any construction activities, a qualified archaeologist shall conduct a preconstruction archaeological sensitivity training to the excavation crew. This training shall include an overview of what cultural resource are and why they are important, archaeological terms (such as site, feature, deposit), project site history, types of cultural resources likely to be uncovered during excavation, laws that protect cultural resources, and the unanticipated discovery protocol.</p>	Project applicant to retain qualified archaeologist and conduct sensitivity training.	Prior to issuance of grading permits/improvement plan approvals and building permits for each building.	Per building/grading permit issuance	Planning Division and Public Works Department			

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
Mitigation Measure CUL-2b: Unanticipated Discovery Protocol Should an archaeological resource be encountered during project construction activities, the construction contractor shall halt construction within 50 feet of the find and immediately notify the City. Construction activities shall be redirected and a qualified archaeologist, in consultation with the City, shall 1) evaluate the archaeological resource to determine if it meets the CEQA definition of a historical or unique archaeological resource and 2) make recommendations about the treatment of the resource, as warranted. If the resource does meet the CEQA definition of a historical or unique archaeological resource, then it shall be avoided to the extent feasible by project construction activities. If avoidance is not feasible, then adverse effects to the deposit shall be mitigated as specified by CEQA Guidelines Section 15126.4(b) (for historic resources) or Section 21083.2 (for unique archaeological resources). This mitigation may include, but is not limited to, a thorough recording of the resource on Department of Parks and Recreation Form 523 records, or archaeological data recovery excavation. If data recovery excavation is warranted, CEQA Guidelines Section 15126.4 (b)(3)(C), which requires a data recovery plan prior to data recovery excavation, shall be followed. If the significant identified resources are unique archaeological resources, mitigation of these resources shall be subject to the limitations on mitigation measures for archaeological resources identified in CEQA Guidelines Sections 21083.2 (c) through 21083.2 (f).	Verify that all activity within 50 feet of find is halted until such time as the find is evaluated by a qualified professional. If needed, verify that a find has been evaluated by a qualified professional and that data recovery has occurred if required.	Duration of soil-disturbing or excavating activities.	As needed.	Planning Division and Public Works Department			
Mitigation Measure CUL-3: Handling of Human Remains	Verify that all activity within 50 feet of find is halted	Duration of soil-disturbing or	As needed.	Planning Division and			

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
In the event that any human remains are encountered during construction activities, work within 50 feet of the discovery shall be redirected and the Alameda County Coroner shall be notified immediately. Concurrently, an archaeologist shall be contacted to assess the situation and consult with the appropriate agencies. If the human remains are of Native American origin, the coroner shall notify the NAHC within 24 hours of this identification in accordance with section 5097.98 of the California Public Resources Code, and section 7050.5 of the California Health and Safety Code, as applicable. The NAHC shall identify a most likely descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.	until such time as the find is evaluated by a County Coroner. If remains are to be Native American, Coroner shall notify NAHC to identify descendants to make recommendations regarding proper burial.	excavating activities.		Public Works Department			
Geology, Soils, and Paleontological Resources							
Mitigation Measure GEO-7: Paleontological Monitoring and Mitigation Plan Prior to initial ground disturbance in previously undisturbed strata of geologic units, the applicant shall retain a Qualified Paleontologist, as defined by the Society of Vertebrate Paleontology, to direct all mitigation measures related to paleontological resources and design a Paleontological Mitigation and Monitoring Program (PMMP) for the proposed project. The PMMP shall include measures for a preconstruction survey, a training program for construction personnel, paleontological monitoring, fossil salvage, curation, and final reporting, as applicable.	Project applicant to retain qualified paleontologist and submit PMMP to City for review and approval.	Prior to issuance of grading permits/improvement plan approvals and building permits for each building.	Per building/grading permit issuance	Planning Division and Public Works Department			
Greenhouse Gas Emissions							
Mitigation Measure GHG-1a: Require Implementation of BAAQMD-recommended Construction BMPs The project sponsor shall require their contractors, as a condition of contracts (e.g.,	Project applicant to submit to City applicable provisions of construction	Prior to issuance of grading permits, and improvement plan approvals	Per building/grading permit issuance	Planning Division and Public Works Department			

