Appendix A

City of Oakland
Approval of Original 2017 Project, and Approval of Minor Modification to the Original Design for the 7th and Campbell Mixed Use Project, including Conditions of Approval and Mitigation Monitoring and Reporting Program (SCAMMRP), July 21, 2020

CITY OF OAKLAND

DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA • SUITE 3315 • OAKLAND, CALIFORNIA 94612

Planning and Building Department
Bureau of Planning

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September 15, 2017

Elaine Brown
Oakland and the World Enterprises, Inc.
1111 Broadway, 24th Floor
Oakland, CA 94607

RE: PLN16056; 0 7th Street; APNs: 006 0017017, 006 0017018, 006 0017019, 006 0017020, 006 0017021, 006 001702200

Dear Ms. Brown:

Your application, as described below, has been **APPROVED** for the reasons stated in Attachment A, which contains the findings required to support this decision. Attachment B contains the Conditions of Approval for the project. This decision is effective ten (10) days after the date of this letter unless appealed as explained below. The following table summarizes the proposed project:

Proposal:	To construct a six-story residential and commercial facility. The project includes 79 affordable housing units and 24,000 square feet of commercial floor area. The project includes an affordable housing density bonus of 35 percent and affordable housing waivers for number of parking spaces, building height and setback in the RM-2 zone. The project includes job training services and an urban farm.
Planning Permits Required:	Regular Design Review for new construction of a building.
General Plan:	Community Commercial
Zoning:	CC-2
Environmental Determination:	A detailed CEQA Analysis was prepared for this project that concluded that the project satisfies CEQA (Public Resources Code 21166) and CEQA Guidelines: A CEQA Checklist demonstrates that the potential project-specific environmental effects of the Project were adequately covered by the WOSP EIR, such that CEQA exemptions and streamlining provisions apply to the Project. The Project satisfies the CEQA provisions that provide for no further environmental review as a Project Consistent with a Community Plan and Zoning (CEQA Guidelines Section 15183), for CEQA streamlining as a qualified Infill Project (CEQA Guidelines 15183.3), and for an exemption form CEQA as an Urban Infill project (CEQA Guidelines Section 15332). No exceptions preclude these CEQA exemptions and streamlining provisions, based on the evidence presented in a completed CEQA Checklist
Historic Status:	ASI: 7th Street Commercial, OCHS Rating: Dc2*
City Council District:	3

If you, or any interested party, seeks to challenge this decision, an appeal **must** be filed by no later than ten calendar (10) days from the date of this letter, by **4:00 pm on 9/25/17**. An appeal shall be on a form provided by the Planning and Zoning Division of the Community and Economic Development Agency, and submitted to the same at 250 Frank H. Ogawa Plaza, Suite 2114, to the attention of **Neil Gray, Planner IV**. The appeal shall state specifically wherein it is

claimed there was error or abuse of discretion by the Zoning Manager or wherein his/her decision is not supported by substantial evidence and must include payment of $1622.57 in accordance with the City of Oakland Master Fee Schedule. Failure to timely appeal will preclude you, or any interested party, from challenging the City's decision in court. The appeal itself must raise each issue that is contested, along with all the arguments and evidence in the record which supports the basis of the appeal; failure to do so may preclude you, or any interested party, from raising such issues during the appeal and/or in court. However, the appeal will be limited to issues and/or evidence presented to the Zoning Manager prior to the close of the previously noticed public comment period on the matter.

A signed Notice of Exemption (NOE) is enclosed certifying that the project has been found to be exempt from CEQA review. It is your responsibility to record the NOE and the Environmental Declaration at the Alameda County Clerk's office at 1106 Madison Street, Oakland, CA 94612, at a cost of $50.00 made payable to the Alameda County Clerk. Please bring the original NOE related documents and five copies to the Alameda County Clerk, and return one date stamped copy to the Zoning Division, to the attention of **Neil Gray, Planner IV**. Pursuant to Section 15062(d) of the California Environmental Quality Act (CEQA) Guidelines, recordation of the NOE starts a 35-day statute of limitations on court challenges to the approval under CEQA.

If you have any questions, please contact the case planner, **Neil Gray, Planner IV** at **(510) 238-3878** or **ngray@oaklandnet.com,** however, this does not substitute for filing of an appeal as described above.

Very Truly Yours,

SCOTT MILLER
Zoning Manager

cc: Bill Quesada, Inspection Services
Public Works /Tree Section

Attachments:

A. Findings
B. Conditions of Approval, including Standard Conditions of Approvals

ATTACHMENT A: FINDINGS

This proposal meets all the required findings under the in the Oakland Planning Code (OMC Title 17) as set forth below, which are required to approve your application. Required findings are shown in **bold** type; reasons your proposal satisfies are shown in normal type.

A. For Residential Facilities.

1. That the proposed design will create a building or set of buildings that are well related to the surrounding area in their setting, scale, bulk, height, materials, and textures;

Context: The segment of 7th Street directly faces elevated BART tracks and contains a mix of historic storefronts with second story apartments, vacant lots, and a contemporary styled mixed-use building, which is adjacent to the site. The site is across the street from the West Oakland BART Station and a large institutional building that houses a distribution center for the United States Postal Service. The Office of Cultural Survey has designated this neighborhood an Area of Secondary Importance due to 7th Street's history as a vibrant commercial and cultural center for West Oakland in the mid-20th Century. Although some buildings have retained historic details, most of the storefronts are covered over, in disrepair or underutilized. The neighboring contemporary structure has an intact and occupied ground floor commercial presence. A mix of single family homes and small multi-unit building are behind the development.

Proposal: The proposal relates to the context of the district through the following design features:

- As conditioned, the ground floor storefront design will continue the 7th Street's traditional commercial character. At 14 feet, the prominent ground floor height will frame a pedestrian scale at the sidewalk. The transom windows and a bulkhead adjacent to the sidewalk will provide traditional storefront elements. Floor-to-ceiling storefront windows will provide visual interest for pedestrians on 7th Street.
- The recess above the ground floor on the south (7th Street) elevation will relate to the lower-scaled buildings in the commercial district. The upper story decks in the center of the 7th Street elevation masses the building into two smaller volumes to further relate to the scale of the neighborhood.
- The building is set back approximately one foot for each foot that it extends above 30 feet at the 15-foot rear setback line. This rear yard recess creates an appropriate transition and preserve solar access to the lower density homes behind the proposal.
- The window placement, window type, and material changes at the 7th Street and Campbell Street elevations creates successful compositions and further reduces the scale of the building.
- Additional height and contrasting materials on the east (Campbell Street) elevation at the corner of the building emphasizes the intersection at 7th and Campbells Streets.
- The metal siding on the 7th Street elevation will harmonize with the West Oakland's industrial context.

2. That the proposed design will protect, preserve, or enhance desirable neighborhood characteristics;

The proposal will enhance and continue the existing storefront pattern on 7th Street and add 79 affordable dwelling units near the BART Station. The commercial space and urban farm will also be used for job training for residents of the neighborhood.

3. That the proposed design will be sensitive to the topography and landscape;

The site is flat and without existing landscaping or trees.

4. That, if situated on a hill, the design and massing of the proposed building relates to the grade of the hill;

The site is not located on a hill.

5. **That the proposed design conforms in all significant respects with the Oakland General Plan and with any applicable design review guidelines or criteria, district plan, or development control map which have been adopted by the Planning Commission or City Council.**

The site is designated the Community Commercial in the Land Use and Transportation Element of the General Plan (LUTE). This designation intends to identify, create, maintain, and enhance areas suitable for a wide variety of commercial and institutional operations along the City's major corridors and in shopping districts or centers. According the LUTE: Community Commercial areas may include neighborhood center uses and larger scale retail and commercial uses, such as auto related businesses, business and personal service, health services and medical uses, educational facilities and entertainment uses. Community Commercial areas can be complemented by the addition of urban residential develop and compatible mixed use development.

The construction of a mixed-use building with 24,000 square feet of commercial space and 79 residential units is consistent with this intent. The proposal is also consistent with the following LUTE policies:

- Policy I/C3.3 Clustering in Nodes
- Policy I/C3.4 Strengthening Vitality
- Policy T2.2 Guiding Transit Oriented Development
- Policy N2.5 Designing Commercial Development
- Policy N4.2 Advocating for Affordable Housing

The vision for the 7th Street Opportunity Area in the West Oakland Specific Plan (WOSP) includes higher-density housing, commercial office and government/institutional office space around the core of the BART Station, and neighborhood-serving retail as well as custom manufacturing/industrial arts/artist exhibition space on the ground floor. The subject site is considered an "Opportunity Site" by the WOSP and is consistent with the vision of higher density housing and neighborhood serving commercial businesses on 7th Street.

B. For Nonresidential Facilities and Signs.

1. **That the proposal will help achieve or maintain a group of facilities which are well related to one another and which, when taken together, will result in a well-composed design, with consideration given to site, landscape, bulk, height, arrangement, texture, materials, colors, and appurtenances; the relation of these factors to other facilities in the vicinity; and the relation of the proposal to the total setting as seen from key points in the surrounding area. Only elements of design which have some significant relationship to outside appearance shall be considered, except as otherwise provided in Section 17.136.060;**

As conditioned, the ground floor storefront design will continue the 7th Street's traditional commercial character. At 14 feet, the prominent ground floor height will frame a pedestrian scale at the sidewalk. The proposed transom windows and, as conditioned, a bulkhead adjacent to the sidewalk will provide traditional storefront elements. The proposed floor-to-ceiling storefront windows will provide visual interest for pedestrians on 7th Street.

2. **That the proposed design will be of a quality and character which harmonizes with, and serves to protect the value of, private and public investments in the area;**

The high residential density and 24,000 square feet of commercial space will increase riders using the West Oakland BART transit hub. As mentioned, the ground floor will enhance the existing commercial presence on 7th Street. Providing the garage entrance on Campbell Street will decrease pedestrian/automobile conflict and protect the significant infrastructure and public art investments that have been made on 7th Street. As described in Finding A(1), the project has a high quality design that will harmonize with the neighborhood.

3. **That the proposed design conforms in all significant respects with the Oakland General Plan and with any applicable design review guidelines or criteria, district plan, or development control map which have been adopted by the Planning Commission or City Council.**

See Finding A(5), above.

ATTACHMENT B: CONDITIONS OF APPROVAL

The proposal is hereby approved subject to the following Conditions of Approval:

Part 1: Standard Conditions of Approval – General Administrative Conditions

1. **Approved Use**

   The project shall be constructed and operated in accordance with the authorized use as described in the approved application materials, and the approved plans dated May 5, 2016, as amended by the following conditions of approval and mitigation measures, if applicable ("Conditions of Approval" or "Conditions").

2. **Effective Date, Expiration, Extensions and Extinguishment**

   This Approval shall become effective immediately, unless the Approval is appealable, in which case the Approval shall become effective in ten calendar days unless an appeal is filed. Unless a different termination date is prescribed, this Approval shall expire **two years** from the Approval date, or from the date of the final decision in the event of an appeal, unless within such period all necessary permits for construction or alteration have been issued, or the authorized activities have commenced in the case of a permit not involving construction or alteration. Upon written request and payment of appropriate fees submitted no later than the expiration date of this Approval, the Director of City Planning or designee may grant a one-year extension of this date, with additional extensions subject to approval by the approving body. Expiration of any necessary building permit or other construction-related permit for this project may invalidate this Approval if said Approval has also expired. If litigation is filed challenging this Approval, or its implementation, then the time period stated above for obtaining necessary permits for construction or alteration and/or commencement of authorized activities is automatically extended for the duration of the litigation.

3. **Compliance with Other Requirements**

   The project applicant shall comply with all other applicable federal, state, regional, and local laws/codes, requirements, regulations, and guidelines, including but not limited to those imposed by the City's Bureau of Building, Fire Marshal, and Public Works Department. Compliance with other applicable requirements may require changes to the approved use and/or plans. These changes shall be processed in accordance with the procedures contained in Condition #4.

4. **Minor and Major Changes**

   a. Minor changes to the approved project, plans, Conditions, facilities, or use may be approved administratively by the Director of City Planning

   b. Major changes to the approved project, plans, Conditions, facilities, or use shall be reviewed by the Director of City Planning to determine whether such changes require submittal and approval of a revision to the Approval by the original approving body or a new independent permit/approval. Major revisions shall be reviewed in accordance with the procedures required for the original permit/approval. A new independent permit/approval shall be reviewed in accordance with the procedures required for the new permit/approval.

5. **Compliance with Conditions of Approval**

a. The project applicant and property owner, including successors, (collectively referred to hereafter as the "project applicant" or "applicant") shall be responsible for compliance with all the Conditions of Approval and any recommendations contained in any submitted and approved technical report at his/her sole cost and expense, subject to review and approval by the City of Oakland.

b. The City of Oakland reserves the right at any time during construction to require certification by a licensed professional at the project applicant's expense that the as-built project conforms to all applicable requirements, including but not limited to, approved maximum heights and minimum setbacks. Failure to construct the project in accordance with the Approval may result in remedial reconstruction, permit revocation, permit modification, stop work, permit suspension, or other corrective action.

c. Violation of any term, Condition, or project description relating to the Approval is unlawful, prohibited, and a violation of the Oakland Municipal Code. The City of Oakland reserves the right to initiate civil and/or criminal enforcement and/or abatement proceedings, or after notice and public hearing, to revoke the Approval or alter these Conditions if it is found that there is violation of any of the Conditions or the provisions of the Planning Code or Municipal Code, or the project operates as or causes a public nuisance. This provision is not intended to, nor does it, limit in any manner whatsoever the ability of the City to take appropriate enforcement actions. The project applicant shall be responsible for paying fees in accordance with the City's Master Fee Schedule for inspections conducted by the City or a City-designated third-party to investigate alleged violations of the Approval or Conditions.

6. **Signed Copy of the Approval/Conditions**

A copy of the Approval letter and Conditions shall be signed by the project applicant, attached to each set of permit plans submitted to the appropriate City agency for the project, and made available for review at the project job site at all times.

7. **Blight/Nuisances**

The project site shall be kept in a blight/nuisance-free condition. Any existing blight or nuisance shall be abated within 60 days of approval, unless an earlier date is specified elsewhere.

8. **Indemnification**

a. To the maximum extent permitted by law, the project applicant shall defend (with counsel acceptable to the City), indemnify, and hold harmless the City of Oakland, the Oakland City Council, the Oakland Redevelopment Successor Agency, the Oakland City Planning Commission, and their respective agents, officers, employees, and volunteers (hereafter collectively called "City") from any liability, damages, claim, judgment, loss (direct or indirect), action, causes of action, or proceeding (including legal costs, attorneys' fees, expert witness or consultant fees, City Attorney or staff time, expenses or costs) (collectively called "Action") against the City to attack, set aside, void or annul this Approval or implementation of this Approval. The City may elect, in its sole discretion, to participate in the defense of said Action and the project applicant shall reimburse the City for its reasonable legal costs and attorneys' fees.

b. Within ten (10) calendar days of the filing of any Action as specified in subsection (a) above, the project applicant shall execute a Joint Defense Letter of Agreement with the City, acceptable to the Office of the City Attorney, which memorializes the above obligations. These obligations and the Joint Defense Letter of Agreement shall survive termination, extinguishment, or invalidation of the

Approval. Failure to timely execute the Letter of Agreement does not relieve the project applicant of any of the obligations contained in this Condition or other requirements or Conditions of Approval that may be imposed by the City.

9. Severability

The Approval would not have been granted but for the applicability and validity of each and every one of the specified Conditions, and if one or more of such Conditions is found to be invalid by a court of competent jurisdiction this Approval would not have been granted without requiring other valid Conditions consistent with achieving the same purpose and intent of such Approval.

10. Special Inspector/Inspections, Independent Technical Review, Project Coordination and Monitoring

The project applicant may be required to cover the full costs of independent third-party technical review and City monitoring and inspection, including without limitation, special inspector(s)/inspection(s) during times of extensive or specialized plan-check review or construction, and inspections of potential violations of the Conditions of Approval. The project applicant shall establish a deposit with the Bureau of Building, if directed by the Building Official, Director of City Planning, or designee, prior to the issuance of a construction-related permit and on an ongoing as-needed basis.

11. Public Improvements

The project applicant shall obtain all necessary permits/approvals, such as encroachment permits, obstruction permits, curb/gutter/sidewalk permits, and public improvement ("p-job") permits from the City for work in the public right-of-way, including but not limited to, streets, curbs, gutters, sidewalks, utilities, and fire hydrants. Prior to any work in the public right-of-way, the applicant shall submit plans for review and approval by the Bureau of Planning, the Bureau of Building, and other City departments as required. Public improvements shall be designed and installed to the satisfaction of the City.

12. Compliance Matrix

The project applicant shall submit a Compliance Matrix, in both written and electronic form, for review and approval by the Bureau of Planning and the Bureau of Building that lists each Condition of Approval (including each mitigation measure if applicable) in a sortable spreadsheet. The Compliance Matrix shall contain, at a minimum, each required Condition of Approval, when compliance with the Condition is required, and the status of compliance with each Condition. For multi-phased projects, the Compliance Matrix shall indicate which Condition applies to each phase. The project applicant shall submit the initial Compliance Matrix prior to the issuance of the first construction-related permit and shall submit an updated matrix upon request by the City.

13. Construction Management Plan

Prior to the issuance of the first construction-related permit, the project applicant and his/her general contractor shall submit a Construction Management Plan (CMP) for review and approval by the Bureau of Planning, Bureau of Building, and other relevant City departments such as the Fire Department and the Public Works Department as directed. The CMP shall contain measures to minimize potential construction impacts including measures to comply with all construction-related Conditions of Approval (and mitigation measures if applicable) such as dust control, construction emissions, hazardous materials, construction days/hours, construction traffic control, waste reduction and recycling, stormwater pollution prevention, noise control, complaint management, and cultural resource management (see applicable Conditions below). The CMP shall provide project-specific information including descriptive procedures, approval documentation, and drawings (such as a site logistics plan, fire safety plan, construction phasing

plan, proposed truck routes, traffic control plan, complaint management plan, construction worker parking plan, and litter/debris clean-up plan) that specify how potential construction impacts will be minimized and how each construction-related requirement will be satisfied throughout construction of the project.

Part 2: Standard Conditions of Approval – Environmental Protection Measures

GENERAL

14. Regulatory Permits and Authorizations from Other Agencies

Requirement: The project applicant shall obtain all necessary regulatory permits and authorizations from applicable resource/regulatory agencies including, but not limited to, the Regional Water Quality Control Board, Bay Area Air Quality Management District, Bay Conservation and Development Commission, California Department of Fish and Wildlife, U. S. Fish and Wildlife Service, and Army Corps of Engineers and shall comply with all requirements and conditions of the permits/authorizations. The project applicant shall submit evidence of the approved permits/authorizations to the City, along with evidence demonstrating compliance with any regulatory permit/authorization conditions of approval.

When Required: Prior to activity requiring permit/authorization from regulatory agency

Initial Approval: Approval by applicable regulatory agency with jurisdiction; evidence of approval submitted to Bureau of Planning

Monitoring/Inspection: Applicable regulatory agency with jurisdiction

AESTHETICS

15. Graffiti Control

Requirement:

a. During construction and operation of the project, the project applicant shall incorporate best management practices reasonably related to the control of graffiti and/or the mitigation of the impacts of graffiti. Such best management practices may include, without limitation:
   i. Installation and maintenance of landscaping to discourage defacement of and/or protect likely graffiti-attracting surfaces.
   ii. Installation and maintenance of lighting to protect likely graffiti-attracting surfaces.
   iii. Use of paint with anti-graffiti coating.
   iv. Incorporation of architectural or design elements or features to discourage graffiti defacement in accordance with the principles of Crime Prevention Through Environmental Design (CPTED).
   v. Other practices approved by the City to deter, protect, or reduce the potential for graffiti defacement.

b. The project applicant shall remove graffiti by appropriate means within seventy-two (72) hours. Appropriate means include the following:
   i. Removal through scrubbing, washing, sanding, and/or scraping (or similar method) without damaging the surface and without discharging wash water or cleaning detergents into the City storm drain system.

ii. Covering with new paint to match the color of the surrounding surface.

iii. Replacing with new surfacing (with City permits if required).