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
standard specifications), to reduce construction-related GHG emissions by implementing BAAQMD's recommended best management practices, including (but not limited to) the following measures (based on BAAQMD's CEQA Guidelines). The project applicant shall submit evidence of compliance to the City prior to permit issuance.	contracts requiring the use of BAAQMD-recommended construction best management practices to reduce GHG emissions.	and building permits for each building.					
<ul style="list-style-type: none"> • Ensure alternative fueled (e.g. biodiesel, electric) construction vehicles/equipment make up at least 15 percent of the fleet • Use local building materials of at least 10 percent (sourced from within 100 miles of the Planning Area) • Recycle and reuse at least 65 percent of construction waste or demolition materials 							
Hazards and Hazardous Materials							
Mitigation Measure HAZ-2a: Site Management Plan Prior to issuance of a grading permit, the project sponsor shall retain the services of a qualified environmental engineering firm to prepare and implement, during site preparation and grading activities, a Site Management Plan (SMP). The SMP shall be designed to protect human health and the environment and include protocols, measures, and techniques for the proper handling, management, and disposition of affected soils and groundwater associated with construction dewatering (if any) found on the site and any areas of off-site work during site preparation and grading activities. The SMP shall also be designed to protect workers and off-site receptors during site activities and ensure the proper characterization, management, and/or disposal of contaminated environmental media that exceed applicable environmental screening levels established by the RWQCB, regional screening levels established by EPA, or other	Project applicant to retain qualified environmental engineering firm and submit SMP to City for review . Project applicant to provide to City a copy of the approved SMP by the RWQCB and implement the SMP during site preparation and grading under the approving agency's oversight at the project applicant's cost.	Prior to issuance of grading permit(s)	Once	Planning Division, Public Works Department, RWQCB, and ACWD			

Mitigation Measure	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification		
					Initial	Date	Comments
<p>screening thresholds approved for the project. The environmental engineering firm shall determine the applicability of Bay Area Air Quality Management District (or other agency) rules for fugitive dust control and/or VOC emissions during earthwork, and the SMP shall provide compliance protocols to be adhered to, including air monitoring protocols, if required. The SMP shall be prepared by a commercial environmental engineering firm with demonstrated expertise and experience in the preparation of SMPs and be stamped by an appropriately licensed professional. The SMP shall be submitted for City and outside agency review in conformance with DIPSA Specific Plan, Toxic and Hazardous Substances Policy 5, and implemented throughout all ground-disturbing work.</p> <p>The SMP shall establish protocols and measures for addressing the discovery of presently unknown environmental conditions or subsurface structures such as USTs or sumps. At a minimum, there shall be protocols for the sampling and testing of soil unearthed during the construction of new or replacement of existing water mains off-site. If the environmental engineering firm subsequently identifies the need for further sampling, the project sponsor shall implement this and any other requirements identified in the SMP. The project sponsor shall enter into a voluntary agreement with the San Francisco Bay Regional Water Quality Control Board (RWQCB) for review and approval of the SMP. As lead agency for the site cleanup, the RWQCB will also have oversight authority pertaining to implementation of the SMP. If directed by the RWQCB, additional site investigation and characterization may be required prior to construction to ensure that hazardous materials in the soil, soil vapor, and/or groundwater do</p>							

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not exceed applicable regulatory thresholds. If additional site investigation and characterization is required prior to construction, the project sponsor shall implement said studies (and their respective recommendations, ¹ if necessary) prior to construction. The RWQCB will also consult and coordinate with the ACWD on the scope of the SMP. The project sponsor shall provide a copy of the SMP to the ACWD at the same time the SMP is submitted to the RWQCB for review and comment. As part of its review of the SMP, the ACWD shall also review the design of long-term drainage and stormwater treatment plans. The project sponsor shall incorporate all recommendations and requirements from the ACWD into the SMP and drainage/stormwater treatment plans as appropriate. As the oversight agency, the RWQCB shall provide the project sponsor with comments on the SMP. Prior to issuance of the grading permit, the project sponsor shall provide the City with a copy of the approved SMP and implement the SMP during site preparation and grading under the approving agency's oversight at the project sponsor's cost.							

¹ Recommendations would depend on the type of features or contaminant(s) encountered and extent of contamination and the media affected.

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<p>Mitigation Measure HAZ-2b: Engineering Controls on the Project Site</p> <p>Prior to the issuance of grading permits, the project sponsor shall demonstrate compliance with the recommendations in the Step-out Soil Gas Assessment (ENGEO 2013) to address vapor intrusion concerns. Implementation of engineering controls shall be implemented on the project site in accordance with the Step-out Soil Gas Assessment (ENGEO 2013) to address the presence of elevated VOCs (in areas where TCE and PCE concentrations exceeded residential screening levels). Engineering controls shall be installed to redirect and or minimize VOC concentrations. Said engineering controls shall consist of controls that allow for appropriate ventilation and discharge of the vapors into the atmosphere.</p> <p>Specific engineering controls may include, but will not be limited to:</p> <ul style="list-style-type: none"> • Installation of subsurface migration barriers; and/or • Inclusion of ventilated foundations for any proposed structures; and/or • The use and implementation of an alternative method or structural design that would address soil gas releases and reduce the potential for hazardous conditions to occur. <p>Appropriate engineering control system(s) shall be determined with concurrence, approval, and oversight of the DTSC and RWQCB (as applicable) and shall be dependent on future building placement and construction. Any DTSC requirements for long-term operation, monitoring, and maintenance (OMM) of the vapor mitigation systems shall be complied with, including any requirements to secure the cost of such OMM with a financial security instrument such as a performance bond. Any land use covenant required</p>	Project applicant to provide to City plans that depict incorporation of all recommendations from the Step-out Soil Gas Assessment for review and approval.	Prior to issuance of grading permit/improvement plan approvals, and building permit for each building.	Per building/grading permit issuance	Planning Division, and Public Works Department, RWQCB, and DTSC			

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<p>by DTSC to ensure the long-term efficacy of the vapor mitigation systems shall be recorded in property title records by the project sponsor or successor owner. If monitoring or extraction wells remain in place at the time that engineering controls are submitted to DTSC and RWQCB, the placement of such engineering controls shall either not interfere with operation of the well facilities, or DTSC and/or RWQCB shall have approved any required modifications to the well facilities.</p> <p>Prior to project grading, the project sponsor shall enter into a voluntary oversight agreement (or CLRRRA agreement) with DTSC and submit for DTSC's approval a remedial plan for the evaluation and removal of known hazardous substances present in soil. The remedial plan shall specify risk-based screening levels appropriate for future residential use (in the residential areas) and for commercial use (in the commercial areas). The project sponsor shall implement the approved remedial plan under DTSC's oversight. Confirmation sampling shall document that all soil exceeding the screening levels has been successfully removed. Prior to commencement of project grading, DTSC shall have issued written concurrence that known soil contamination has been satisfactorily addressed. The project sponsor shall provide a copy of DTSC's written concurrence to the City.</p>							
<p>Mitigation Measure HAZ-2c: Conduct a Hazardous Building Materials Survey prior to Demolition Activities</p> <p>Prior to the issuance of a demolition permit, a comprehensive Hazardous Building Materials Assessment shall be conducted by a licensed contractor prior to demolition activities associated with the project. Should this assessment determine that lead-based paint, treated-wood waste, and/or asbestos or other</p>	Project applicant to conduct and submit to City the Hazardous Building Materials Assessment and Health and Safety Plan for review and approval.	Prior to issuance of demolition permits.	Per demolition permit issuance	Planning Division, Public Works Department, and BAAQMD.			

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<p>hazardous building materials are present, the following actions shall be implemented:</p> <ul style="list-style-type: none"> • A health and safety plan shall be developed by a certified industrial hygienist for potential lead-based paint, asbestos or other hazardous building materials risks present during demolition. The health and safety plan shall then be implemented by a licensed contractor. • Both the federal Occupational Safety and Health Administration (OSHA) and the California Occupational Safety and Health Administration (Cal/OSHA) regulate worker exposure during construction activities that affect lead-based paint. The Interim Final Rule found in 29 Code of Federal Regulations, Part 1926.62 covers construction work in which employees may be exposed to lead during such activities as demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance. • Acquire necessary approvals from the City and/or County for specifications or commencement of abatement activities. Abatement activities shall be conducted by a licensed contractor. • Prior to demolition of construction debris containing asbestos the Bay Area Air Quality Management District (BAAQMD) shall be notified ten days prior to initiating construction and demolition activities. Demolition permit submittal to the City shall include BAAQMD Asbestos Demolition/Renovation job number (J#) and related BAAQMD acknowledgement letter. • Asbestos shall be disposed of at a licensed disposal facility. Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated 							