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

16. Landscape Plan

a. Landscape Plan Required

Requirement: The project applicant shall submit a final Landscape Plan for City review and approval that is consistent with the approved Landscape Plan. The Landscape Plan shall be included with the set of drawings submitted for the construction-related permit and shall comply with the landscape requirements of chapter 17.124 of the Planning Code.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: N/A

b. Landscape Installation

Requirement: The project applicant shall implement the approved Landscape Plan unless a bond, cash deposit, letter of credit, or other equivalent instrument acceptable to the Director of City Planning, is provided. The financial instrument shall equal the greater of $2,500 or the estimated cost of implementing the Landscape Plan based on a licensed contractor's bid.

When Required: Prior to building permit final

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

c. Landscape Maintenance

Requirement: All required planting shall be permanently maintained in good growing condition and, whenever necessary, replaced with new plant materials to ensure continued compliance with applicable landscaping requirements. The property owner shall be responsible for maintaining planting in adjacent public rights-of-way. All required fences, walls, and irrigation systems shall be permanently maintained in good condition and, whenever necessary, repaired or replaced.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

17. Lighting

Requirement: Proposed new exterior lighting fixtures shall be adequately shielded to a point below the light bulb and reflector to prevent unnecessary glare onto adjacent properties.

When Required: Prior to building permit final

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

AIR QUALITY

18. Construction-Related Air Pollution Controls (Dust and Equipment Emissions)

Requirement: The project applicant shall implement all of the following applicable air pollution control measures during construction of the project:

a. Water all exposed surfaces of active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever feasible.

b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).

c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d. Pave all roadways, driveways, sidewalks, etc. within one month of site grading or as soon as feasible. In addition, building pads should be laid within one month of grading or as soon as feasible unless seeding or soil binders are used.

e. Enclose, cover, water twice daily, or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).

f. Limit vehicle speeds on unpaved roads to 15 miles per hour.

g. Idling times on all diesel-fueled commercial vehicles over 10,000 lbs. shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations). Clear signage to this effect shall be provided for construction workers at all access points.

h. Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes and fleet operators must develop a written policy as required by Title 23, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations").

i. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

j. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available and it is not feasible to use propane or natural gas.

k. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

l. All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph.

m. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.

n. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).

o. Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.

p. Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize wind blown dust. Wind breaks must have a maximum 50 percent air porosity.

q. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

r. Activities such as excavation, grading, and other ground-disturbing construction activities shall be phased to minimize the amount of disturbed surface area at any one time.

s. All trucks and equipment, including tires, shall be washed off prior to leaving the site.

t. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.

u. All equipment to be used on the construction site and subject to the requirements of Title 13, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations") must meet emissions and performance requirements one year in advance of any fleet deadlines. Upon request by the City, the project applicant shall provide written documentation that fleet requirements have been met.

v. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings).

w. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM.

x. Off-road heavy diesel engines shall meet the California Air Resources Board's most recent certification standard.

y. Post a publicly-visible large on-site sign that includes the contact name and phone number for the project complaint manager responsible for responding to dust complaints and the telephone numbers of the City's Code Enforcement unit and the Bay Area Air Quality Management District. When contacted, the project complaint manager shall respond and take corrective action within 48 hours.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

19. Exposure to Air Pollution (Toxic Air Contaminants)

a. Health Risk Reduction Measures

Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants. The project applicant shall choose one of the following methods:

i. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents/occupants/users to air pollutants. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes that the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

- or -

ii. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:

- Installation of air filtration to reduce cancer risks and Particulate Matter (PM) exposure for residents and other sensitive populations in the project that are in close proximity to sources of air pollution. Air filter devices shall be rated MERV-16 or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.
- Where appropriate, install passive electrostatic filtering systems, especially those with low air velocities (i.e., 1 mph).
- Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible.
- The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall be located as far away as feasible from a loading dock or where trucks concentrate to deliver goods.
- Sensitive receptors shall be located on the upper floors of buildings, if feasible.
- Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (*Pinus nigra* var. *maritima*), Cypress (*X Cupressocyparis leylandii*), Hybrid popular (*Populus deltoids X trichocarpa*), and Redwood *(Sequoia sempervirens*).
- Sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible.
- Existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible.
- Emissions from diesel trucks shall be reduced through implementing the following measures, if feasible:
  - Installing electrical hook-ups for diesel trucks at loading docks.
  - Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards.
  - Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels.
  - Prohibiting trucks from idling for more than two minutes.
  - Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

b. Maintenance of Health Risk Reduction Measures

Requirement: The project applicant shall maintain, repair, and/or replace installed health risk reduction measures, including but not limited to the HVAC system (if applicable), on an ongoing and as-needed basis. Prior to occupancy, the project applicant shall prepare and then distribute to the building manager/operator an operation and maintenance manual for the HVAC system and filter including the maintenance and replacement schedule for the filter.

When Required: Ongoing
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

20. Stationary Sources of Air Pollution (Toxic Air Contaminants)

Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to on-site stationary sources of toxic air contaminants. The project applicant shall choose one of the following methods:

a. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk associated with proposed stationary sources of pollution in the project. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

- or -

b. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:
   i. Installation of non-diesel fueled generators, if feasible, or;
   ii. Installation of diesel generators with an EPA-certified Tier 4 engine or engines that are retrofitted with a CARB Level 3 Verified Diesel Emissions Control Strategy, if feasible.

When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

21. Asbestos in Structures

Requirement: The project applicant shall comply with all applicable laws and regulations regarding demolition and renovation of Asbestos Containing Materials (ACM), including but not limited to California Code of Regulations, Title 8; California Business and Professions Code, Division 3; California Health and Safety Code sections 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended. Evidence of compliance shall be submitted to the City upon request.

When Required: Prior to approval of construction-related permit
Initial Approval: Applicable regulatory agency with jurisdiction
Monitoring/Inspection: Applicable regulatory agency with jurisdiction

CULTURAL RESOURCES

22. Archaeological and Paleontological Resources – Discovery During Construction

Requirement: Pursuant to CEQA Guidelines section 15064.5(f), in the event that any historic or prehistoric subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant shall notify the City and consult with a qualified archaeologist or paleontologist, as applicable, to assess the significance of the find. In the case of discovery of paleontological resources, the assessment shall be done in accordance with the Society of Vertebrate Paleontology standards. If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by the City must be followed unless avoidance is determined unnecessary or infeasible by the City. Feasibility of avoidance shall be determined with consideration of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. Work may proceed on other parts of the project site while measures for the cultural resources are implemented.

In the event of data recovery of archaeological resources, the project applicant shall submit an Archaeological Research Design and Treatment Plan (ARDTP) prepared by a qualified archaeologist for review and approval by the City. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practicable. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant. The project applicant shall implement the ARDTP at his/her expense.

In the event of excavation of paleontological resources, the project applicant shall submit an excavation plan prepared by a qualified paleontologist to the City for review and approval. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by a qualified paleontologist, as appropriate, according to current professional standards and at the expense of the project applicant.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

23. Archaeologically Sensitive Areas – Pre-Construction Measures

Requirement: The project applicant shall implement either Provision A (Intensive Pre-Construction Study) or Provision B (Construction ALERT Sheet) concerning archaeological resources.

Provision A: Intensive Pre-Construction Study.

The project applicant shall retain a qualified archaeologist to conduct a site-specific, intensive archaeological resources study for review and approval by the City prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence of history-period archaeological resources on the project site. At a minimum, the study shall include:

a. Subsurface presence/absence studies of the project site. Field studies may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources.
b. A report disseminating the results of this research.

c. Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources.

If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction and prepare an ALERT sheet pursuant to Provision B below that details what could potentially be found at the project site. Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the ALERT sheet, required per Provision B below) and the procedures to follow if any artifacts are encountered, field recording and sampling in accordance with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation, notifying the appropriate officials if human remains or cultural resources are discovered, and preparing a report to document negative findings after construction is completed if no archaeological resources are discovered during construction.

Provision B: Construction ALERT Sheet.

The project applicant shall prepare a construction "ALERT" sheet developed by a qualified archaeologist for review and approval by the City prior to soil-disturbing activities occurring on the project site. The ALERT sheet shall contain, at a minimum, visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the project's prime contractor, any project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving), and utility firms involved in soil-disturbing activities within the project site.

The ALERT sheet shall state, in addition to the basic archaeological resource protection measures contained in other standard conditions of approval, all work must stop and the City's Environmental Review Officer contacted in the event of discovery of the following cultural materials: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones. Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. The ALERT sheet shall also be posted in a visible location at the project site.

When Required: Prior to approval of construction-related permit; during construction

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

24. Human Remains – Discovery During Construction

Requirement: Pursuant to CEQA Guidelines section 15064.5(e)(1), in the event that human skeletal remains are uncovered at the project site during construction activities, all work shall immediately halt and the project applicant shall notify the City and the Alameda County Coroner. If the County Coroner determines that an investigation of the cause of death is required or that the remains are Native American, all work shall cease within 50 feet of the remains until appropriate arrangements are made. In the event that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of section 7050.5 of the California Health and Safety Code. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery,

determination of significance, and avoidance measures (if applicable) shall be completed expeditiously and at the expense of the project applicant.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

GEOLOGY AND SOILS

25. Construction-Related Permit(s)

Requirement: The project applicant shall obtain all required construction-related permits/approvals from the City. The project shall comply with all standards, requirements and conditions contained in construction-related codes, including but not limited to the Oakland Building Code and the Oakland Grading Regulations, to ensure structural integrity and safe construction.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

26. Soils Report

Requirement: The project applicant shall submit a soils report prepared by a registered geotechnical engineer for City review and approval. The soils report shall contain, at a minimum, field test results and observations regarding the nature, distribution and strength of existing soils, and recommendations for appropriate grading practices and project design. The project applicant shall implement the recommendations contained in the approved report during project design and construction.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

[The following condition applies to all projects located in an Earthquake Fault Zone per the State Alquist-Priolo Fault Zoning Act and OMC chap. 15.20 (staff can refer to the City's GIS map) and involve at least one of the following:

a. New structures (except single-family wood or steel frame dwellings not exceeding two stories and not located within 100 feet of a potentially active fault);

b. Major additions or alterations (defined as exceeding 50% of the value of the structure or 50% of the floor area of the structure); or

c. Subdivisions (except condominium subdivisions and subdivisions between existing buildings with no new structures).

NOTE: The report referenced in this condition is typically required prior to project approval.]

27. Earthquake Fault Zone

Requirement: The project applicant shall submit a site-specific fault location investigation, as defined in California Geological Survey Note 49 (as amended), prepared by a certified engineering geologist for City review and approval containing at a minimum the results of subsurface investigations, locations of hazardous faults adjacent to the project site, recommended setback distances of proposed structures from

hazardous faults, and additional recommended measures to accommodate warping and distributive deformation associated with faulting (e.g., strengthened foundations, engineering design, flexible utility connections). The project applicant shall implement the recommendations contained in the approved report during project design and construction.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

28. Seismic Hazards Zone (Landslide/Liquefaction)

Requirement: The project applicant shall submit a site-specific geotechnical report, consistent with California Geological Survey Special Publication 117 (as amended), prepared by a registered geotechnical engineer for City review and approval containing at a minimum a description of the geological and geotechnical conditions at the site, an evaluation of site-specific seismic hazards based on geological and geotechnical conditions, and recommended measures to reduce potential impacts related to liquefaction and/or slope stability hazards. The project applicant shall implement the recommendations contained in the approved report during project design and construction.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

HAZARDS AND HAZARDOUS MATERIALS

29. Hazardous Materials Related to Construction

Requirement: The project applicant shall ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to minimize potential negative effects on groundwater, soils, and human health. These shall include, at a minimum, the following:

a. Follow manufacture's recommendations for use, storage, and disposal of chemical products used in construction;

b. Avoid overtopping construction equipment fuel gas tanks;

c. During routine maintenance of construction equipment, properly contain and remove grease and oils;

d. Properly dispose of discarded containers of fuels and other chemicals;

e. Implement lead-safe work practices and comply with all local, regional, state, and federal requirements concerning lead (for more information refer to the Alameda County Lead Poisoning Prevention Program); and

f. If soil, groundwater, or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the project applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notifying the City and applicable regulatory agency(ies) and implementation of the actions described in the City's Standard Conditions of Approval, as necessary, to identify the nature and extent of contamination. Work shall not resume in

the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

30. Hazardous Building Materials and Site Contamination

*a. **Hazardous Building Materials Assessment***

Requirement: The project applicant shall submit a comprehensive assessment report to the Bureau of Building, signed by a qualified environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACMs), lead-based paint, polychlorinated biphenyls (PCBs), and any other building materials or stored materials classified as hazardous materials by State or federal law. If lead-based paint, ACMs, PCBs, or any other building materials or stored materials classified as hazardous materials are present, the project applicant shall submit specifications prepared and signed by a qualified environmental professional, for the stabilization and/or removal of the identified hazardous materials in accordance with all applicable laws and regulations. The project applicant shall implement the approved recommendations and submit to the City evidence of approval for any proposed remedial action and required clearances by the applicable local, state, or federal regulatory agency.

When Required: Prior to approval of demolition, grading, or building permits

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

*b. **Environmental Site Assessment Required***

Requirement: The project applicant shall submit a Phase I Environmental Site Assessment report, and Phase II Environmental Site Assessment report if warranted by the Phase I report, for the project site for review and approval by the City. The report(s) shall be prepared by a qualified environmental assessment professional and include recommendations for remedial action, as appropriate, for hazardous materials. The project applicant shall implement the approved recommendations and submit to the City evidence of approval for any proposed remedial action and required clearances by the applicable local, state, or federal regulatory agency.

When Required: Prior to approval of construction-related permit

Initial Approval: Applicable regulatory agency with jurisdiction

Monitoring/Inspection: Applicable regulatory agency with jurisdiction

*c. **Health and Safety Plan Required***

Requirement: The project applicant shall submit a Health and Safety Plan for the review and approval by the City in order to protect project construction workers from risks associated with hazardous materials. The project applicant shall implement the approved Plan.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

*d. **Best Management Practices (BMPs) Required for Contaminated Sites***

Requirement: The project applicant shall ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to minimize potential soil and groundwater hazards. These shall include the following:

i. Soil generated by construction activities shall be stockpiled on-site in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state, and federal requirements.

ii. Groundwater pumped from the subsurface shall be contained on-site in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

HYDROLOGY AND WATER QUALITY

31. Erosion and Sedimentation Control Measures for Construction

Requirement: The project applicant shall implement Best Management Practices (BMPs) to reduce erosion, sedimentation, and water quality impacts during construction to the maximum extent practicable. At a minimum, the project applicant shall provide filter materials deemed acceptable to the City at nearby catch basins to prevent any debris and dirt from flowing into the City's storm drain system and creeks.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

32. Erosion and Sedimentation Control Plan for Construction

a. Erosion and Sedimentation Control Plan Required

Requirement: The project applicant shall submit an Erosion and Sedimentation Control Plan to the City for review and approval. The Erosion and Sedimentation Control Plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading and/or construction operations. The Plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the City. The Plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: N/A

b. Erosion and Sedimentation Control During Construction

Requirement: The project applicant shall implement the approved Erosion and Sedimentation Control Plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Bureau of Building.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

33. NPDES C.3 Stormwater Requirements for Regulated Projects

a. Post-Construction Stormwater Management Plan Required

Requirement: The project applicant shall comply with the requirements of Provision C.3 of the Municipal Regional Stormwater Permit issued under the National Pollutant Discharge Elimination System (NPDES). The project applicant shall submit a Post-Construction Stormwater Management Plan to the City for review and approval with the project drawings submitted for site improvements, and shall implement the approved Plan during construction. The Post-Construction Stormwater Management Plan shall include and identify the following:

i. Location and size of new and replaced impervious surface;
ii. Directional surface flow of stormwater runoff;
iii. Location of proposed on-site storm drain lines;
iv. Site design measures to reduce the amount of impervious surface area;
v. Source control measures to limit stormwater pollution;
vi. Stormwater treatment measures to remove pollutants from stormwater runoff, including the method used to hydraulically size the treatment measures; and
vii. Hydromodification management measures, if required by Provision C.3, so that post-project stormwater runoff flow and duration match pre-project runoff.

When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning; Bureau of Building
Monitoring/Inspection: Bureau of Building

b. Maintenance Agreement Required

Requirement: The project applicant shall enter into a maintenance agreement with the City, based on the Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement, in accordance with Provision C.3, which provides, in part, for the following:

i. The project applicant accepting responsibility for the adequate installation/construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures being incorporated into the project until the responsibility is legally transferred to another entity; and
ii. Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water Quality Control Board, San Francisco Region, for the purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary.

The maintenance agreement shall be recorded at the County Recorder's Office at the applicant's expense.

When Required: Prior to building permit final

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

NOISE

34. Construction Days/Hours

Requirement: The project applicant shall comply with the following restrictions concerning construction days and hours:

a. Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday, except that pier drilling and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m.

b. Construction activities are limited to between 9:00 a.m. and 5:00 p.m. on Saturday. In residential zones and within 300 feet of a residential zone, construction activities are allowed from 9:00 a.m. to 5:00 p.m. only within the interior of the building with the doors and windows closed. No pier drilling or other extreme noise generating activities greater than 90 dBA are allowed on Saturday.

c. No construction is allowed on Sunday or federal holidays.

Construction activities include, but are not limited to, truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.

Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the City, with criteria including the urgency/emergency nature of the work, the proximity of residential or other sensitive uses, and a consideration of nearby residents'/occupants' preferences. The project applicant shall notify property owners and occupants located within 300 feet at least 14 calendar days prior to construction activity proposed outside of the above days/hours. When submitting a request to the City to allow construction activity outside of the above days/hours, the project applicant shall submit information concerning the type and duration of proposed construction activity and the draft public notice for City review and approval prior to distribution of the public notice.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

35. Construction Noise

Requirement: The project applicant shall implement noise reduction measures to reduce noise impacts due to construction. Noise reduction measures include, but are not limited to, the following:

a. Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) wherever feasible.

b. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.

c. Applicant shall use temporary power poles instead of generators where feasible.

d. Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction.

e. The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

36. Extreme Construction Noise

a. Construction Noise Management Plan Required

Requirement: Prior to any extreme noise generating construction activities (e.g., pier drilling, pile driving and other activities generating greater than 90dBA), the project applicant shall submit a Construction Noise Management Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction impacts associated with extreme noise generating activities. The project applicant shall implement the approved Plan during construction. Potential attenuation measures include, but are not limited to, the following:

i. Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;

ii. Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;

iii. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;

iv. Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and

v. Monitor the effectiveness of noise attenuation measures by taking noise measurements.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

b. Public Notification Required

Requirement: The project applicant shall notify property owners and occupants located within 300 feet of the construction activities at least 14 calendar days prior to commencing extreme noise generating activities. Prior to providing the notice, the project applicant shall submit to the City for review and approval the proposed type and duration of extreme noise generating activities and the proposed public notice. The public notice shall provide the estimated start and end dates of the extreme noise generating activities and describe noise attenuation measures to be implemented.

When Required: During construction

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

37. Construction Noise Complaints

Requirement: The project applicant shall submit to the City for review and approval a set of procedures for responding to and tracking complaints received pertaining to construction noise, and shall implement the procedures during construction. At a minimum, the procedures shall include:

a. Designation of an on-site construction complaint and enforcement manager for the project;
b. A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager and City Code Enforcement unit;
c. Protocols for receiving, responding to, and tracking received complaints; and
d. Maintenance of a complaint log that records received complaints and how complaints were addressed, which shall be submitted to the City for review upon the City's request.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

38. Operational Noise

Requirement: Noise levels from the project site after completion of the project (i.e., during project operation) shall comply with the performance standards of chapter 17.120 of the Oakland Planning Code and chapter 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the City.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

39. Exposure to Vibration

Requirement: The project applicant shall submit a Vibration Reduction Plan prepared by a qualified acoustical consultant for City review and approval that contains vibration reduction measures to reduce groundborne vibration to acceptable levels per Federal Transit Administration (FTA) standards. The applicant shall implement the approved Plan during construction. Potential vibration reduction measures include, but are not limited to, the following:

a. Isolation of foundation and footings using resilient elements such as rubber bearing pads or springs, such as a "spring isolation" system that consists of resilient spring supports that can support the podium or residential foundations. The specific system shall be selected so that it can properly support the structural loads, and provide adequate filtering of groundborne vibration to the residences above.
b. Trenching, which involves excavating soil between the railway and the project so that the vibration path is interrupted, thereby reducing the vibration levels before they enter the project's structures. Since the reduction in vibration level is based on a ratio between trench depth and vibration wavelength, additional measurements shall be conducted to determine the vibration wavelengths affecting the project. Based on the resulting measurement findings, an adequate trench depth and, if required, suitable fill shall be identified (such as foamed styrene packing pellets [i.e., Styrofoam] or low-density polyethylene).