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<p>compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos.</p> <ul style="list-style-type: none">• The local office of the Cal/OSHA shall be notified of asbestos abatement activities.• Asbestos abatement contractors shall follow State regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos containing material.• Asbestos removal contractors shall be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur shall have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services in Sacramento.• Contractors and subcontractors shall comply with Union City Municipal Code 13.42.050 in performing a priority building materials screening assessment. <p>The contractor and hauler of hazardous building materials shall file a Hazardous Waste Manifest that details the hauling of the material from the site and the disposal of it. Pursuant to California law, the City of Union City shall not issue the required permit until the applicant has complied with the notice requirements described above.</p>							
Noise and Vibration							
<p>Mitigation Measure NOI-1a: Construction Noise Control Plan</p> <p>Prior to demolition or grading permit issuance, the project applicant shall submit a noise control plan to reduce construction noise levels such that project construction noise would be in compliance with the City’s Community Noise Ordinance, as determined by a qualified acoustical consultant, for approval by the</p>	<p>Project applicant and/or contractor(s) to submit a construction noise control plan to City to ensure that noise levels from construction will comply with the</p>	<p>Prior to issuance of first grading or demolition permit.</p>	<p>Once</p>	<p>Planning Division, Building Division, Public Works Department.</p>			

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<p>Economic and Community Development Department. The plan shall require one of the following measures in order to achieve this result:</p> <ul style="list-style-type: none"> Noise producing construction activities shall be restricted to the hours of 8:00 a.m. to 8:00 p.m. during weekdays; 9:00 a.m. to 8:00 p.m. on Saturdays; and 10:00 a.m. to 6:00 p.m. on Sundays and holidays. In addition, permitted construction activities shall meet at least one of the following noise limitations: <ul style="list-style-type: none"> No individual piece of equipment shall be permitted to produce a noise level exceeding 83 dBA as measured at a distance of 25 feet. This could be achieved in a variety of ways, including but not limited to selecting quieter equipment that generates noise levels of less than 83 dBA L_{max} at a distance of 25 feet, or incorporating sound muffling devices on construction equipment; <p>OR</p> <ul style="list-style-type: none"> The noise levels at any point outside the property plane² of the project shall not exceed 86 dBA. This could be achieved in a variety of ways, including but not limited to ensuring equipment is operating at sufficient distances from the edge of the project site property line, incorporating sound muffling devices on construction equipment, or utilizing temporary noise barriers to reduce construction noise when construction equipment must be in proximity to the edge of the property line (particularly near noise-sensitive land uses). 	City's daytime and nighttime noise standards.						

² For the purposes of this analysis, the "property plane" is assumed to be the boundaries of the project site.

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<ul style="list-style-type: none">• All construction equipment shall have appropriate sound muffling devices, which shall be properly maintained and used at all times such equipment is in operation.• The project contractor shall place all stationary construction equipment so that emitted noise is directed away from the closest off-site sensitive receptors.• The construction contractor shall locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and the noise-sensitive receptors closest to the project construction areas.• A publicly visible sign shall be posted with the telephone number and contact information for the designated on-site construction manager available to receive and respond to noise complaints. This person shall report all complaints to the City of Union City Public Works Department.							
Mitigation Measure NOI-1b: Operational Equipment Noise Control Plan An Operational Equipment Noise Control Plan shall be prepared prior to issuance of the first City-issued building permit for the proposed development for approval by the Building Division. The plan shall include a noise analysis for the project that evaluates HVAC and other stationary mechanical equipment with the potential to generate noise levels in excess of ambient noise levels by 10 dB on new residential properties and by 12 dB on new commercial properties. The analysis shall be prepared by persons qualified in acoustical analysis and/or engineering and demonstrate with reasonable certainty that the operational noise sources associated with the project would not result in a	Project applicant to provide to City the analysis and plans that depict incorporation of all recommendations from the analysis to reduce noise from the project equipment to the levels outlined in the City’s noise standards.	Prior to issuance of first building permit.	Once	Planning Division, Building Division			

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noise level that would be in excess of the Community Noise Ordinance. All recommendations from the acoustical analysis necessary for ensuring that noise sources would meet applicable requirements of the noise ordinance and would not result in 10 dB (for sources on residential properties) or 12 dB (for sources on commercial properties) increases in ambient noise levels shall be incorporated into plans submitted for building permit issuance and building operation.							