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

TRANSPORTATION/TRAFFIC

40. Construction Activity in the Public Right-of-Way

a. Obstruction Permit Required

Requirement: The project applicant shall obtain an obstruction permit from the City prior to placing any temporary construction-related obstruction in the public right-of-way, including City streets and sidewalks.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

b. Traffic Control Plan Required

Requirement: In the event of obstructions to vehicle or bicycle travel lanes, the project applicant shall submit a Traffic Control Plan to the City for review and approval prior to obtaining an obstruction permit. The project applicant shall submit evidence of City approval of the Traffic Control Plan with the application for an obstruction permit. The Traffic Control Plan shall contain a set of comprehensive traffic control measures for auto, transit, bicycle, and pedestrian detours, including detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. The project applicant shall implement the approved Plan during construction.

When Required: Prior to approval of construction-related permit

Initial Approval Public Works Department, Transportation Services Division

Monitoring/Inspection: Bureau of Building

c. Repair of City Streets

Requirement: The project applicant shall repair any damage to the public right-of way, including streets and sidewalks caused by project construction at his/her expense within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to approval of the final inspection of the construction-related permit. All damage that is a threat to public health or safety shall be repaired immediately.

When Required: Prior to building permit final

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

41. Bicycle Parking

Requirement: The project applicant shall comply with the City of Oakland Bicycle Parking Requirements (chapter 17.118 of the Oakland Planning Code). The project drawings submitted for construction-related permits shall demonstrate compliance with the requirements.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

42. Transportation and Parking Demand Management

a. Transportation and Parking Demand Management (TDM) Plan Required

Requirement: The project applicant shall submit a Transportation and Parking Demand Management (TDM) Plan for review and approval by the City.

i. The goals of the TDM Plan shall be the following:

- Reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable, consistent with the potential traffic and parking impacts of the project.
- Achieve the following project vehicle trip reductions (VTR):
  - Projects generating 50-99 net new a.m. or p.m. peak hour vehicle trips: 10 percent VTR
  - Projects generating 100 or more net new a.m. or p.m. peak hour vehicle trips: 20 percent VTR
- Increase pedestrian, bicycle, transit, and carpool/vanpool modes of travel. All four modes of travel shall be considered, as appropriate.
- Enhance the City's transportation system, consistent with City policies and programs.

ii. TDM strategies to consider include, but are not limited to, the following:

- Inclusion of additional long-term and short-term bicycle parking that meets the design standards set forth in chapter five of the Bicycle Master Plan and the Bicycle Parking Ordinance (chapter 17.117 of the Oakland Planning Code), and shower and locker facilities in commercial developments that exceed the requirement.
- Construction of and/or access to bikeways per the Bicycle Master Plan; construction of priority bikeways, on-site signage and bike lane striping.
- Installation of safety elements per the Pedestrian Master Plan (such as crosswalk striping, curb ramps, count down signals, bulb outs, etc.) to encourage convenient and safe crossing at arterials, in addition to safety elements required to address safety impacts of the project.
- Installation of amenities such as lighting, street trees, and trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan.
- Construction and development of transit stops/shelters, pedestrian access, way finding signage, and lighting around transit stops per transit agency plans or negotiated improvements.
- Direct on-site sales of transit passes purchased and sold at a bulk group rate (through programs such as AC Transit Easy Pass or a similar program through another transit agency).
- Provision of a transit subsidy to employees or residents, determined by the project applicant and subject to review by the City, if employees or residents use transit or commute by other alternative modes.
- Provision of an ongoing contribution to transit service to the area between the project and nearest mass transit station prioritized as follows: 1) Contribution to AC Transit bus service; 2) Contribution to an existing area shuttle service; and 3) Establishment of new shuttle service. The amount of contribution (for any of the above scenarios) would be based upon the cost of establishing new shuttle service (Scenario 3).
- Guaranteed ride home program for employees, either through 511.org or through separate program.
- Pre-tax commuter benefits (commuter checks) for employees.
- Free designated parking spaces for on-site car-sharing program (such as City Car Share, Zip Car, etc.) and/or car-share membership for employees or tenants.

- On-site carpooling and/or vanpool program that includes preferential (discounted or free) parking for carpools and vanpools.
- Distribution of information concerning alternative transportation options.
- Parking spaces sold/leased separately for residential units. Charge employees for parking, or provide a cash incentive or transit pass alternative to a free parking space in commercial properties.
- Parking management strategies including attendant/valet parking and shared parking spaces.
- Requiring tenants to provide opportunities and the ability to work off-site.
- Allow employees or residents to adjust their work schedule in order to complete the basic work requirement of five eight-hour workdays by adjusting their schedule to reduce vehicle trips to the worksite (e.g., working four, ten-hour days; allowing employees to work from home two days per week).
- Provide or require tenants to provide employees with staggered work hours involving a shift in the set work hours of all employees at the workplace or flexible work hours involving individually determined work hours.

The TDM Plan shall indicate the estimated VTR for each strategy, based on published research or guidelines where feasible. For TDM Plans containing ongoing operational VTR strategies, the Plan shall include an ongoing monitoring and enforcement program to ensure the Plan is implemented on an ongoing basis during project operation. If an annual compliance report is required, as explained below, the TDM Plan shall also specify the topics to be addressed in the annual report.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: N/A

*b. **TDM Implementation – Physical Improvements***

Requirement: For VTR strategies involving physical improvements, the project applicant shall obtain the necessary permits/approvals from the City and install the improvements prior to the completion of the project.

When Required: Prior to building permit final

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

*c. **TDM Implementation – Operational Strategies***

Requirement: For projects that generate 100 or more net new a.m. or p.m. peak hour vehicle trips and contain ongoing operational VTR strategies, the project applicant shall submit an annual compliance report for the first five years following completion of the project (or completion of each phase for phased projects) for review and approval by the City. The annual report shall document the status and effectiveness of the TDM program, including the actual VTR achieved by the project during operation. If deemed necessary, the City may elect to have a peer review consultant, paid for by the project applicant, review the annual report. If timely reports are not submitted and/or the annual reports indicate that the project applicant has failed to implement the TDM Plan, the project will be considered in violation of the Conditions of Approval and the City may initiate enforcement action as provided for in these Conditions of Approval. The project shall not be considered in violation of this Condition if the TDM Plan is implemented but the VTR goal is not achieved.

When Required: Ongoing

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Planning

UTILITY AND SERVICE SYSTEMS

43. Construction and Demolition Waste Reduction and Recycling

Requirement: The project applicant shall comply with the City of Oakland Construction and Demolition Waste Reduction and Recycling Ordinance (chapter 15.34 of the Oakland Municipal Code) by submitting a Construction and Demolition Waste Reduction and Recycling Plan (WRRP) for City review and approval, and shall implement the approved WRRP. Projects subject to these requirements include all new construction, renovations/alterations/modifications with construction values of $50,000 or more (except R-3 type construction), and all demolition (including soft demolition) except demolition of type R-3 construction. The WRRP must specify the methods by which the project will divert construction and demolition debris waste from landfill disposal in accordance with current City requirements. The WRRP may be submitted electronically at www.greenhalosystems.com or manually at the City's Green Building Resource Center. Current standards, FAQs, and forms are available on the City's website and in the Green Building Resource Center.

When Required: Prior to approval of construction-related permit

Initial Approval: Public Works Department, Environmental Services Division

Monitoring/Inspection: Public Works Department, Environmental Services Division

44. Underground Utilities

Requirement: The project applicant shall place underground all new utilities serving the project and under the control of the project applicant and the City, including all new gas, electric, cable, and telephone facilities, fire alarm conduits, street light wiring, and other wiring, conduits, and similar facilities. The new facilities shall be placed underground along the project's street frontage and from the project structures to the point of service. Utilities under the control of other agencies, such as PG&E, shall be placed underground if feasible. All utilities shall be installed in accordance with standard specifications of the serving utilities.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

45. Recycling Collection and Storage Space

Requirement: The project applicant shall comply with the City of Oakland Recycling Space Allocation Ordinance (chapter 17.118 of the Oakland Planning Code). The project drawings submitted for construction-related permits shall contain recycling collection and storage areas in compliance with the Ordinance. For residential projects, at least two cubic feet of storage and collection space per residential unit is required, with a minimum of ten cubic feet. For nonresidential projects, at least two cubic feet of storage and collection space per 1,000 square feet of building floor area is required, with a minimum of ten cubic feet.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

46. Green Building Requirements

a. Compliance with Green Building Requirements During Plan-Check

Requirement: The project applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (chapter 18.02 of the Oakland Municipal Code).

i. The following information shall be submitted to the City for review and approval with the application for a building permit:

- Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards.
- Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit.
- Copy of the Unreasonable Hardship Exemption, if granted, during the review of the Planning and Zoning permit.
- Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (ii) below.
- Copy of the signed statement by the Green Building Certifier approved during the review of the Planning and Zoning permit that the project complied with the requirements of the Green Building Ordinance.
- Signed statement by the Green Building Certifier that the project still complies with the requirements of the Green Building Ordinance, unless an Unreasonable Hardship Exemption was granted during the review of the Planning and Zoning permit.
- Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

ii. The set of plans in subsection (i) shall demonstrate compliance with the following:

- CALGreen mandatory measures.
- All pre-requisites per the green building checklist approved during the review of the Planning and Zoning permit, or, if applicable, all the green building measures approved as part of the Unreasonable Hardship Exemption granted during the review of the Planning and Zoning permit.
- Green Point Checklist Requirement: 23 points per the appropriate checklist approved during the Planning entitlement process.
- All green building points identified on the checklist approved during review of the Planning and Zoning permit, unless a Request for Revision Plan-check application is submitted and approved by the Bureau of Planning that shows the previously approved points that will be eliminated or substituted.
- The required green building point minimums in the appropriate credit categories.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: N/A

b. Compliance with Green Building Requirements During Construction

Requirement: The project applicant shall comply with the applicable requirements of CALGreen and the Oakland Green Building Ordinance during construction of the project.

The following information shall be submitted to the City for review and approval:

i. Completed copies of the green building checklists approved during the review of the Planning and Zoning permit and during the review of the building permit.

ii. Signed statement(s) by the Green Building Certifier during all relevant phases of construction that the project complies with the requirements of the Green Building Ordinance.

iii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

c. ***Compliance with Green Building Requirements After Construction***

Requirement: Within sixty (60) days of the final inspection of the building permit for the project, the Green Building Certifier shall submit the appropriate documentation to Build It Green and attain the minimum required certification/point level. Within one year of the final inspection of the building permit for the project, the applicant shall submit to the Bureau of Planning the Certificate from the organization listed above demonstrating certification and compliance with the minimum point/certification level noted above.

When Required: After project completion as specified

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

47. **Green Building Requirements – Small Projects**

a. ***Compliance with Green Building Requirements During Plan-Check***

The project applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (Chapter 18.02 of the Oakland Municipal Code) for projects using the Small Commercial Checklist.

i. The following information shall be submitted to the City for review and approval with application for a building permit:

- Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards.
- Completed copy of the green building checklist approved during the review of a Planning and Zoning permit.
- Permit plans that show in general notes, detailed design drawings and specifications as necessary compliance with the items listed in subsection (b) below.
- Other documentation to prove compliance.

ii. The set of plans in subsection (a) shall demonstrate compliance with the following:

- CALGreen mandatory measures.
- All applicable green building measures identified on the checklist approved during the review of a Planning and Zoning permit, or submittal of a Request for Revision Plan-check application that shows the previously approved points that will be eliminated or substituted.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: N/A

b. Compliance with Green Building Requirements During Construction

Requirement: The project applicant shall comply with the applicable requirements of CALGreen and the Green Building Ordinance during construction.

The following information shall be submitted to the City for review and approval:

i. Completed copy of the green building checklists approved during review of the Planning and Zoning permit and during the review of the Building permit.

ii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

48. Sanitary Sewer System

Requirement: The project applicant shall prepare and submit a Sanitary Sewer Impact Analysis to the City for review and approval in accordance with the City of Oakland Sanitary Sewer Design Guidelines. The Impact Analysis shall include an estimate of pre-project and post-project wastewater flow from the project site. In the event that the Impact Analysis indicates that the net increase in project wastewater flow exceeds City-projected increases in wastewater flow in the sanitary sewer system, the project applicant shall pay the Sanitary Sewer Impact Fee in accordance with the City's Master Fee Schedule for funding improvements to the sanitary sewer system.

When Required: Prior to approval of construction-related permit

Initial Approval: Public Works Department, Department of Engineering and Construction

Monitoring/Inspection: N/A

49. Storm Drain System

Requirement: The project storm drainage system shall be designed in accordance with the City of Oakland's Storm Drainage Design Guidelines. To the maximum extent practicable, peak stormwater runoff from the project site shall be reduced by at least 25 percent compared to the pre-project condition.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

Project-Specific Condition of Approval

50. Material Board

Requirement: The applicant shall submit, for review and approval of the Planning Director, a material board showing all exterior materials on the building. These materials should also be depicted in the set of plans submitted with the Building Permit application.

When Required: Prior to issuance of the Building Permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

51. Storefront Design

Requirement: The applicant shall submit, for review and approval of the Planning Director, plans that show the following:

A. The ground floor facing 7th Street having 55 percent transparency between two (2) feet and nine (9) feet in height. This area shall be comprised of clear, non-reflective windows that allow views in and out of indoor space.

B. A bulkhead and the base of the ground floor, including the storefront windows.

When Required: Prior to issuance of the Building Permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

35. Affordable Residential Units per Density Bonus at this Site

a. **Affordable Residential Units**

Ongoing

The approved residential affordable units that are part of this approval shall remain and continue to be affordable for 55 years or longer. A minimum of eight units shall be affordable to low income households that make less than fifty percent (50%) of the Area Medium Income (AMI).

b. **Maximum Allowed Number of Dwelling Units**

Ongoing

This project is granted three Density Bonus Incentives or Concessions for height, parking reduction, and front yard setback for an affordable housing component pursuant to Section 17.107 of the Oakland Planning Code and Government Code Section 65915.

c. **Affordable Housing Agreement**

Prior to issuance of demolition, grading or building permit/Ongoing

The applicant shall submit an agreement for review and approval by the City Attorney, the Housing Development Division and any other relevant City departments. The agreement must also ensure the continued affordability of the target dwelling units for a period of not less than fifty-five (55) years pursuant to the Oakland Planning Code Section 17.107, and that restricts the occupancy of those units only to residents who satisfy the affordability requirement as approved for this project. Only households meeting the eligibility standards for the target dwelling units shall be eligible to occupy the target dwelling units. The applicant shall record the above agreement with the Alameda County Recorder, and shall provide a copy of recorded agreement to the City.

d) **Annual Reporting of Rental Target Units**

Ongoing annually

Rental target dwelling units shall be managed / operated by the developer or developer's agent or the developer's successor. The developer of rental target dwelling units shall submit for review and approval by the City Attorney and the Housing Development Division and any other relevant City departments, an annual report identifying which units are target dwelling units, the monthly rent, vacancy information, monthly income for tenants of each target rental dwelling unit throughout the prior year, and other information required by the City. Said agreement shall maintain the tenant privacy.

e) **City Monitoring Fee**

Prior to issuance of demolition, grading or building permit/Ongoing

The applicant shall pay to the Housing Development Division a First-Time Homebuyers Program Application Fee administrative fee in the amount of $250 per unit, pursuant to the Master Fee Schedule for City monitoring of target dwelling units.

f) **Affordable Unit Size and Amenities**
Prior to issuance of demolition, grading or building permit/Ongoing
The floor area, number of bedrooms, and amenities (such as fixtures, appliances, and utilities) of the affordable units shall be comparable to those of the market rate units. Further, the proportion of unit types (i.e. three-bedroom and four-bedroom, etc) of the affordable units shall be roughly the same as the market rate units.

Applicant Statement

I have read and accept responsibility for the Conditions of Approval. I agree to abide by and conform to the Conditions of Approval, as well as to all provisions of the Oakland Planning Code and Oakland Municipal Code pertaining to the project.

_____
Name of Project Applicant

_____
Signature of Project Applicant

_____
Date

City of Oakland
Bureau of Planning
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612

NOTICE OF EXEMPTION

TO: Alameda County Clerk
1106 Madison Street
Oakland, CA 94612

Project Title: 7th and Campbell Affordable Housing **Case No.** PLN16056

Project Applicant: Elaine Brown, Oakland and the World Enterprises

Project Location: 0 7th Street; APNs: 006 0017017, 006 0017018, 006 0017019, 006 0017020, 006 0017021, 006 001702200

Project Description: Construction of a six-story residential and commercial facility. The project includes 79 affordable housing units and 24,000 square feet of commercial floor area.

Exempt Status:

Statutory Exemptions

[ ] Ministerial {Sec.15268}
[ ] Feasibility/Planning Study {Sec.15262}
[ ] Emergency Project {Sec.15269}
[ ] Minor Alterations {Sec.15304}

Categorical Exemptions

[ ] Existing Facilities {Sec.15301}
[ ] Replacement or Reconstruction {Sec.15302}
[ ] Small Structures {Sec.15303}
[X] In-fill Development {Sec. 15332}
[ ] General Rule {Sec.15061(b)(3)}

Other
[X] Projects consistent with a community plan, general plan or zoning {Sec. 15183(f)}

Reasons why project is exempt: A CEQA Checklist demonstrates that the potential project-specific environmental effects of the Project were adequately covered by the WOSP EIR, such that CEQA exemptions and streamlining provisions apply to the Project.

Lead Agency: City of Oakland, Community and Economic Development Agency, Zoning Division, 250 Frank H. Ogawa Plaza, Suite 2114, Oakland, CA 94612

Department/Contact Person: **Phone: 510-238-3878**

Scott Miller, for 9-15-17

Signature (Darin Ranelletti, Environmental Review Officer) Date: 9/15/17

Pursuant to Section 711.4(d)(1) of the Fish and Game Code, statutory and categorical exemptions are also exempt from Department of Fish and Game filing fees.

NOTICE OF DETERMINATION
California Environmental Quality Act (CEQA)

DATE: April 20, 2017

TO: Alameda County Clerk
1106 Madison Street
Oakland, CA 94607

Office of Planning and Research
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

FROM: City of Oakland
Bureau of Planning
250 Frank H. Ogawa Plaza, Suite 3315
Oakland, CA 94612
Contact: Neil Gray, Planner IV, (510) 238-3878

SUBJECT: Filing of Notice of Determination/Exemption in compliance with Section 21108 or 21152 of the Public Resources Code

PROJECT TITLE: **7th and Campbell Affordable Housing**
STATE CLEARINGHOUSE NUMBER (If submitted to State Clearinghouse): **Previous CEQA Document: West Oakland Specific Plan EIR SCH#2012102047 (being filed under same State Clearinghouse Number)**
PROJECT APPLICANT: **Elaine Brown – Oakland and the World**
PROJECT LOCATION: **0 7th Street (APNs: 006 0017017, 006 0017018, 006 0017019, 006 0017020, 006 0017021, 006 001702200)**
PROJECT DESCRIPTION: Construction of a six-story residential and commercial facility. The project includes 79 affordable housing units and 24,000 square feet of commercial floor area.

This is to advise that the City of Oakland as the Lead Agency for the above described Project has approved the Project and has made the following determinations on September 15, 2017.

The above actions partially implement actions previously approved by the City Council on July 15, 2014, and described in the NOD that was filed with the Alameda County Clerk and the State Clearinghouse on July 17, 2014. Specifically, the July 17th NOD advised that on July 15, 2014, the Oakland City Council, acting as Lead Agency for the City of Oakland adopted/approved the West Oakland Specific Plan and certified the accompanying Environmental Impact Report (EIR).

The purpose of this NOD is to provide notice that (1) the current actions are within the development program of the already certified West Oakland Specific Plan EIR, (2) the current project CEQA Analysis Checklist/Addendum adequately describes the current approval for purposes of CEQA, and (3) no further CEQA review is required pursuant to CEQA Guidelines 15162 and 15164 and Public Resources Code Section 21094.5 and CEQA Guidelines Section 15183.3 (Qualified Infill Projects).

NOTE: Separately and independently from the above Notice of Determination, the Project is also exempt from CEQA pursuant to CEQA Guideline Section 15183: Approvals consistent with a Community Plan, General Plan or Zoning. Please see/reference an accompanying and complementary filed Notice of Exemption.

_____
Date

_____
DARIN RANELLETTI
Deputy Director
Department of Planning and Building
Environmental Review Officer

***ENVIRONMENTAL DECLARATION**
(CALIF. FISH AND GAME CODE SEC. 711.4)

: FOR COURT USE ONLY

NAME AND ADDRESS OF APPLICANT OR LEAD AGENCY

LEAD AGENCY: CITY OF OAKLAND
Bureau of Planning
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612

APPLICANT: **Elaine Brown**
Oakland and the World
1111 Broadway, 24th Floor
Oakland, CA 97607

: FILING NO. _____

CLASSIFICATION OF ENVIRONMENTAL DOCUMENT: Check the box(es) that applies. CLERKS USE ONLY

1. **NOTICE OF EXEMPTION** PLU 117

[X] A – STATUTORILY OR CATEGORICALLY EXEMPT
$50.00 (Fifty Dollars) – CLERK'S FEE

[ ] B – FEE EXEMPTION –NO IMPACT DETERMINATION ISSUED BY F&G PLU 117
$50.00 (Fifty Dollars) – CLERK'S FEE

2. **NOTICE OF DETERMINATION**

[ ] A – NEGATIVE DECLARATION PLU 116
$2,210.25 (Two Thousand Two Hundred Ten Dollars and Twenty-Five Cents)-STATE FILING FEE

$50.00 (Fifty Dollars) – CLERK'S FEE

[ ] B – MITIGATED NEGATIVE DECLARATION PLU 116
$2,210.25 (Two Thousand Two Hundred Ten Dollars and Twenty-Five Cents)-STATE FILING FEE

$50.00 (Fifty Dollars) – CLERK'S FEE

[X] C – ENVIRONMENTAL IMPACT REPORT PLU 115
$3,070.00 (Three Thousand Seventy Dollars) – STATE FILING FEE

$50.00 (Fifty Dollars) – CLERK'S FEE

3. [ ] **OTHER** (Specify) Notice of Finding of No Significant Impact
$50.00 (Fifty Dollars) – CLERK'S FEE PLU 117

***THIS FORM MUST BE COMPLETED AND SUBMITTED WITH ALL ENVIRONMENTAL DOCUMENTS FILED WITH THE ALAMEDA COUNTY CLERK'S OFFICE.**

FOUR COPIES OF ALL NECESSARY DOCUMENTATION ARE REQUIRED FOR FILING PURPOSES.

APPLICABLE FEES MUST BE PAID AT THE TIME OF FILING AN ENVIRONMENTAL DOCUMENT WITH THE ALAMEDA COUNTY CLERK'S OFFICE.

MAKE CHECK PAYABLE TO: ALAMEDA COUNTY CLERK

Effective 1-1-16

CITY OF OAKLAND

DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA • SUITE 3315 • OAKLAND, CALIFORNIA 94612

Planning and Building Department
Bureau of Planning

(510) 238-3941
FAX (510) 238-6538
TDD (510) 238-3254

July 21, 2020

Elaine Brown
Oakland and the World Enterprises, Inc.
1111 Broadway, 24th Floor
Oakland, CA 94607

RE: PLN16056; 0 7th Street; APNs: 006 0017017, 006 0017018, 006 0017019, 006 0017020, 006 0017021, 006 001702200

Dear Ms. Brown:

Your proposal to revise the above application to construct a five-story building instead of six, build the podium 10 feet from the rear property line, and change the window patterns on the facades has been **approved** by the Zoning Manager. The revised plans are attached. This project is in the 7th Street Opportunity Area and an area designated for transit oriented development in the West Oakland Specific Plan. The rear setback requirement is 15 feet, while the revised project proposes 10 feet. This setback reduction is considered a waiver under the California State Density Bonus Law.

The following table summarizes the proposed project:

Proposal:	To construct a five-story residential and commercial facility. The project includes 79 affordable housing units and 16,750 square feet of commercial floor area. The project includes an affordable housing density bonus of 35 percent and affordable housing waivers for number of parking spaces, building height and setback in the RM-2 zone. The project includes job training services and an urban farm.
Planning Permits Required:	Regular Design Review for new construction of a building.
General Plan:	Community Commercial
Zoning:	CC-2
Environmental Determination:	A detailed CEQA Analysis was prepared for this project that concluded that the project satisfies CEQA (Public Resources Code 21166) and CEQA Guidelines: A CEQA Checklist demonstrates that the potential project-specific environmental effects of the Project were adequately covered by the WOSP EIR, such that CEQA exemptions and streamlining provisions apply to the Project. The Project satisfies the CEQA provisions that provide for no further environmental review as a Project Consistent with a Community Plan and Zoning (CEQA Guidelines Section 15183), for CEQA streamlining as a qualified Infill Project (CEQA Guidelines 15183.3), and for an exemption form CEQA as an Urban Infill project (CEQA Guidelines Section 15332). No exceptions preclude these CEQA exemptions and streamlining provisions, based on the evidence presented in a completed CEQA Checklist
Historic Status:	ASI: 7th Street Commercial, OCHS Rating: Dc2*
City Council District:	3

The project is subject to the attached Conditions of Approval.

If you have any questions, please contact the case planner, **Neil Gray, Planner IV** at **(510) 238-3878** or **ngray@oaklandca.gov**.

Very Truly Yours,

Neil Gray
Planner IV

Cc: Ali Kashani

Attachments:

A. Conditions of approval
B. Revised Plans

ATTACHMENT A: CONDITIONS OF APPROVAL

The proposal is hereby approved subject to the following Conditions of Approval

Part 1: Standard Conditions of Approval – General Administrative Conditions

1. Approved Use

The project shall be constructed and operated in accordance with the authorized use as described in the approved application materials, and the approved plans dated May 5, 2016, as amended by the revised plans shown in Attachment B and the following conditions of approval, if applicable ("Conditions of Approval" or "Conditions").

2. Effective Date, Expiration, Extensions and Extinguishment

This Approval shall become effective immediately, unless the Approval is appealable, in which case the Approval shall become effective in ten calendar days unless an appeal is filed. Unless a different termination date is prescribed, this Approval shall expire **September 15, 2020**, unless within such period all necessary permits for construction or alteration have been issued, or the authorized activities have commenced in the case of a permit not involving construction or alteration. Upon written request and payment of appropriate fees submitted no later than the expiration date of this Approval, the Director of City Planning or designee may grant a one-year extension of this date, with additional extensions subject to approval by the approving body. Expiration of any necessary building permit or other construction-related permit for this project may invalidate this Approval if said Approval has also expired. If litigation is filed challenging this Approval, or its implementation, then the time period stated above for obtaining necessary permits for construction or alteration and/or commencement of authorized activities is automatically extended for the duration of the litigation.

3. Compliance with Other Requirements

The project applicant shall comply with all other applicable federal, state, regional, and local laws/codes, requirements, regulations, and guidelines, including but not limited to those imposed by the City's Bureau of Building, Fire Marshal, and Public Works Department. Compliance with other applicable requirements may require changes to the approved use and/or plans. These changes shall be processed in accordance with the procedures contained in Condition #4.

4. Minor and Major Changes

a. Minor changes to the approved project, plans, Conditions, facilities, or use may be approved administratively by the Director of City Planning

b. Major changes to the approved project, plans, Conditions, facilities, or use shall be reviewed by the Director of City Planning to determine whether such changes require submittal and approval of a revision to the Approval by the original approving body or a new independent permit/approval. Major revisions shall be reviewed in accordance with the procedures required for the original permit/approval. A new independent permit/approval shall be reviewed in accordance with the procedures required for the new permit/approval.

5. Compliance with Conditions of Approval

a. The project applicant and property owner, including successors, (collectively referred to hereafter as the "project applicant" or "applicant") shall be responsible for compliance with all the Conditions of Approval and any recommendations contained in any submitted and approved technical report at his/her sole cost and expense, subject to review and approval by the City of Oakland.

b. The City of Oakland reserves the right at any time during construction to require certification by a licensed professional at the project applicant's expense that the as-built project conforms to all applicable requirements, including but not limited to, approved maximum heights and minimum setbacks. Failure to construct the project in accordance with the Approval may result in remedial reconstruction, permit revocation, permit modification, stop work, permit suspension, or other corrective action.

c. Violation of any term, Condition, or project description relating to the Approval is unlawful, prohibited, and a violation of the Oakland Municipal Code. The City of Oakland reserves the right to initiate civil and/or criminal enforcement and/or abatement proceedings, or after notice and public hearing, to revoke the Approval or alter these Conditions if it is found that there is violation of any of the Conditions or the provisions of the Planning Code or Municipal Code, or the project operates as or causes a public nuisance. This provision is not intended to, nor does it, limit in any manner whatsoever the ability of the City to take appropriate enforcement actions. The project applicant shall be responsible for paying fees in accordance with the City's Master Fee Schedule for inspections conducted by the City or a City-designated third-party to investigate alleged violations of the Approval or Conditions.

6. Signed Copy of the Approval/Conditions

A copy of the Approval letter and Conditions shall be signed by the project applicant, attached to each set of permit plans submitted to the appropriate City agency for the project, and made available for review at the project job site at all times.

7. Blight/Nuisances

The project site shall be kept in a blight/nuisance-free condition. Any existing blight or nuisance shall be abated within 60 days of approval, unless an earlier date is specified elsewhere.

8. Indemnification

a. To the maximum extent permitted by law, the project applicant shall defend (with counsel acceptable to the City), indemnify, and hold harmless the City of Oakland, the Oakland City Council, the Oakland Redevelopment Successor Agency, the Oakland City Planning Commission, and their respective agents, officers, employees, and volunteers (hereafter collectively called "City") from any liability, damages, claim, judgment, loss (direct or indirect), action, causes of action, or proceeding (including legal costs, attorneys' fees, expert witness or consultant fees, City Attorney or staff time, expenses or costs) (collectively called "Action") against the City to attack, set aside, void or annul this Approval or implementation of this Approval. The City may elect, in its sole discretion, to participate in the defense of said Action and the project applicant shall reimburse the City for its reasonable legal costs and attorneys' fees.

b. Within ten (10) calendar days of the filing of any Action as specified in subsection (a) above, the project applicant shall execute a Joint Defense Letter of Agreement with the City, acceptable to the Office of the City Attorney, which memorializes the above obligations. These obligations and the Joint Defense Letter of Agreement shall survive termination, extinguishment, or invalidation of the

Approval. Failure to timely execute the Letter of Agreement does not relieve the project applicant of any of the obligations contained in this Condition or other requirements or Conditions of Approval that may be imposed by the City.

9. Severability

The Approval would not have been granted but for the applicability and validity of each and every one of the specified Conditions, and if one or more of such Conditions is found to be invalid by a court of competent jurisdiction this Approval would not have been granted without requiring other valid Conditions consistent with achieving the same purpose and intent of such Approval.

10. Special Inspector/Inspections, Independent Technical Review, Project Coordination and Monitoring

The project applicant may be required to cover the full costs of independent third-party technical review and City monitoring and inspection, including without limitation, special inspector(s)/inspection(s) during times of extensive or specialized plan-check review or construction, and inspections of potential violations of the Conditions of Approval. The project applicant shall establish a deposit with the Bureau of Building, if directed by the Building Official, Director of City Planning, or designee, prior to the issuance of a construction-related permit and on an ongoing as-needed basis.

11. Public Improvements

The project applicant shall obtain all necessary permits/approvals, such as encroachment permits, obstruction permits, curb/gutter/sidewalk permits, and public improvement ("p-job") permits from the City for work in the public right-of-way, including but not limited to, streets, curbs, gutters, sidewalks, utilities, and fire hydrants. Prior to any work in the public right-of-way, the applicant shall submit plans for review and approval by the Bureau of Planning, the Bureau of Building, and other City departments as required. Public improvements shall be designed and installed to the satisfaction of the City.

12. Compliance Matrix

The project applicant shall submit a Compliance Matrix, in both written and electronic form, for review and approval by the Bureau of Planning and the Bureau of Building that lists each Condition of Approval (including each mitigation measure if applicable) in a sortable spreadsheet. The Compliance Matrix shall contain, at a minimum, each required Condition of Approval, when compliance with the Condition is required, and the status of compliance with each Condition. For multi-phased projects, the Compliance Matrix shall indicate which Condition applies to each phase. The project applicant shall submit the initial Compliance Matrix prior to the issuance of the first construction-related permit and shall submit an updated matrix upon request by the City.

13. Construction Management Plan

Prior to the issuance of the first construction-related permit, the project applicant and his/her general contractor shall submit a Construction Management Plan (CMP) for review and approval by the Bureau of Planning, Bureau of Building, and other relevant City departments such as the Fire Department and the Public Works Department as directed. The CMP shall contain measures to minimize potential construction impacts including measures to comply with all construction-related Conditions of Approval (and mitigation measures if applicable) such as dust control, construction emissions, hazardous materials, construction days/hours, construction traffic control, waste reduction and recycling, stormwater pollution prevention, noise control, complaint management, and cultural resource management (see applicable Conditions below). The CMP shall provide project-specific information including descriptive procedures, approval documentation, and drawings (such as a site logistics plan, fire safety plan, construction phasing plan, proposed truck routes, traffic control plan, complaint management plan, construction worker parking

plan, and litter/debris clean-up plan) that specify how potential construction impacts will be minimized and how each construction-related requirement will be satisfied throughout construction of the project.

Part 2: Standard Conditions of Approval – Environmental Protection Measures

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GENERAL

14. Regulatory Permits and Authorizations from Other Agencies

Requirement: The project applicant shall obtain all necessary regulatory permits and authorizations from applicable resource/regulatory agencies including, but not limited to, the Regional Water Quality Control Board, Bay Area Air Quality Management District, Bay Conservation and Development Commission, California Department of Fish and Wildlife, U. S. Fish and Wildlife Service, and Army Corps of Engineers and shall comply with all requirements and conditions of the permits/authorizations. The project applicant shall submit evidence of the approved permits/authorizations to the City, along with evidence demonstrating compliance with any regulatory permit/authorization conditions of approval.

When Required: Prior to activity requiring permit/authorization from regulatory agency

Initial Approval: Approval by applicable regulatory agency with jurisdiction; evidence of approval submitted to Bureau of Planning

Monitoring/Inspection: Applicable regulatory agency with jurisdiction

AESTHETICS

15. Graffiti Control

Requirement:

a. During construction and operation of the project, the project applicant shall incorporate best management practices reasonably related to the control of graffiti and/or the mitigation of the impacts of graffiti. Such best management practices may include, without limitation:
   i. Installation and maintenance of landscaping to discourage defacement of and/or protect likely graffiti-attracting surfaces.
   ii. Installation and maintenance of lighting to protect likely graffiti-attracting surfaces.
   iii. Use of paint with anti-graffiti coating.
   iv. Incorporation of architectural or design elements or features to discourage graffiti defacement in accordance with the principles of Crime Prevention Through Environmental Design (CPTED).
   v. Other practices approved by the City to deter, protect, or reduce the potential for graffiti defacement.

b. The project applicant shall remove graffiti by appropriate means within seventy-two (72) hours. Appropriate means include the following:
   i. Removal through scrubbing, washing, sanding, and/or scraping (or similar method) without damaging the surface and without discharging wash water or cleaning detergents into the City storm drain system.
   ii. Covering with new paint to match the color of the surrounding surface.
   iii. Replacing with new surfacing (with City permits if required).

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

16. Landscape Plan

a. Landscape Plan Required

Requirement: The project applicant shall submit a final Landscape Plan for City review and approval that is consistent with the approved Landscape Plan. The Landscape Plan shall be included with the set of drawings submitted for the construction-related permit and shall comply with the landscape requirements of chapter 17.124 of the Planning Code.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: N/A

b. Landscape Installation

Requirement: The project applicant shall implement the approved Landscape Plan unless a bond, cash deposit, letter of credit, or other equivalent instrument acceptable to the Director of City Planning, is provided. The financial instrument shall equal the greater of $2,500 or the estimated cost of implementing the Landscape Plan based on a licensed contractor's bid.

When Required: Prior to building permit final

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

c. Landscape Maintenance

Requirement: All required planting shall be permanently maintained in good growing condition and, whenever necessary, replaced with new plant materials to ensure continued compliance with applicable landscaping requirements. The property owner shall be responsible for maintaining planting in adjacent public rights-of-way. All required fences, walls, and irrigation systems shall be permanently maintained in good condition and, whenever necessary, repaired or replaced.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

17. Lighting

Requirement: Proposed new exterior lighting fixtures shall be adequately shielded to a point below the light bulb and reflector to prevent unnecessary glare onto adjacent properties.

When Required: Prior to building permit final

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

AIR QUALITY

18. Construction-Related Air Pollution Controls (Dust and Equipment Emissions)

Requirement: The project applicant shall implement all of the following applicable air pollution control measures during construction of the project:

a. Water all exposed surfaces of active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever feasible.
b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
d. Pave all roadways, driveways, sidewalks, etc. within one month of site grading or as soon as feasible. In addition, building pads should be laid within one month of grading or as soon as feasible unless seeding or soil binders are used.
e. Enclose, cover, water twice daily, or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).
f. Limit vehicle speeds on unpaved roads to 15 miles per hour.
g. Idling times on all diesel-fueled commercial vehicles over 10,000 lbs. shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations). Clear signage to this effect shall be provided for construction workers at all access points.
h. Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes and fleet operators must develop a written policy as required by Title 23, Section 2449, of the California Code of Regulations (“California Air Resources Board Off-Road Diesel Regulations”).
i. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
j. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available and it is not feasible to use propane or natural gas.
k. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
l. All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph.
m. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
n. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).
o. Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.
p. Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize wind blown dust. Wind breaks must have a maximum 50 percent air porosity.
q. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

r. Activities such as excavation, grading, and other ground-disturbing construction activities shall be phased to minimize the amount of disturbed surface area at any one time.

s. All trucks and equipment, including tires, shall be washed off prior to leaving the site.

t. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.

u. All equipment to be used on the construction site and subject to the requirements of Title 13, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations") must meet emissions and performance requirements one year in advance of any fleet deadlines. Upon request by the City, the project applicant shall provide written documentation that fleet requirements have been met.

v. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings).

w. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM.

x. Off-road heavy diesel engines shall meet the California Air Resources Board's most recent certification standard.

y. Post a publicly-visible large on-site sign that includes the contact name and phone number for the project complaint manager responsible for responding to dust complaints and the telephone numbers of the City's Code Enforcement unit and the Bay Area Air Quality Management District. When contacted, the project complaint manager shall respond and take corrective action within 48 hours.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

19. Exposure to Air Pollution (Toxic Air Contaminants)

a. Health Risk Reduction Measures

Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants. The project applicant shall choose one of the following methods:

i. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents/occupants/users to air pollutants. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes that the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

- or -

ii. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:

- Installation of air filtration to reduce cancer risks and Particulate Matter (PM) exposure for residents and other sensitive populations in the project that are in close proximity to sources of air pollution. Air filter devices shall be rated MERV-16 or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.
- Where appropriate, install passive electrostatic filtering systems, especially those with low air velocities (i.e., 1 mph).
- Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible.
- The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall be located as far away as feasible from a loading dock or where trucks concentrate to deliver goods.
- Sensitive receptors shall be located on the upper floors of buildings, if feasible.
- Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (*Pinus nigra* var. *maritima*), Cypress (*X Cupressocyparis leylandii*), Hybrid popular (*Populus deltoids X trichocarpa*), and Redwood *(Sequoia sempervirens*).
- Sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible.
- Existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible.
- Emissions from diesel trucks shall be reduced through implementing the following measures, if feasible:
    - Installing electrical hook-ups for diesel trucks at loading docks.
    - Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards.
    - Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels.
    - Prohibiting trucks from idling for more than two minutes.
    - Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

b. Maintenance of Health Risk Reduction Measures

Requirement: The project applicant shall maintain, repair, and/or replace installed health risk reduction measures, including but not limited to the HVAC system (if applicable), on an ongoing and as-needed basis. Prior to occupancy, the project applicant shall prepare and then distribute to the building manager/operator an operation and maintenance manual for the HVAC system and filter including the maintenance and replacement schedule for the filter.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

20. Stationary Sources of Air Pollution (Toxic Air Contaminants)

Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to on-site stationary sources of toxic air contaminants. The project applicant shall choose one of the following methods:

a. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk associated with proposed stationary sources of pollution in the project. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

- or -

b. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:

   i. Installation of non-diesel fueled generators, if feasible, or;

   ii. Installation of diesel generators with an EPA-certified Tier 4 engine or engines that are retrofitted with a CARB Level 3 Verified Diesel Emissions Control Strategy, if feasible.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

21. Asbestos in Structures

Requirement: The project applicant shall comply with all applicable laws and regulations regarding demolition and renovation of Asbestos Containing Materials (ACM), including but not limited to California Code of Regulations, Title 8; California Business and Professions Code, Division 3; California Health and Safety Code sections 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended. Evidence of compliance shall be submitted to the City upon request.

When Required: Prior to approval of construction-related permit

Initial Approval: Applicable regulatory agency with jurisdiction

Monitoring/Inspection: Applicable regulatory agency with jurisdiction

CULTURAL RESOURCES

22. Archaeological and Paleontological Resources – Discovery During Construction

Requirement: Pursuant to CEQA Guidelines section 15064.5(f), in the event that any historic or prehistoric subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant shall notify the City and consult with a qualified archaeologist or paleontologist, as applicable, to assess the significance of the find. In the case of discovery of paleontological resources, the assessment shall be done in accordance with the Society of

Vertebrate Paleontology standards. If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by the City must be followed unless avoidance is determined unnecessary or infeasible by the City. Feasibility of avoidance shall be determined with consideration of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. Work may proceed on other parts of the project site while measures for the cultural resources are implemented.

In the event of data recovery of archaeological resources, the project applicant shall submit an Archaeological Research Design and Treatment Plan (ARDTP) prepared by a qualified archaeologist for review and approval by the City. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practicable. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant. The project applicant shall implement the ARDTP at his/her expense.

In the event of excavation of paleontological resources, the project applicant shall submit an excavation plan prepared by a qualified paleontologist to the City for review and approval. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by a qualified paleontologist, as appropriate, according to current professional standards and at the expense of the project applicant.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

23. Archaeologically Sensitive Areas – Pre-Construction Measures

Requirement: The project applicant shall implement either Provision A (Intensive Pre-Construction Study) or Provision B (Construction ALERT Sheet) concerning archaeological resources.

Provision A: Intensive Pre-Construction Study.

The project applicant shall retain a qualified archaeologist to conduct a site-specific, intensive archaeological resources study for review and approval by the City prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence of history-period archaeological resources on the project site. At a minimum, the study shall include:

a. Subsurface presence/absence studies of the project site. Field studies may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources.

b. A report disseminating the results of this research.

c. Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources.

If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction and

prepare an ALERT sheet pursuant to Provision B below that details what could potentially be found at the project site. Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the ALERT sheet, required per Provision B below) and the procedures to follow if any artifacts are encountered, field recording and sampling in accordance with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation, notifying the appropriate officials if human remains or cultural resources are discovered, and preparing a report to document negative findings after construction is completed if no archaeological resources are discovered during construction.

Provision B: Construction ALERT Sheet.

The project applicant shall prepare a construction "ALERT" sheet developed by a qualified archaeologist for review and approval by the City prior to soil-disturbing activities occurring on the project site. The ALERT sheet shall contain, at a minimum, visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the project's prime contractor, any project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving), and utility firms involved in soil-disturbing activities within the project site.

The ALERT sheet shall state, in addition to the basic archaeological resource protection measures contained in other standard conditions of approval, all work must stop and the City's Environmental Review Officer contacted in the event of discovery of the following cultural materials: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones. Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. The ALERT sheet shall also be posted in a visible location at the project site.

When Required: Prior to approval of construction-related permit; during construction

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

24. Human Remains – Discovery During Construction

Requirement: Pursuant to CEQA Guidelines section 15064.5(e)(1), in the event that human skeletal remains are uncovered at the project site during construction activities, all work shall immediately halt and the project applicant shall notify the City and the Alameda County Coroner. If the County Coroner determines that an investigation of the cause of death is required or that the remains are Native American, all work shall cease within 50 feet of the remains until appropriate arrangements are made. In the event that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of section 7050.5 of the California Health and Safety Code. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance, and avoidance measures (if applicable) shall be completed expeditiously and at the expense of the project applicant.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

GEOLOGY AND SOILS

25. Construction-Related Permit(s)

Requirement: The project applicant shall obtain all required construction-related permits/approvals from the City. The project shall comply with all standards, requirements and conditions contained in construction-related codes, including but not limited to the Oakland Building Code and the Oakland Grading Regulations, to ensure structural integrity and safe construction.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

26. Soils Report

Requirement: The project applicant shall submit a soils report prepared by a registered geotechnical engineer for City review and approval. The soils report shall contain, at a minimum, field test results and observations regarding the nature, distribution and strength of existing soils, and recommendations for appropriate grading practices and project design. The project applicant shall implement the recommendations contained in the approved report during project design and construction.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

HAZARDS AND HAZARDOUS MATERIALS

27. Hazardous Materials Related to Construction

Requirement: The project applicant shall ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to minimize potential negative effects on groundwater, soils, and human health. These shall include, at a minimum, the following:

a. Follow manufacture's recommendations for use, storage, and disposal of chemical products used in construction;
b. Avoid overtopping construction equipment fuel gas tanks;
c. During routine maintenance of construction equipment, properly contain and remove grease and oils;
d. Properly dispose of discarded containers of fuels and other chemicals;
e. Implement lead-safe work practices and comply with all local, regional, state, and federal requirements concerning lead (for more information refer to the Alameda County Lead Poisoning Prevention Program); and
f. If soil, groundwater, or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the project applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notifying the City and applicable regulatory agency(ies) and implementation of the actions described in the City's Standard Conditions of

Approval, as necessary, to identify the nature and extent of contamination. Work shall not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

28. Hazardous Building Materials and Site Contamination

a. Hazardous Building Materials Assessment

Requirement: The project applicant shall submit a comprehensive assessment report to the Bureau of Building, signed by a qualified environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACMs), lead-based paint, polychlorinated biphenyls (PCBs), and any other building materials or stored materials classified as hazardous materials by State or federal law. If lead-based paint, ACMs, PCBs, or any other building materials or stored materials classified as hazardous materials are present, the project applicant shall submit specifications prepared and signed by a qualified environmental professional, for the stabilization and/or removal of the identified hazardous materials in accordance with all applicable laws and regulations. The project applicant shall implement the approved recommendations and submit to the City evidence of approval for any proposed remedial action and required clearances by the applicable local, state, or federal regulatory agency.

When Required: Prior to approval of demolition, grading, or building permits

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

b. Environmental Site Assessment Required

Requirement: The project applicant shall submit a Phase I Environmental Site Assessment report, and Phase II Environmental Site Assessment report if warranted by the Phase I report, for the project site for review and approval by the City. The report(s) shall be prepared by a qualified environmental assessment professional and include recommendations for remedial action, as appropriate, for hazardous materials. The project applicant shall implement the approved recommendations and submit to the City evidence of approval for any proposed remedial action and required clearances by the applicable local, state, or federal regulatory agency.

When Required: Prior to approval of construction-related permit

Initial Approval: Applicable regulatory agency with jurisdiction

Monitoring/Inspection: Applicable regulatory agency with jurisdiction

c. Health and Safety Plan Required

Requirement: The project applicant shall submit a Health and Safety Plan for the review and approval by the City in order to protect project construction workers from risks associated with hazardous materials. The project applicant shall implement the approved Plan.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

d. Best Management Practices (BMPs) Required for Contaminated Sites

Requirement: The project applicant shall ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to minimize potential soil and groundwater hazards. These shall include the following:

i. Soil generated by construction activities shall be stockpiled on-site in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state, and federal requirements.

ii. Groundwater pumped from the subsurface shall be contained on-site in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

HYDROLOGY AND WATER QUALITY

29. Erosion and Sedimentation Control Measures for Construction

Requirement: The project applicant shall implement Best Management Practices (BMPs) to reduce erosion, sedimentation, and water quality impacts during construction to the maximum extent practicable. At a minimum, the project applicant shall provide filter materials deemed acceptable to the City at nearby catch basins to prevent any debris and dirt from flowing into the City's storm drain system and creeks.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

30. Erosion and Sedimentation Control Plan for Construction

a. Erosion and Sedimentation Control Plan Required

Requirement: The project applicant shall submit an Erosion and Sedimentation Control Plan to the City for review and approval. The Erosion and Sedimentation Control Plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading and/or construction operations. The Plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the City. The Plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: N/A

b. Erosion and Sedimentation Control During Construction

Requirement: The project applicant shall implement the approved Erosion and Sedimentation Control Plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Bureau of Building.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

31. NPDES C.3 Stormwater Requirements for Regulated Projects

a. Post-Construction Stormwater Management Plan Required

Requirement: The project applicant shall comply with the requirements of Provision C.3 of the Municipal Regional Stormwater Permit issued under the National Pollutant Discharge Elimination System (NPDES). The project applicant shall submit a Post-Construction Stormwater Management Plan to the City for review and approval with the project drawings submitted for site improvements, and shall implement the approved Plan during construction. The Post-Construction Stormwater Management Plan shall include and identify the following:

i. Location and size of new and replaced impervious surface;
ii. Directional surface flow of stormwater runoff;
iii. Location of proposed on-site storm drain lines;
iv. Site design measures to reduce the amount of impervious surface area;
v. Source control measures to limit stormwater pollution;
vi. Stormwater treatment measures to remove pollutants from stormwater runoff, including the method used to hydraulically size the treatment measures; and
vii. Hydromodification management measures, if required by Provision C.3, so that post-project stormwater runoff flow and duration match pre-project runoff.

When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning; Bureau of Building
Monitoring/Inspection: Bureau of Building

b. Maintenance Agreement Required

Requirement: The project applicant shall enter into a maintenance agreement with the City, based on the Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement, in accordance with Provision C.3, which provides, in part, for the following:

i. The project applicant accepting responsibility for the adequate installation/construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures being incorporated into the project until the responsibility is legally transferred to another entity; and
ii. Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water Quality Control Board, San Francisco Region, for the purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary.

The maintenance agreement shall be recorded at the County Recorder's Office at the applicant's expense.

When Required: Prior to building permit final

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

NOISE

32. Construction Days/Hours

Requirement: The project applicant shall comply with the following restrictions concerning construction days and hours:

a. Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday, except that pier drilling and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m.

b. Construction activities are limited to between 9:00 a.m. and 5:00 p.m. on Saturday. In residential zones and within 300 feet of a residential zone, construction activities are allowed from 9:00 a.m. to 5:00 p.m. only within the interior of the building with the doors and windows closed. No pier drilling or other extreme noise generating activities greater than 90 dBA are allowed on Saturday.

c. No construction is allowed on Sunday or federal holidays.

Construction activities include, but are not limited to, truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.

Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the City, with criteria including the urgency/emergency nature of the work, the proximity of residential or other sensitive uses, and a consideration of nearby residents'/occupants' preferences. The project applicant shall notify property owners and occupants located within 300 feet at least 14 calendar days prior to construction activity proposed outside of the above days/hours. When submitting a request to the City to allow construction activity outside of the above days/hours, the project applicant shall submit information concerning the type and duration of proposed construction activity and the draft public notice for City review and approval prior to distribution of the public notice.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

33. Construction Noise

Requirement: The project applicant shall implement noise reduction measures to reduce noise impacts due to construction. Noise reduction measures include, but are not limited to, the following:

a. Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) wherever feasible.

b. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.

c. Applicant shall use temporary power poles instead of generators where feasible.

d. Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction.

e. The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

34. Extreme Construction Noise

a. Construction Noise Management Plan Required

Requirement: Prior to any extreme noise generating construction activities (e.g., pier drilling, pile driving and other activities generating greater than 90dBA), the project applicant shall submit a Construction Noise Management Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction impacts associated with extreme noise generating activities. The project applicant shall implement the approved Plan during construction. Potential attenuation measures include, but are not limited to, the following:

i. Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;

ii. Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;

iii. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;

iv. Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and

v. Monitor the effectiveness of noise attenuation measures by taking noise measurements.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

b. Public Notification Required

Requirement: The project applicant shall notify property owners and occupants located within 300 feet of the construction activities at least 14 calendar days prior to commencing extreme noise generating activities. Prior to providing the notice, the project applicant shall submit to the City for review and approval the proposed type and duration of extreme noise generating activities and the proposed public notice. The public notice shall provide the estimated start and end dates of the extreme noise generating activities and describe noise attenuation measures to be implemented.

When Required: During construction

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

35. Construction Noise Complaints

Requirement: The project applicant shall submit to the City for review and approval a set of procedures for responding to and tracking complaints received pertaining to construction noise, and shall implement the procedures during construction. At a minimum, the procedures shall include**:**

a. Designation of an on-site construction complaint and enforcement manager for the project;
b. A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager and City Code Enforcement unit;
c. Protocols for receiving, responding to, and tracking received complaints; and
d. Maintenance of a complaint log that records received complaints and how complaints were addressed, which shall be submitted to the City for review upon the City's request.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

36. Operational Noise

Requirement: Noise levels from the project site after completion of the project (i.e., during project operation) shall comply with the performance standards of chapter 17.120 of the Oakland Planning Code and chapter 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the City.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

37. Exposure to Vibration

Requirement: The project applicant shall submit a Vibration Reduction Plan prepared by a qualified acoustical consultant for City review and approval that contains vibration reduction measures to reduce groundborne vibration to acceptable levels per Federal Transit Administration (FTA) standards. The applicant shall implement the approved Plan during construction. Potential vibration reduction measures include, but are not limited to, the following:

a. Isolation of foundation and footings using resilient elements such as rubber bearing pads or springs, such as a "spring isolation" system that consists of resilient spring supports that can support the podium or residential foundations. The specific system shall be selected so that it can properly support the structural loads, and provide adequate filtering of groundborne vibration to the residences above.
b. Trenching, which involves excavating soil between the railway and the project so that the vibration path is interrupted, thereby reducing the vibration levels before they enter the project's structures. Since the reduction in vibration level is based on a ratio between trench depth and vibration wavelength, additional measurements shall be conducted to determine the vibration wavelengths affecting the project. Based on the resulting measurement findings, an adequate trench depth and, if required, suitable fill shall be identified (such as foamed styrene packing pellets [i.e., Styrofoam] or low-density polyethylene).

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

TRANSPORTATION/TRAFFIC

38. Construction Activity in the Public Right-of-Way

a. Obstruction Permit Required

Requirement: The project applicant shall obtain an obstruction permit from the City prior to placing any temporary construction-related obstruction in the public right-of-way, including City streets and sidewalks.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

b. Traffic Control Plan Required

Requirement: In the event of obstructions to vehicle or bicycle travel lanes, the project applicant shall submit a Traffic Control Plan to the City for review and approval prior to obtaining an obstruction permit. The project applicant shall submit evidence of City approval of the Traffic Control Plan with the application for an obstruction permit. The Traffic Control Plan shall contain a set of comprehensive traffic control measures for auto, transit, bicycle, and pedestrian detours, including detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. The project applicant shall implement the approved Plan during construction.

When Required: Prior to approval of construction-related permit

Initial Approval Public Works Department, Transportation Services Division

Monitoring/Inspection: Bureau of Building

c. Repair of City Streets

Requirement: The project applicant shall repair any damage to the public right-of way, including streets and sidewalks caused by project construction at his/her expense within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to approval of the final inspection of the construction-related permit. All damage that is a threat to public health or safety shall be repaired immediately.

When Required: Prior to building permit final

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

39. Bicycle Parking

Requirement: The project applicant shall comply with the City of Oakland Bicycle Parking Requirements (chapter 17.118 of the Oakland Planning Code). The project drawings submitted for construction-related permits shall demonstrate compliance with the requirements.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

40. Transportation and Parking Demand Management

a. Transportation and Parking Demand Management (TDM) Plan Required

Requirement: The project applicant shall submit a Transportation and Parking Demand Management (TDM) Plan for review and approval by the City.

i. The goals of the TDM Plan shall be the following:

- Reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable, consistent with the potential traffic and parking impacts of the project.
- Achieve the following project vehicle trip reductions (VTR):
  - Projects generating 50-99 net new a.m. or p.m. peak hour vehicle trips: 10 percent VTR
  - Projects generating 100 or more net new a.m. or p.m. peak hour vehicle trips: 20 percent VTR
- Increase pedestrian, bicycle, transit, and carpool/vanpool modes of travel. All four modes of travel shall be considered, as appropriate.
- Enhance the City's transportation system, consistent with City policies and programs.

ii. TDM strategies to consider include, but are not limited to, the following:

- Inclusion of additional long-term and short-term bicycle parking that meets the design standards set forth in chapter five of the Bicycle Master Plan and the Bicycle Parking Ordinance (chapter 17.117 of the Oakland Planning Code), and shower and locker facilities in commercial developments that exceed the requirement.
- Construction of and/or access to bikeways per the Bicycle Master Plan; construction of priority bikeways, on-site signage and bike lane striping.
- Installation of safety elements per the Pedestrian Master Plan (such as crosswalk striping, curb ramps, count down signals, bulb outs, etc.) to encourage convenient and safe crossing at arterials, in addition to safety elements required to address safety impacts of the project.
- Installation of amenities such as lighting, street trees, and trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan.
- Construction and development of transit stops/shelters, pedestrian access, way finding signage, and lighting around transit stops per transit agency plans or negotiated improvements.
- Direct on-site sales of transit passes purchased and sold at a bulk group rate (through programs such as AC Transit Easy Pass or a similar program through another transit agency).
- Provision of a transit subsidy to employees or residents, determined by the project applicant and subject to review by the City, if employees or residents use transit or commute by other alternative modes.
- Provision of an ongoing contribution to transit service to the area between the project and nearest mass transit station prioritized as follows: 1) Contribution to AC Transit bus service; 2) Contribution to an existing area shuttle service; and 3) Establishment of new shuttle service. The amount of contribution (for any of the above scenarios) would be based upon the cost of establishing new shuttle service (Scenario 3).
- Guaranteed ride home program for employees, either through 511.org or through separate program.
- Pre-tax commuter benefits (commuter checks) for employees.
- Free designated parking spaces for on-site car-sharing program (such as City Car Share, Zip Car, etc.) and/or car-share membership for employees or tenants.
- On-site carpooling and/or vanpool program that includes preferential (discounted or free) parking for carpools and vanpools.
- Distribution of information concerning alternative transportation options.

- Parking spaces sold/leased separately for residential units. Charge employees for parking, or provide a cash incentive or transit pass alternative to a free parking space in commercial properties.
- Parking management strategies including attendant/valet parking and shared parking spaces.
- Requiring tenants to provide opportunities and the ability to work off-site.
- Allow employees or residents to adjust their work schedule in order to complete the basic work requirement of five eight-hour workdays by adjusting their schedule to reduce vehicle trips to the worksite (e.g., working four, ten-hour days; allowing employees to work from home two days per week).
- Provide or require tenants to provide employees with staggered work hours involving a shift in the set work hours of all employees at the workplace or flexible work hours involving individually determined work hours.

The TDM Plan shall indicate the estimated VTR for each strategy, based on published research or guidelines where feasible. For TDM Plans containing ongoing operational VTR strategies, the Plan shall include an ongoing monitoring and enforcement program to ensure the Plan is implemented on an ongoing basis during project operation. If an annual compliance report is required, as explained below, the TDM Plan shall also specify the topics to be addressed in the annual report.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: N/A

b. TDM Implementation – Physical Improvements

Requirement: For VTR strategies involving physical improvements, the project applicant shall obtain the necessary permits/approvals from the City and install the improvements prior to the completion of the project.

When Required: Prior to building permit final

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

c. TDM Implementation – Operational Strategies

Requirement: For projects that generate 100 or more net new a.m. or p.m. peak hour vehicle trips and contain ongoing operational VTR strategies, the project applicant shall submit an annual compliance report for the first five years following completion of the project (or completion of each phase for phased projects) for review and approval by the City. The annual report shall document the status and effectiveness of the TDM program, including the actual VTR achieved by the project during operation. If deemed necessary, the City may elect to have a peer review consultant, paid for by the project applicant, review the annual report. If timely reports are not submitted and/or the annual reports indicate that the project applicant has failed to implement the TDM Plan, the project will be considered in violation of the Conditions of Approval and the City may initiate enforcement action as provided for in these Conditions of Approval. The project shall not be considered in violation of this Condition if the TDM Plan is implemented but the VTR goal is not achieved.

When Required: Ongoing

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Planning

UTILITY AND SERVICE SYSTEMS

41. Construction and Demolition Waste Reduction and Recycling

Requirement: The project applicant shall comply with the City of Oakland Construction and Demolition Waste Reduction and Recycling Ordinance (chapter 15.34 of the Oakland Municipal Code) by submitting a Construction and Demolition Waste Reduction and Recycling Plan (WRRP) for City review and approval, and shall implement the approved WRRP. Projects subject to these requirements include all new construction, renovations/alterations/modifications with construction values of $50,000 or more (except R-3 type construction), and all demolition (including soft demolition) except demolition of type R-3 construction. The WRRP must specify the methods by which the project will divert construction and demolition debris waste from landfill disposal in accordance with current City requirements. The WRRP may be submitted electronically at www.greenhalosystems.com or manually at the City's Green Building Resource Center. Current standards, FAQs, and forms are available on the City's website and in the Green Building Resource Center.

When Required: Prior to approval of construction-related permit

Initial Approval: Public Works Department, Environmental Services Division

Monitoring/Inspection: Public Works Department, Environmental Services Division

42. Underground Utilities

Requirement: The project applicant shall place underground all new utilities serving the project and under the control of the project applicant and the City, including all new gas, electric, cable, and telephone facilities, fire alarm conduits, street light wiring, and other wiring, conduits, and similar facilities. The new facilities shall be placed underground along the project's street frontage and from the project structures to the point of service. Utilities under the control of other agencies, such as PG&E, shall be placed underground if feasible. All utilities shall be installed in accordance with standard specifications of the serving utilities.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

43. Recycling Collection and Storage Space

Requirement: The project applicant shall comply with the City of Oakland Recycling Space Allocation Ordinance (chapter 17.118 of the Oakland Planning Code). The project drawings submitted for construction-related permits shall contain recycling collection and storage areas in compliance with the Ordinance. For residential projects, at least two cubic feet of storage and collection space per residential unit is required, with a minimum of ten cubic feet. For nonresidential projects, at least two cubic feet of storage and collection space per 1,000 square feet of building floor area is required, with a minimum of ten cubic feet.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

44. Green Building Requirements

a. Compliance with Green Building Requirements During Plan-Check

Requirement: The project applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (chapter 18.02 of the Oakland Municipal Code).

i. The following information shall be submitted to the City for review and approval with the application for a building permit:
   - Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards.
   - Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit.
   - Copy of the Unreasonable Hardship Exemption, if granted, during the review of the Planning and Zoning permit.
   - Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (ii) below.
   - Copy of the signed statement by the Green Building Certifier approved during the review of the Planning and Zoning permit that the project complied with the requirements of the Green Building Ordinance.
   - Signed statement by the Green Building Certifier that the project still complies with the requirements of the Green Building Ordinance, unless an Unreasonable Hardship Exemption was granted during the review of the Planning and Zoning permit.
   - Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

ii. The set of plans in subsection (i) shall demonstrate compliance with the following:
   - CALGreen mandatory measures.
   - All pre-requisites per the green building checklist approved during the review of the Planning and Zoning permit, or, if applicable, all the green building measures approved as part of the Unreasonable Hardship Exemption granted during the review of the Planning and Zoning permit.
   - Green Point Checklist Requirement: 23 points per the appropriate checklist approved during the Planning entitlement process.
   - All green building points identified on the checklist approved during review of the Planning and Zoning permit, unless a Request for Revision Plan-check application is submitted and approved by the Bureau of Planning that shows the previously approved points that will be eliminated or substituted.
   - The required green building point minimums in the appropriate credit categories.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: N/A

b. Compliance with Green Building Requirements During Construction

Requirement: The project applicant shall comply with the applicable requirements of CALGreen and the Oakland Green Building Ordinance during construction of the project.

The following information shall be submitted to the City for review and approval:

i. Completed copies of the green building checklists approved during the review of the Planning and Zoning permit and during the review of the building permit.

ii. Signed statement(s) by the Green Building Certifier during all relevant phases of construction that the project complies with the requirements of the Green Building Ordinance.

iii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

c. Compliance with Green Building Requirements After Construction

Requirement: Within sixty (60) days of the final inspection of the building permit for the project, the Green Building Certifier shall submit the appropriate documentation to Build It Green and attain the minimum required certification/point level. Within one year of the final inspection of the building permit for the project, the applicant shall submit to the Bureau of Planning the Certificate from the organization listed above demonstrating certification and compliance with the minimum point/certification level noted above.

When Required: After project completion as specified

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

45. Green Building Requirements – Small Projects

a. Compliance with Green Building Requirements During Plan-Check

The project applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (Chapter 18.02 of the Oakland Municipal Code) for projects using the Small Commercial Checklist.

i. The following information shall be submitted to the City for review and approval with application for a building permit:

- Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards.
- Completed copy of the green building checklist approved during the review of a Planning and Zoning permit.
- Permit plans that show in general notes, detailed design drawings and specifications as necessary compliance with the items listed in subsection (b) below.
- Other documentation to prove compliance.

ii. The set of plans in subsection (a) shall demonstrate compliance with the following:

- CALGreen mandatory measures.
- All applicable green building measures identified on the checklist approved during the review of a Planning and Zoning permit, or submittal of a Request for Revision Plan-check application that shows the previously approved points that will be eliminated or substituted.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: N/A

b. Compliance with Green Building Requirements During Construction

Requirement: The project applicant shall comply with the applicable requirements of CALGreen and the Green Building Ordinance during construction.

The following information shall be submitted to the City for review and approval:

i. Completed copy of the green building checklists approved during review of the Planning and Zoning permit and during the review of the Building permit.

ii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

46. Sanitary Sewer System

Requirement: The project applicant shall prepare and submit a Sanitary Sewer Impact Analysis to the City for review and approval in accordance with the City of Oakland Sanitary Sewer Design Guidelines. The Impact Analysis shall include an estimate of pre-project and post-project wastewater flow from the project site. In the event that the Impact Analysis indicates that the net increase in project wastewater flow exceeds City-projected increases in wastewater flow in the sanitary sewer system, the project applicant shall pay the Sanitary Sewer Impact Fee in accordance with the City's Master Fee Schedule for funding improvements to the sanitary sewer system.

When Required: Prior to approval of construction-related permit

Initial Approval: Public Works Department, Department of Engineering and Construction

Monitoring/Inspection: N/A

47. Storm Drain System

Requirement: The project storm drainage system shall be designed in accordance with the City of Oakland's Storm Drainage Design Guidelines. To the maximum extent practicable, peak stormwater runoff from the project site shall be reduced by at least 25 percent compared to the pre-project condition.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

Project-Specific Condition of Approval

48. Material Board

Requirement: The applicant shall submit, for review and approval of the Planning Director, a material board showing all exterior materials on the building. These materials should also be depicted in the set of plans submitted with the Building Permit application.

When Required: Prior to issuance of the Building Permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

49. Storefront Design

Requirement: The applicant shall submit, for review and approval of the Planning Director, plans that show the following:

A. The ground floor facing 7th Street having 55 percent transparency between two (2) feet and nine (9) feet in height. This area shall be comprised of clear, non-reflective windows that allow views in and out of indoor space.

B. A bulkhead and the base of the ground floor, including the storefront windows.

When Required: Prior to issuance of the Building Permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

50. Affordable Residential Ownership Units - Agreement and Monitoring

a. Requirement #1: Pursuant to Section 17.107 of the Oakland Planning Code and the State Density Bonus Law California Government Code Section 65915 et seq. ("State Density Bonus Law"), the proposed project shall provide a minimum of 79 target dwelling units available at very low, low, or moderate income for receiving a density bonus, concession and/or waiver of development standards.

b. Requirement #2: Prior to submittal of a construction-related permit, the applicant shall contact the Housing and Community Development Department (Housing Development Services Division) to enter into an Affordability Agreement based on the City's model documents, as may be amended from time to time, governing the target dwelling units. The Affordability Agreement shall provide that target dwelling units are offered at an affordable housing cost and that only households that (i) meet the eligibility standards for the target dwelling units, and (ii) agree to execute an equity share agreement with the City are eligible to occupy the target dwelling units.

c. The Affordability Agreement shall be recorded with the Alameda County Recorder's Office as an encumbrance against the property, and a copy of the recorded agreement shall be provided to and retained by the City. The Affordability Agreement may not be subordinated in priority to any other lien interest in the property.

d. Requirement #3 The restricted target dwelling units must comply with the City of Oakland Affordable Homeownership Development Program Guidelines. The applicant shall ensure that the initial occupant of all for-sale target dwelling units are Very Low-, Low, or Moderate-Income Households, as required, and that the units are offered at an Affordable Housing Cost in accordance with California Health and Safety Code Section 50052.5 and its implementing regulations.

e. Requirement #4: For-sale target living units require a one-time fee to determine the eligibility of the initial homebuyer. The City's fee is $250 per unit currently per the Master Fee Schedule, which is updated annually and available from the Budget Office of the City Oakland's Finance Department: https://www.oaklandca.gov/departments/finance-department.

f. Requirement #5: The owner of a for-sale affordable unit may not rent out the unit. The unit must remain owner occupied.

g. Requirement #6: The applicant shall provide for initial homebuyer education to apprise buyers of the long-term affordability restrictions applicable to the targeted dwelling units, and shall submit information regarding the initial homebuyer's income, household size and other funding sources to

City staff in the Housing and Community Development Division, for their review and approval. If a potential initial homebuyer does not meet the City's underwriting requirements, then the proposed homebuyer will not be allowed to purchase the home, and the applicant will be required to find qualified substitute buyer.

h. Requirement #7: The applicant shall submit for review and approval by the City Attorney, Bureau of Planning and any other relevant City departments as determined by the City, proof that all initial homebuyers of for-sale target dwelling units have entered into a density bonus equity share agreement, consistent with State Density Bonus Law, with the City prior to purchasing the unit or property, and the grant deed conveying title to the unit to the initial homebuyer shall reference the equity share agreement.

i. The equity share agreement shall specify that the title to the subject property or unit may not be transferred without prior approval of the City. Following City approval, the applicant shall record the equity share agreement against the parcel containing the target dwelling unit, as well as a Deed of Trust and Request for Notice in the event of default, sale, or refinancing, with the Alameda County Recorder's Office, and shall provide a copy of the recorded equity share agreement to the City. The equity share agreement shall further provide that upon future resale of a target dwelling unit, the initial homebuyer must notify the Housing and Community Development Division of its intent to sell the unit. Upon resale, the initial homebuyer may recoup the value of its own down payment, any improvements to the target dwelling unit, and the initial homebuyer's proportionate share of appreciation. The initial homebuyer shall repay to the City the City's initial subsidy and the City's proportionate share of appreciation. The City's initial subsidy is to be equal to the difference between the fair market value of the target dwelling unit at the time of initial sale and the initial sale price to the initial homebuyer, plus the amount of down payment assistance or mortgage assistance, if any. If upon resale the fair market value of the target dwelling unit is lower than the initial fair market value, then the value at the time of the resale shall be used as the initial fair market value. The City's proportionate share of appreciation is equal to the ratio of the local government's initial subsidy to the fair market value of the target dwelling unit at the time of the initial sale. The City will apply these repayment proceeds to the promotion of low to moderate income homeownership opportunities within five years of its receipt.

j. Requirement #8: The floor area, number of bedrooms, and amenities (such as fixtures, appliances, location and utilities) of the affordable units shall be substantially equal in size and quality to those of the market rate units. Further, the proportion of unit types (i.e. three-bedroom and four-bedroom, etc.) of the affordable units shall be roughly the same as the project's market rate units.

k. Requirement #9: Households in affordable units must have equal access to the project's services and facilities as households in all other units within the project.

l. Requirement #10: Affordable units must be evenly distributed throughout the project.

m. Requirement #11: The applicant shall comply with the requirements of Section 65915(c)(3)(A) of the State Density Bonus Law requiring, without limitation, replacement units in those circumstances where the parcel subject to the density bonus contains or contained affordable units within the last five years.

n. Requirement #12: The applicant shall comply with all applicable provisions of State Density Bonus Law and all provisions of the City's density bonus law that are not preempted by state law.

o. Requirement #13: Affordable units shall be constructed prior to or concurrent with the construction of the market rate units in each phase of the project.

p. Requirement #14: The City will not issue final certificates of occupancy for more than fifty percent (50%) of the market rate units in any phase of development until final certificates of occupancy are issued for all of the affordable units in that phase.

When Required: First Construction Related Permit Application and Ongoing
Initial Approval: Housing and Community Development Department and Ongoing
Ongoing Monitoring and Inspections: Housing and Community Development, Housing Development Services Division

51. Affordable Residential Rental Units - Agreement and Monitoring

a. Requirement #1: Pursuant to Section 17.107 of the Oakland Planning Code and the State Density Bonus Law California Government Code Section 65915 et seq. ("State Density Bonus Law"), the proposed project shall provide a minimum of 79 target dwelling units available at very low, low, and/or moderate income for receiving a density bonus, concession and/or waiver of development standards.

b. Requirement #2: The approved residential affordable units that are part of this approval shall remain and continue to be affordable at the specified level in accordance with California Health and Safety Code Section 50053 and its implementing regulations for a term of not less than 55 years or a longer period of time if required by the construction or mortgage finance assistance program, mortgage insurance program, or rental subsidy program. This Condition of Approval must also be in compliance with Section 65915(c)(1) of the State Density Bonus Law specifically, as well as all other applicable provisions of the State Density Bonus Law.

c. Requirement #3: Prior to submittal of a construction-related permit, the applicant shall contact the Housing and Community Development Department (Housing Development Services Division) to enter into a Regulatory Agreement based on the City's model documents, as may be amended from time to time, governing the target dwelling units. The Agreement shall contain restrictive covenants to ensure the continued affordability of the target dwelling units at the specified rent levels for a period of not less than fifty-five (55) years pursuant Section 65915 (c)(1) of the State Density Bonus Law, and restrict the occupancy of those units only to residents who satisfy the affordability requirement as approved for this project. Only households meeting the eligibility standards for the target dwelling units shall be eligible to occupy the target dwelling units.

If the property has an approved condominium map and the developer chooses to rent the affordable units at initial occupancy, the units cannot convert to ownership during the term of the Agreement, even if the market rate units in the development convert to ownership.

The Regulatory Agreement shall be recorded with the Alameda County Recorder's Office as an encumbrance against the property, and a copy of the recorded agreement shall be provided to and retained by the City. The Regulatory Agreement may not be subordinated in priority to any other lien interest in the property.

d. Requirement #4: Rental target dwelling units shall be managed / operated by the developer or developer's agent or the developer's successor. The developer of rental target dwelling units shall submit for review and approval by the Housing and Community Development Department and any other relevant City departments, an annual report identifying which units are target dwelling units, the monthly rent, vacancy information, monthly income for tenants of each target rental dwelling unit throughout the prior year, and other information required by the City. Said agreement shall maintain the tenants' privacy. The applicant shall pay to the Housing and Community Development Department an annual monitoring fee pursuant to the Master Fee Schedule (updated annually and available from the Budget Office of the City Oakland's Finance Department: https://www.oaklandca.gov/departments/finance-department) for City monitoring of target dwelling units.

e. Requirement #5: The floor area, number of bedrooms, and amenities (such as fixtures, appliances, location and utilities) of the affordable units shall be shall be substantially equal in size and quality to those of the market rate units. Further, the proportion of unit types (i.e. three-bedroom and four-bedroom, etc.) of the affordable units shall be roughly the same as the project's market rate units.

f. Requirement #6: Tenant households in affordable units must have equal access to the project's services and facilities as tenant households in all other units within the project.

g. Requirement #7: Affordable units must be evenly distributed throughout the project.

h. Requirement #8: Applicant shall comply with the requirements of Section 65915(c)(3)(A) of the State Density Bonus Law requiring, without limitation, replacement units in those circumstances where the parcel subject to the density bonus requests contains or contained affordable units within the last five years.

i. Requirement #9: Applicants shall comply with all applicable provisions of State Density Bonus Law and all provisions of the City's density bonus law that are not preempted by state law.

j. Requirement #10: Affordable units shall be constructed concurrent with the construction of the market rate units in each phase of the project.

k. Requirement #11: The City will not issue final certificates of occupancy for more than fifty percent (50%) of the market rate units in any phase of development until final certificates of occupancy are issued for all of the affordable units in that phase.

When Required: First Construction-Related Permit Application and Ongoing
Initial Approval: Housing and Community Development Department – Housing Development Services Division
Ongoing Monitoring/Inspections: Housing Development Services Division

Appendix B

Illingworth & Rodkin, Inc.
7th and Campbell Mixed-Use Project, Air Quality Community Risk Assessment, July 6, 2020

7TH AND CAMPBELL MIXED-USE PROJECT AIR QUALITY COMMUNITY RISK ASSESSMENT

Oakland, California

September 18, 2020

Prepared for:

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I&R Project: 20-094

Introduction

This report provides the results of a toxic air contaminant (TAC) health risk analysis (HRA) for the proposed development of a new mixed-use project consisting of several separate small parcels (Assessor Parcel Numbers 6-17-17, -18, -19, -20, -21 and -22) with addresses at 1662 through 1676 7th Street in Oakland, California. The project proposes to construct approximately 19,400 square feet (sq ft) of space for future business enterprises on the first floor, and 79 units of affordable housing on the second through fifth floors on the approximately 0.7-acre site. The ground floor will include a 5,550 square-foot fitness center, a 3,000 square-foot sit-down restaurant, a 5,550 square-foot grocery, and a 2,650 square-foot business incubator space. Floors two through five will consist of 79 units of affordable housing. 17 stacked and one accessible parking spaces will also be located on the ground level. This assessment predicts community risk impacts with respect to the City of Oakland Standard Conditions of Approval (SCA). Since the project includes residential units near TAC sources, the project is subject to the City's SCA for air quality that is provided as *Attachment 1*. The following condition applies:

> *SCA #19. Exposure to Air Pollution (Toxic Air Contaminants) - Health Risk Reduction Measures.*
>
> This measure requires projects near sources of toxic air contaminants to perform a health risk assessment and, if necessary, incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants.

Setting

The project site is in Alameda County which is a part of San Francisco Bay Area Air Basin. Air quality in the region is affected by natural factors such as proximity to the Bay and ocean, topography, and meteorology, as well as proximity to sources of air pollution. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants and TACs

Particulate Matter

Particulate matter (PM) is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. Particles 10 microns or less in diameter are defined as "respirable particulate matter" or "PM_{10}." Fine particles are 2.5 microns or less in diameter ($PM_{2.5}$) and, while also respirable, can contribute significantly to regional haze and reduction of visibility. Inhalable particulates come from smoke, dust, aerosols, and metallic oxides. Although particulates are found naturally in the air, most particulate matter found in the vicinity of the project site is emitted either directly or indirectly by motor vehicles, industry, construction, agricultural activities, and wind erosion of disturbed areas. Most $PM_{2.5}$ is comprised of combustion products such as smoke. Extended exposure to PM can increase the risk of chronic respiratory disease (Bay Area Air

Quality Management District (BAAQMD) 2011a).[1, 2] PM exposure is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer or serious illness) and include but are not limited to criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level. The identification, regulation, and monitoring of TACs is relatively new compared to that for criteria air pollutants that have established ambient air quality standards. TACs are regulated or evaluated on the basis of risk to human health rather than comparison to an ambient air quality standard or emission-based threshold.

Diesel exhaust is the predominant cancer-causing TAC in California. The California Air Resources Board (CARB) estimates that about 70% of total known cancer risk related to air toxics in California is attributable to diesel particulate matter (DPM).[3] According to CARB, diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the state's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.[4] In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the Federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented several regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and $PM_{2.5}$ emissions.

[1] BAAQMD 2016. Planning Healthy Places. May. Accessed at http://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf?la=en on August 24, 2016
[2] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.
[3] CAEB. *Summary: Diesel Particulate Matter Health Impacts*. https://www.arb.ca.gov/research/diesel/diesel-health_summ.htm
[4] California Air Resources Board. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October 2000.

This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

CARB has also adopted and implemented regulations to reduce DPM and NO_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and nitrogen oxides (NO_X) exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent Federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NO_X.

Sensitive Receptors

"Sensitive receptors" are defined as facilities where sensitive population groups, such as children, the elderly, the acutely ill, and the chronically ill, are likely to be located. These land uses include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The project would include sensitive receptors in the form of new residences. For the purposes of a thorough health risk assessment, residents of the project site assume all types: 3rd-trimeter fetus, infant, child, and adult.

TAC and $PM_{2.5}$ Impact Analysis

Oakland uses the BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines to consider exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazards. For cancer risk, which is a concern for DPM and other mobile-source TACs, the BAAQMD considers an increased risk of contracting cancer that is 10.0 in one million chances or greater, to be a threshold for a single source. The BAAQMD CEQA Guidelines also consider single-source TAC exposure to be excessive if annual fine particulate matter ($PM_{2.5}$) concentrations exceed 0.3 micrograms per cubic meter ($\mu g/m^3$) or if the computed hazard index (HI) is greater than 1.0 for non-cancer risk hazards. Cumulative exposure is assessed by combining the risks and annual $PM_{2.5}$ concentrations for all sources within 1,000 feet of a project. The thresholds for cumulative exposure are an excess cancer risk of 100 in one million, annual $PM_{2.5}$ concentrations of 0.8 $\mu g/m^3$, and a hazard index greater than 10.0. These thresholds were used to address impacts from TAC sources that could affect future project residents. The methodology for computing cancer risk, annual $PM_{2.5}$ concentrations, and non-cancer hazards is contained in *Attachment 2*. Note that this methodology describes new guidance to computed cancer risk that was recently finalized by the State Office of Environmental Health Hazards Assessment (OEHHA) and provides greater protections for infants and children.

A review of the project site has identified three air pollutant or TAC sources within 1,000 feet of the site, and one slightly beyond the 1,000-foot area that could adversely affect the site; 7th Street,

the United States Post Office (USPS) distribution center, a diesel fueled emergency generator located at the USPA facility, and Interstate 880 (I-880). The Port of Oakland and associated rail facilities are located well outside the 1,000-foot radius, beyond I-880. The BART line near the project is electric and assumed to have no TAC emissions.

A summary of the predicted impacts of these sources on the project are shown in Table 1. Locations of these sources and the project are shown in in Figure 1.

Table 1. Summary of TAC Impacts from Sources within 1,000 feet on Project

Source	Maximum Cancer Risk (per million)*	Maximum Annual $PM_{2.5}$ ($\mu g/m^3$)*	Maximum Hazard Index*
I-880	**19.7**	0.14	<0.01
7th Street	8.0	0.09	<0.01
USPS Distribution Facility	**15.1**	0.16	<0.01
Plant #21130 (Generator)	1.0	0.001	<0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	***Yes***	*No*	*No*
Cumulative Total	42.8	0.39	<0.02
BAAQMD Cumulative Source Threshold	***>100***	***>0.80***	***>10.0***
Exceed Threshold?	*No*	*No*	*No*

*On-site MEI located on 2nd Floor residence. Bold text indicates BAAQMD Threshold(s) and any exceedances.

Freeways – I-880

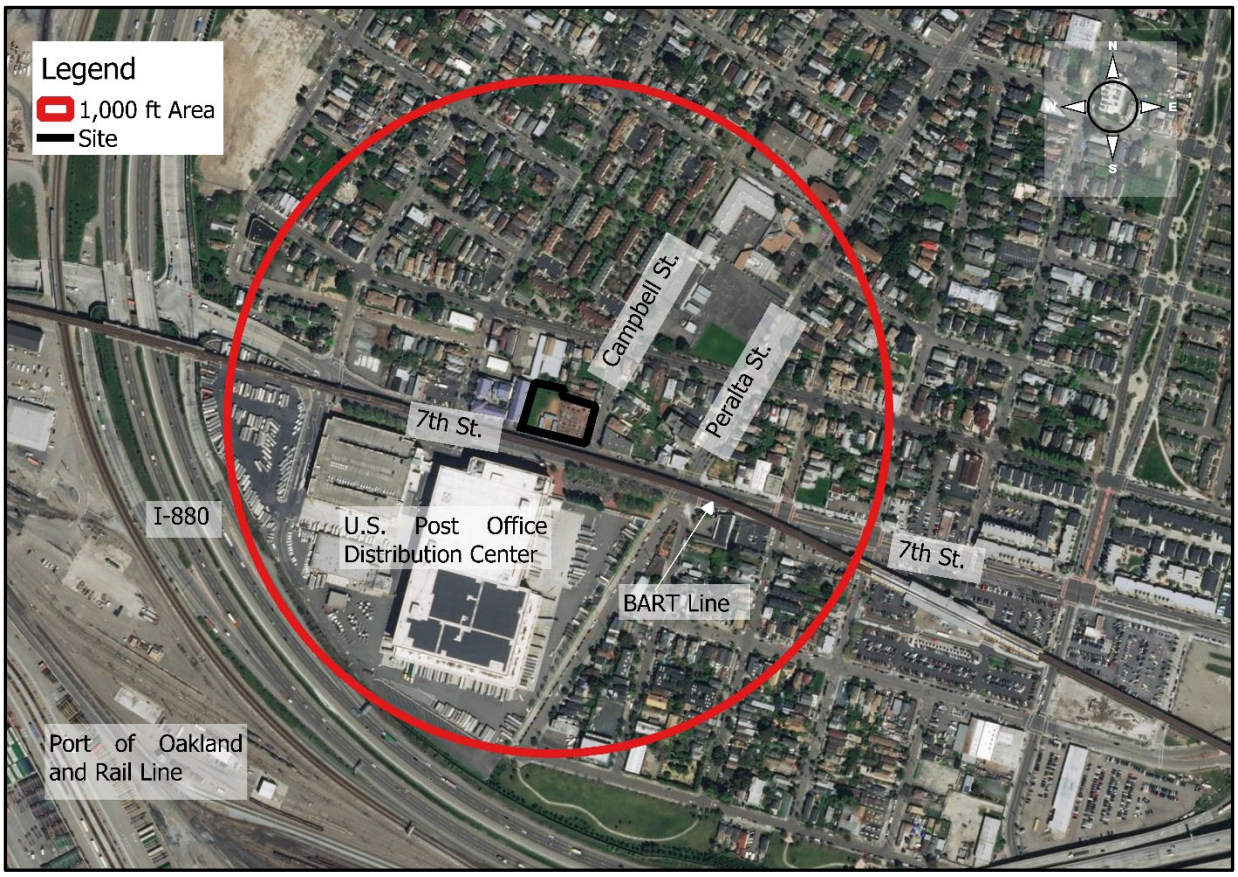
A refined analysis of the impacts of TACs and $PM_{2.5}$ from I-880 on the maximally exposed individual (MEI) living at the new residences provided by the project is necessary to evaluate potential cancer risks and $PM_{2.5}$ concentrations associated with its proximity to the freeway. A review of the traffic information reported by the California Department of Transportation (Caltrans) through its Performance Measurement System (PeMS)[5] indicates that I-880 nearest the project site had an average annual daily traffic (AADT) volume of 127,328 vehicles per day (based on 2019 measurements) with about 10.1 percent of the volume being trucks, of which 7.2 percent are considered heavy duty trucks and 2.9 percent are medium duty trucks.[6] PeMS data are collected in real-time from nearly 40,000 individual detectors spanning the freeway system across all major metropolitan areas of California[7].

[5] Caltrans. 2020. Planning Analysis Report for I-880-N and I-880-S @ CA PM R33.15 (Abs PM 43.4) Jan 1, 2019 – Dec. 31, 2019.

[6] Estimate provided by CT-EMFAC2017 using an overall truck percentage of 10.1. Truck percentage provided by Caltrans PeMS data.

7 https://dot.ca.gov/programs/traffic-operations/mpr/pems-source

Figure 1. Project Site and Nearby TAC and $PM_{2.5}$ Sources



TAC and $PM_{2.5}$ concentrations were calculated at receptor locations placed throughout the site using a grid of receptors with 23-foot (7-meter) spacing. Residential units in the project building would be on the second through fifth floors with the first floor containing commercial spaces, parking, and other amenities. Therefore, I-880 impacts were modeled for the second through fifth floors levels, as the first floor will contain no residential areas. Residential receptor heights were established based on the floor heights provided by the applicant and an approximately 4-foot 11-inch (1.5m) person height, which was added to the floor elevation to represent the breathing heights of residents. Therefore, total receptor heights were 7.14meeters (23.4 feet), 9.12 meters (29.9 feet), 12.17 meters (39.9 feet), and 15.22 meters (49.9 feet) for the second through fifth floors, respectively. Figure 2 shows the freeway links used for the modeling and receptor locations at the project site where concentrations were calculated.

Figure 2. On-Site Sensitive Receptors, Sources Modeled, and Receptor with Maximum and Minimum TAC Impacts

Modeling I-880 Emissions

Analysis of I-880 involved developing emissions estimates of DPM, organic TACs (as TOG), and $PM_{2.5}$ emissions for the first operational year of the project. For this analysis, full operation of the development is assumed to occur in 2021 or later. Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Overall vehicle emissions, in particular diesel truck emissions, will decrease in the future. Therefore, the earlier the year analyzed, the higher the emission rates produced. Therefore, year 2021 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated (30 years).

AADT for 2021 were estimated from 2019 levels assuming an increase of 1 percent per year. The fraction of traffic volume each hour was calculated and applied to the 2021 AADT estimate to estimate hourly traffic emission rates for I-880. Hourly traffic distributions specific to the closest segment of I-880 were obtained from Caltrans PeMS. For all hours of the day, other than during peak a.m. and p.m. periods, an average speed of 65 mph was assumed for all vehicles. Based on travel time data from the Alameda County Transportation Commission's 2019 Congestion Management Program Report, traffic speeds on Northbound and Southbound I-880 during the peak

a.m. and p.m. periods were identified.[8] For the 2-hour period during the peak a.m. period, an average travel speed of 62.5 mph was used for both northbound and southbound traffic. During the 2-hour peak p.m. period a speed of 60 mph was used for northbound traffic and a speed of 22.5 was used for southbound traffic.

In order to estimate TAC and $PM_{2.5}$ emissions over a 30-year exposure period used for calculating increased cancer risks to the project's residential MEI from traffic on I-880, the Caltrans version of the CARB's EMFAC2017 emissions model, known as CT-EMFAC2017, was used to develop vehicle emission factors for the year 2021 using the mix of vehicles in Alameda County. EMFAC2017 became available for use in March 2018 and approved by the EPA in August 2019. It includes the latest data on California's car and truck fleets and travel activity. CT-EMFAC2017 provides emission factors for mobile source pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (e.g., TOG), running evaporative losses for TOG, and fugitive road dust for $PM_{2.5}$ that includes tire and brake wear emissions. Inputs to the emissions model include region (i.e., Alameda County), type of road (i.e., freeway), traffic mix assigned by CT-EMFAC2017 for the county and adjusted for the local truck mix on I-880, year of analysis, and season (i.e., annual).

Hourly emissions rates were developed for DPM, organic TACs, and $PM_{2.5}$ emissions for 2021 traffic along the applicable segment of I-880. TAC and $PM_{2.5}$ concentrations at the MEI location were developed using the hourly emissions rates with an air quality dispersion model (AERMOD). Maximum increased lifetime cancer risks and annual $PM_{2.5}$ concentrations for the receptors were then computed using modeled TAC and $PM_{2.5}$ concentrations and the BAAQMD methods and exposure parameters described in *Attachment 1*.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the U.S. EPA AERMOD dispersion model, which is recommended by the BAAQMD for this type of analysis. Northbound and southbound traffic on I-880 near the project site was evaluated with the model. Emissions from vehicle traffic were modeled in AERMOD using a series of volume sources along a line (line volume sources), with line segments used to represent northbound and southbound travel lanes on I-880. The modeling used a five-year data set (2013-2017) of hourly meteorological data from the Oakland Airport in Oakland, CA prepared by the BAAQMD for use with the AERMOD model. Other inputs to the model included road geometry and elevations, hourly traffic emissions, and receptor locations and heights. Figure 2 shows the roadway links used for the modeling and receptor location at the MEI where concentrations were calculated.

Computed Cancer and Non-Cancer Health Impacts

The calculation of risk impacts from I-880 was developed for an individual that resides at the project site starting as a third trimester fetus, to infant, child, and adult over a 30-year period. Therefore, age-appropriate sensitivity factors were applied. The highest concentrations from I-880 occurred at the southwest corner of the site on the second floor (i.e., MEI). Concentrations on the second through fifth floors were also estimated for comparison purposes and filtration

[8] Alameda County Transportation Commission. *2019 CMP Monitoring and Conformance Report September 2019.*

recommendations. The maximum total $PM_{2.5}$ concentration at the second floor MEI was 0.14 $\mu g/m^3$, well below the BAAQMD single source threshold of 0.3 $\mu g/m^3$. The maximum predicted annual DPM concentration from I-880 traffic at the second floor MEI was 0.026 $\mu g/m^3$. This concentration is lower than the REL and the HI would be less than 0.01.

The maximum increased cancer risk at the MEI was computed as 19.7 in one million, occurring at the same receptor that had the maximum total $PM_{2.5}$ concentration. Cancer risk from I-880 ranged from 19.7 to 15.3 on the second floor and would exceed the single-source threshold of less than 10 per million. The maximum cancer risk for new residents living on the second through fifth floor levels are shown in Table 2.

Table 2. Maximum and Minimum I-880 Cancer Risk by Floor on Project Residents

Source/Receptor Locations	Maximum Cancer Risk (per million)	Minimum Cancer Risk (per million)	BAAQMD Single-Source Threshold	Exceed Threshold?
2nd Floor Level	**19.7**	**15.3**	***>10.0***	***Yes***
3rd Floor Level	**17.8**	**13.9**		***Yes***
4th Floor Level	**14.6**	**11.5**		***Yes***
5th Floor Level	**12.3**	**10.0**		***Yes***

Values in Bold exceed Threshold

7th Street

A refined analysis of the impacts of TACs and $PM_{2.5}$ from 7th Street on the MEI living at the new residences provided by the project is necessary to evaluate potential cancer risks and $PM_{2.5}$ concentrations associated with its proximity to the roadway. A review of the 2009 traffic counts reported by the City of Oakland through its on-line GIS application[9] indicates that 7th Street in the vicinity of the project had an average annual daily traffic (AADT) volume of 9,316 vehicles per day. 7th Street was assumed to have the same truck volume percentage (10.1) as I-880 in the vicinity of the project.[10]

TAC and $PM_{2.5}$ concentrations were calculated at the same receptor locations as those used to assess impacts from I-880. Figure 2 shows the links used to model 7th Street and receptor locations at the project site where concentrations were calculated.

Modeling 7th Street Emissions

Analysis of 7th Street involved developing emissions estimates of DPM, organic TACs (as TOG), and $PM_{2.5}$ emissions for the first operational year of the project. As with the analysis of I-880, full operation of the development is assumed to occur in 2021 or later. AADT for 2021 were estimated from 2009 levels assuming an increase in traffic of 2 percent per year. The fraction of traffic volume each hour on I-880 near the project site was used to estimate hourly traffic volumes and

[9] City of Oakland GIS homepage on ESRI's ArcGIS Online platform. Accessed June 17, 2020.
[10] Estimate provided by CT-EMFAC2017 using an overall truck percentage of 10.1. Truck percentage provided by Caltrans PeMS data.

emissions for 7th Street. Hourly I-880 traffic distributions were obtained from Caltrans PeMS. For all hours of the day, other than during peak a.m. and p.m. periods, an average speed of 30 mph was assumed for all vehicles. Based on travel time data from the Alameda County Transportation Commission's 2019 Congestion Management Program Report, traffic speeds on 7th Street during the peak a.m. and p.m. periods were identified.[11] For the 2-hour period during the peak a.m. period, an average travel speed of 15 mph was used for both eastbound and westbound traffic. During the 2-hour peak p.m. period a speed of 12.5 mph was used.

As with the analysis of I-880, CT-EMFAC2017 was used to develop vehicle emission factors for the year 2021 using the mix of vehicles in Alameda County. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and TOG, running evaporative losses for TOG, and fugitive road dust for $PM_{2.5}$ that includes tire and brake wear emissions. Inputs to the emissions model include region (i.e., Alameda County), type of road (i.e., major), traffic mix assigned by CT-EMFAC2017 for the county and adjusted for the assumed truck mix (10.1 percent), year of analysis, and season (i.e., annual).

Hourly emissions rates were developed for DPM, organic TACs, and $PM_{2.5}$ emissions for 2021 traffic along the applicable segment of 7th Street. TAC and $PM_{2.5}$ concentrations at the MEI location were developed using the hourly emissions rates and AERMOD. Maximum increased lifetime cancer risks and annual $PM_{2.5}$ concentrations for the maximum concentration receptor were computed using modeled TAC and $PM_{2.5}$ concentrations and the BAAQMD methods and exposure parameters described in *Attachment 1*.

Dispersion Modeling

Eastbound and westbound traffic on 7th Street near the project site was evaluated with AERMOD using a series of area sources along a line (line area sources), with line segments used to represent eastbound and westbound travel lanes on 7th Street. The modeling used a five-year data set (2013-2017) of hourly meteorological data from the Oakland Airport in Oakland, California prepared by the BAAQMD for use with the AERMOD model. Other inputs to the model included road geometry and elevations, hourly traffic emissions, and receptor locations and heights. Figure 2 shows the roadway links used for the modeling and receptor location at the MEI where concentrations were maximum impacts from 7th Street would occur.

Computed Cancer and Non-Cancer Health Impacts

As with the analysis of I-880, the calculation of risk impacts from 7th Street was developed for an individual that resides at the project site starting as a third trimester fetus, to infant, child, and adult over a 30-year period. The highest concentrations from 7th Street occurred at the southeast corner of the site on the second floor. The maximum increased cancer risk at this location was computed as 8.0 in one million, below the BAAQMD single source threshold of below 10.0 in a million. The maximum total $PM_{2.5}$ concentration was 0.09 $\mu g/m^3$, also well below the BAAQMD single source threshold of 0.3 $\mu g/m^3$. The maximum predicted annual DPM concentration from 7th Street traffic at the second floor MEI was 0.01 $\mu g/m^3$. This concentration is lower than the REL and the HI would be much less than 0.01.

[11] Alameda County Transportation Commission. *2019 CMP Monitoring and Conformance Report September 2019.*

USPS Distribution Facility

The main U.S. Post Office and large regional USPS processing, distribution, and vehicle maintenance facility is located across 7th Street from the proposed development at 1675 7th Street. It is sited adjacent to I-880 on approximately 27 acres. The facility's primary access is located off 7th Street approximately 685 feet from the project site. Personal light duty vehicles, trucks, and trucks with tractor trailers bring packages and other pieces of mail to and from the facility 24 hours a day for processing and distribution. A 4-level parking garage is located on the site, providing parking to the facility's employees.

Emissions and health risks associated with the operation of the USPS facility were estimated due to its proximity to the proposed project. Both EMFAC2017 and CT-EMFAC2017 were used to estimate emissions and AERMOD was used to estimate pollutant concentrations at the project site.

Modeling Facility Emissions

Before emissions could be estimated for the USPS distribution facility, information was needed on the number of vehicles entering and leaving the facility on an average day. In lieu of a specific study of this facility, existing trip studies of distribution centers were reviewed. An Institute of Transportation Engineers (ITE) analysis of high-cube warehouse vehicle trip generation conducted for the South Coast Air Quality Management District and National Association of Industrial and Office Properties provided a reasonable estimate of trips generated for the facility in Oakland.[12] For the ITE analysis, a high-cube warehouse was defined as a facility over 200,000 gross sq ft of floor area and is used primarily for the storage and/or consolidation of goods prior to their distribution to retail locations or other warehouses. These facilities have a high level of on-site automation and logistics management enabling highly efficient processing. The analysis looked five types of these facilities, including parcel hubs, and provided daily trip rates per 1,000 sq ft of building space.

Google Earth was used to estimate the square footage of two distribution buildings located at the site. The buildings were identified as distribution buildings because of their visible loading docks. The "main" building was estimated to be 264,650 sq ft, while the "smaller" building was estimated to be 29,470 sq ft, for a total of 294,120 sq ft. Table 3 provides the average daily traffic (ADT) estimated for the facility based on the estimates of building square footage and trip rates provided in the ITE analysis for parcel hubs. Daily trip estimates were made for light duty vehicles (LDA, LDT1, and LDT2), light-heavy duty trucks (or Truck 1) and medium to heavy duty trucks (or Truck 2).

Trip lengths for each vehicle type were multiplied by the trip estimates by vehicle type to estimate on-site vehicle miles of travel (VMT). Given the size of the distribution facility, approximately 27 acres, trip lengths were estimated using Google Earth. Different lengths were estimated for the three types of vehicles. Light duty vehicles were assumed to be those of employees and/or customers and assumed to use the on-site parking garage. Therefore, these vehicles would travel no more than a quarter mile (0.25 miles) per trip while on-site. Truck 1 and Truck 2 trips were assumed to travel beyond the parking garage to one of the many loading docks or trailer storage

[12] ITE. *High-Cube Warehouse Vehicle Trip Generation Analysis.* October 2016.

spaces located on the site. A round trip (i.e., trip in and trip out) at the facility was estimated to be up to 1.16 miles. With one trip equal to half of a round trip, the 1.16-mile distance was divided by two to give a trip length of 0.58 miles.

Table 3. Summary of Daily Trips at USPS Parcel Hub

Distribution Building Size (sq ft)	Average Daily Trips per 1,000 ft*			DAILY TRIPS
	Light Duty Vehicles	Truck 1	Truck 2	
Main = 264,650	6.631	4.007	0.982	3,075
Small = 29,470				342
TOTAL BUILDING SIZE in sq ft = 294,120				**3,418**

* ITE. *High-Cube Warehouse Vehicle Trip Generation Analysis.* Table 5, Parcel Hub Rates. October 2016.

EMFAC2017 was used to obtain emission rates in grams of pollutant per vehicle per day (or in grams per trip) for vehicle starts, idling, running loss, resting loss, and other evaporative emissions. This was done for each of the three vehicle types (LDA, Truck 1, and Truck 2). For this analysis, vehicles per day equaled daily trips. CT-EMFAC2017 was used to estimate vehicle exhaust emissions for light duty vehicles and trucks assuming an on-site speed of 5 mph. This was done by entering a truck percentage of 0.01 for light duty vehicle emissions rates and a truck percentage of 99.9 for truck emission rates. CT-EMFAC2017 also provided emissions rates in grams per mile for tire wear, break wear, and road dust. Daily facility emissions were estimated for TOG (both from exhaust sources and evaporative), $PM_{2.5}$ (both exhaust and fugitive), and DPM. Daily emissions estimated were converted to grams per second rates assuming 24-hour a day operation.

Dispersion Modeling

Emissions from the operation of the USPS distribution facility were modeled in AERMOD as an area source with emissions spread over the outdoor areas of the site. The modeling used a five-year data set (2013-2017) of hourly meteorological data from the Oakland Airport in Oakland, California prepared by the BAAQMD for use with the AERMOD model. Other inputs to the model included release height (3.4 meters for DPM and 1.3 meters for all other pollutants), receptor locations, and receptor heights. Figure 2 shows the area used for modeling emissions from the USPS and the receptor locations used for the analysis.

Computed Cancer and Non-Cancer Health Impacts

The calculation of risk impacts from the USPS facility was developed for an individual that resides at the project site starting as a third trimester fetus, to infant, child, and adult over a 30-year period. Therefore, age-appropriate sensitivity factors were applied. The highest concentrations from the USPS facility occurred at the same location as those from I-880; the southwest corner of the site on the second floor (i.e., MEI). Concentrations on the second through fifth floors were also estimated for comparison purposes and filtration recommendations. The maximum total $PM_{2.5}$

concentration at the second floor MEI was 0.16 µg/m^3, well below the BAAQMD single source threshold of 0.3 µg/m^3. The maximum predicted annual DPM concentration from the USPS facility at the MEI was 0.017 µg/m^3. This concentration is lower than the REL and the HI would be less than 0.01.

The maximum increased cancer risk at the MEI was computed as 15.1 in one million, occurring at the same receptor that had the maximum total $PM_{2.5}$ concentration. Cancer risk from the USPS facility ranged from 15.1 to 10.7 on the second floor and would exceed the single-source threshold of less than 10 per million. The maximum cancer risk for new residents living on the second through fifth floor levels are shown in Table 4.

Table 4. Maximum and Minimum USPS Facility Cancer Risk by Floor on Project Residents

Source/Receptor Locations	Maximum Cancer Risk (per million)	Minimum Cancer Risk (per million)	BAAQMD Single-Source Threshold	Exceed Threshold?
2nd Floor Level	**15.1**	**10.7**	***>10.0***	***Yes***
3rd Floor Level	**12.1**	8.8		***Yes***
4th Floor Level	8.7	6.2		*No*
5th Floor Level	6.1	4.4		*No*

Values in Bold exceed Threshold

Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2018* GIS website,[13] which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for new OEHHA guidance. The website provided the concentration and risk values needed for the analysis. One stationary source was identified. Risk values were then adjusted for distance using the appropriate BAAQMD *Distance Multiplier Tool for Diesel Internal Combustion Engines, Gasoline Dispensing Facilities (GDFs), or Generic Sources*. If sources are unable to be screened out, another request to BAAQMD could be made for emissions data which would then be used in refined modeling.

One source was identified; Plant #21130. It is a generator at the USPS facility. Distance-adjusted risk values for this stationary source at the project site are listed in Table 1.

Combined Cancer Risk, Hazard Index and Annual $PM_{2.5}$ Concentrations

The combination of impacts from all sources at the receptor most affected by TAC sources, or the MEI, is also reported in Table 1. The maximum impacts from each source were added to compute the combined impacts from all sources. Combined cancer risk is below the threshold of 100

13 BAAQMD, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

chances per million, the annual $PM_{2.5}$ concentration does not exceed 0.8 $\mu g/m^3$, and the HI is well below 10.0. While the impact from each source does not exceed the single-source threshold of 0.3 $\mu g/m^3$ for annual $PM_{2.5}$ concentration and 1.0 for HI, each of the sources did exceed the 10.0 chance per million single source threshold for cancer risk.

Conclusions and Recommendations

Table 1 summarized the maximum increased cancer risks and annual $PM_{2.5}$ concentrations at the project site, resulting from I-880 and 7th Street traffic and the operation of the USPS distribution center. Since the dwelling units on the second through fifth floor levels have predicted cancer risk concentrations that exceed single source thresholds, control features should be incorporated. Specifically, HVAC systems with high efficiency diesel particulate filters, or MERV 13 filters, should be included in the ventilation design, along with weatherproofing windows and doors, installation of passive electrostatic filtering systems, and adoption of a maintenance plan for the HVAC and air filtration systems.

The U.S. EPA reports particle size removal efficiency for filters rated MERV 13 of 90 percent for particles in the size range of 1 to 3 µm and less than 75 percent for particles 0.3 to 1 µm.[14,15] The BAAQMD's *Planning Healthy Places* guidance indicates that MERV 13 air filtration devices installed on an HVAC air intake system can remove 80-90 percent of indoor particulate matter (greater than 0.3 microns in diameter).[16]

A properly installed and operated ventilation system with MERV 13 air filters would reduce DPM and $PM_{2.5}$ concentrations from traffic by 80 percent or greater indoors when compared to outdoors. The calculations for overall effectiveness of the system must take into consideration time spent outside and the outdoor exposure of each affected unit. The U.S. EPA reports that people, on average, spend 90 percent of their time indoors.[17] The overall effectiveness calculations take into effect time spent outdoors. Assuming two hours of outdoor exposure onsite plus one hour of open windows (calculated as outdoor exposure) per day, the overall effectiveness of the MERV 13 filtration systems would be 70 percent. This assumes the intake is at the receptor position. Therefore, these calculations assume the treated air is at the ventilation system intake, while untreated air is at the receptor position. The design of this control system must consider that increased cancer risk is the result of primarily exposure to DPM. However, TACs in total organic gases (TOGs) also contribute to increased cancer risk. While high-efficiency filtration systems can filter DPM, there are no assumptions for reducing TACs from TOG in this assessment.

Table 5 summarizes the maximum increased cancer risks at the project site from I-880 with the

14 American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., 2007. *Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size*. ANSI/ASHRAE Addendum b to Standard 52.2-2007.

15 United States Environmental Protection Agency (U.S. EPA), 2009. *Residential Air Cleaners (Second Edition): A Summary of Available Information*. U.S. EPA 402-F-09-002. Revised August 2009.

16 Bay Area Air Quality Management District (BAAQMD), 2016. *Planning Healthy Places, A Guidebook for addressing local sources of air pollutants in community planning*. May.

17 Klepeis, N.E., Nelsen, WC., Ott, WR., Robinson, JP., Tsang, AM., Switzer, P., Behar, JV., Hern, SC., and Engelmann, WH. 2001. *The National Human Activity Pattern Survey (NHAPS): a resource for assessing exposure to environmental pollutants*. J. Expo Anal Environ Epidemial. 2001 May-Jun;11(3):231-52.

use of MERV 13. With the filtration system, maximum cancer risks from I-880 are estimated to be below the BAAQMD single-source threshold of less than 10 in a million. Likewise, impacts from the USPS facility will be reduced below single-source thresholds. Table 6 summarizes the maximum increased cancer risks from the USPS distribution facility with MERV 13 Filtration. Filtration is not needed to meet cumulative-source thresholds or the single source thresholds for 7th Street. Table 7 shows the cumulative maximum cancer risk given MERV 13 Filtration.

Table 5. Maximum Cancer Risk Impacts from I-880 with MERV 13 Filtration

Source/Receptor Locations	Maximum Cancer Risk w/ MERV 13 (per million)	BAAQMD Single-Source Threshold	Exceed Threshold?
2nd Floor Level	6.4	***>10.0***	No
3rd Floor Level	5.8		No
4th Floor Level	4.8		No
5th Floor Level	3.9		No

Table 6. Maximum Cancer Risk Impacts from USPS Facility with MERV 13 Filtration

Source/Receptor Locations	Maximum Cancer Risk w/ MERV 13 (per million)	BAAQMD Single-Source Threshold	Exceed Threshold?
2nd Floor Level	6.1	***>10.0***	No
3rd Floor Level	4.9		No
4th Floor Level	3.4		No
5th Floor Level	2.3		No

Table 7. Maximum Cancer Risk from Sources within 1,000 feet on Project with MERV 13 Filtration

Source	Maximum Cancer Risk (per million)*
I-880	6.4
7th Street	8.0
USPS Distribution Facility	6.1
Plant #21130 (Generator)	1.0
BAAQMD Single-Source Threshold	***>10.0***
Exceed Threshold?	*No*
Cumulative Total	21.5
BAAQMD Cumulative Source Threshold	***>100***
Exceed Threshold?	*No*

Attachments

The supporting screening calculations and modeling information are provided in attachments to

this report:

Attachment 1: Applicable City of Oakland SCAs
Attachment 2: Health Impact Evaluation Methodology
Attachment 3: I-880 & 7th Street Emissions
Attachment 4: I-880 & 7th Street Health Risk Calculations
Attachment 5: USPS Emissions
Attachment 6: USPS Health Risk Calculations

Attachment 1: Applicable City of Oakland SCAs

19. Exposure to Air Pollution (Toxic Air Contaminants)

a. ***Health Risk Reduction Measures***

Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants. The project applicant shall choose one of the following methods:

i. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents/occupants/users to air pollutants. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes that the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

- or -

ii. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:

- Installation of air filtration to reduce cancer risks and Particulate Matter (PM) exposure for residents and other sensitive populations in the project that are in close proximity to sources of air pollution. Air filter devices shall be rated MERV-13 [insert MERV-16 for projects located in the West Oakland Specific Plan area] or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.
- Where appropriate, install passive electrostatic filtering systems, especially those with low air velocities (i.e., 1 mph).
- Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible.
- The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall be located as far away as feasible from a loading dock or where trucks concentrate to deliver goods.
- Sensitive receptors shall be located on the upper floors of buildings, if feasible.

- Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (*Pinus nigra* var. *maritima*), Cypress (*X Cupressocyparis leylandii*), Hybrid popular (*Populus deltoids X trichocarpa*), and Redwood *(Sequoia sempervirens*).
- Sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible.
- Existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible.
- Emissions from diesel trucks shall be reduced through implementing the following measures, if feasible:
    - Installing electrical hook-ups for diesel trucks at loading docks.
    - Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards.
    - Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels.
    - Prohibiting trucks from idling for more than two minutes.
    - Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

b. ***Maintenance of Health Risk Reduction Measures***

Requirement: The project applicant shall maintain, repair, and/or replace installed health risk reduction measures, including but not limited to the HVAC system (if applicable), on an ongoing and as-needed basis. Prior to occupancy, the project applicant shall prepare and then distribute to the building manager/operator an operation and maintenance manual for the HVAC system and filter including the maintenance and replacement schedule for the filter.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

Attachment 2: Health Impact Evaluation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[18] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[19] This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[20] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs are calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of

18 OEHHA, 2015*Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
19 CARB, 2015*Risk Management Guidance for Stationary Sources of Air Toxics* July 23.
20 BAAQMD, 2016*BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines* December 2016.

30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity that would have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

Parameter	*Exposure Type* →	Infant		Child		Adult
	Age Range →	3rd Trimester	0<2	2 < 9	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	631	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	861	745	335
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). The HI value represents the maximum concentration at which no adverse health effects to the respiratory system are anticipated to occur. OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 3: I-880 & 7th St. Emissions

Road Link	Description	Direction	No. Lanes	Link Length (miles)	Link Width (ft)	Link Width (m)	Release Height (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
NB880_DPM	Northbound 880	NW	4	0.29	55	16.764	11.15	3.4	65 mph off peak, 62.5 AM Peak, 60 PM peak period	83,120
SB880_DPM	Southbound 880	SE	4	0.30	50	15.240	11.15	3.4	65 mph off peak, 62.5 AM Peak, 22.5 PM peak period	46,755
NB880_XXX	Northbound 880	NW	4	0.29	55	16.764	4.27	1.3	65 mph off peak, 62.5 AM Peak, 60 PM peak period	83,120
SB880_XXX	Southbound 880	SE	4	0.30	50	15.240	4.27	1.3	65 mph off peak, 62.5 AM Peak, 22.5 PM peak period	46,755
									TOTAL	129,875

Emission Factors

	Speed Category	1	2	3	4
	Travel Speed	65	62.5	60	22.5
Emisions per vehicle (g/VMT)	DPM	0.005361	0.005183	0.005005	0.003891
	PM2.5	0.006331	0.0060825	0.005834	0.005944
	TOG Exhaust	0.040202	0.038174	0.036146	0.078988
	TOG Evap	0.024079	0.0250425	0.02608598	0.069563
	Fugitive PM2.5	0.030924	0.030924	0.030924	0.030924

			2019 PeMS Data AADT	2021 AADT
ADT				
Vehicle Type		Truck 1 (MDT)	3,693	3,766
		Truck 2 (HDT)	9,168	9,351
		Non-Truck	114,468	116,757
	Total		127,328	**129,875**
			SB	**NB**
	2021	Directional Volume (36 SB/64 NB split)	**46,755**	**83,120**
		Average Veh/Hour/Dir	**1,948**	**3,463**

File Name: CT-EMFAC2017_Alameda_2021_Annual.EF
CT-EMFAC2017 Version: 1.0.2.27401
Run Date: 6/5/2020 12:52
Area: Alameda (SF)
Analysis Year: 2021
Season: Annual

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Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.029	0.44	0.56
Truck 2	0.072	0.96	0.03
Non-Truck	0.899	0.014	0.967

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Road Type: Freeway
Silt Loading Factor: CARB 0.015 g/m2
Precipitation Correction: CARB P = 61 days N = 365 days

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Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.017196	0.012687	0.008966	0.006566	0.005322	0.004627	0.004263	0.004169	0.004314	0.004679	0.005261	0.005834	0.006331	0.006451	0.006451
PM10	0.018336	0.013489	0.009524	0.00697	0.005642	0.004898	0.004507	0.004402	0.00455	0.00493	0.005538	0.00614	0.006666	0.006795	0.006795
NOx	1.066584	0.859892	0.648074	0.533387	0.453433	0.387518	0.336318	0.299292	0.276115	0.266599	0.270663	0.288349	0.319015	0.321798	0.321798
CO	1.970468	1.673833	1.422367	1.243831	1.116109	1.014258	0.930256	0.861169	0.805253	0.761726	0.730774	0.713803	0.713541	0.721742	0.723655
HC	0.264523	0.178721	0.115852	0.078791	0.059455	0.047383	0.039404	0.034255	0.031213	0.029894	0.030152	0.032056	0.03572	0.038354	0.038503
TOG	0.308537	0.210051	0.134439	0.090097	0.067878	0.054082	0.044898	0.038926	0.035368	0.033792	0.034031	0.036146	0.040202	0.043115	0.043329
ROG	0.2344	0.159822	0.101035	0.066729	0.050109	0.039881	0.033071	0.028657	0.026055	0.024953	0.025234	0.026925	0.03006	0.032313	0.032501
1,3-Butadiene	0.001308	0.000864	0.000572	0.000398	0.0003	0.000239	0.000199	0.000175	0.000161	0.000156	0.000159	0.00017	0.000191	0.000192	0.000192
Acetaldehyde	0.007676	0.005661	0.003214	0.001832	0.001362	0.001088	0.000887	0.000744	0.00065	0.000599	0.000587	0.000607	0.000642	0.000655	0.00067
Acrolein	0.000262	0.000169	0.000115	0.000083	0.000063	0.00005	0.000042	0.000037	0.000034	0.000033	0.000034	0.000036	0.000041	0.000041	0.000041
Benzene	0.00681	0.004593	0.002954	0.001989	0.001497	0.001191	0.000991	0.000862	0.000787	0.000758	0.000768	0.000819	0.000914	0.000917	0.000921
Diesel PM	0.008932	0.007537	0.005563	0.004194	0.003588	0.003296	0.003188	0.003256	0.003498	0.00391	0.004495	0.005005	0.005361	0.005361	0.005361
Ethylbenzene	0.002445	0.001611	0.001071	0.000748	0.000564	0.000449	0.000375	0.000329	0.000302	0.000294	0.000299	0.000321	0.000361	0.000361	0.000362
Formaldehyde	0.017232	0.012537	0.007254	0.004256	0.00317	0.00253	0.00207	0.001749	0.001541	0.001433	0.001414	0.001471	0.001576	0.001601	0.00163
Naphthalene	0.000216	0.00015	0.000095	0.000062	0.000047	0.000038	0.000031	0.000027	0.000025	0.000023	0.000024	0.000025	0.000028	0.000027	0.000027
POM	0.00036	0.000252	0.000154	0.000098	0.000074	0.000059	0.000049	0.000043	0.000039	0.000038	0.000038	0.000041	0.000045	0.000045	0.000045
DEOG	0.092852	0.069481	0.038574	0.021231	0.01572	0.012557	0.010184	0.008463	0.007304	0.006643	0.006438	0.006586	0.006846	0.007016	0.007217
CO2	908.776764	745.0549	603.3011	505.2215	435.3199	386.4592	356.1771	340.583	336.8572	342.7375	354.7873	369.7768	385.2148	387.9833	387.9833
N2O	0.050117	0.0426	0.034473	0.029828	0.026538	0.023833	0.021897	0.020519	0.01962	0.019385	0.019651	0.020463	0.0218	0.0218	0.0218
CH4	0.039193	0.028035	0.019737	0.014566	0.011463	0.009398	0.007983	0.007027	0.006418	0.006091	0.006015	0.006218	0.006711	0.007055	0.007064
BC	0.003603	0.002572	0.001804	0.001317	0.001052	0.000899	0.000814	0.000781	0.000794	0.000847	0.000938	0.001033	0.00112	0.00112	0.00112

Fleet Average Fuel Consumption (gallons/veh-mile)

Fuel Type	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
Gasoline	0.078337	0.063394	0.051863	0.04323	0.036931	0.032812	0.030404	0.029404	0.029513	0.030338	0.031613	0.032832	0.03379	0.03379	0.03379
Diesel	0.024238	0.02038	0.016068	0.0138	0.012139	0.010791	0.009804	0.009081	0.008634	0.008499	0.008653	0.009061	0.00974	0.00974	0.00974

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Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
HC	1.463957
TOG	1.565159
ROG	1.565159
1,3-Butadiene	0
Benzene	0.015652
Ethylbenzene	0.025669
Naphthalene	0.002191
CH4	0.225732
HFC	0.027876

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Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.002375
PM10	0.009501

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Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.017927
PM10	0.04183

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Fleet Average Road Dust Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.010622
PM10	0.070814

==========END==========

2021 Hourly Traffic Volumes and DMP Emisssions - NB880

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.02556614	2,125	0.000915	8	0.05805934	4826	0.002007949	16	0.04130691	3433	0.00138
1	0.02361565	1963	0.0008448	9	0.05391289	4481	0.00667329	17	0.0428006	3558	0.001429
2	0.02195173	1825	0.0007853	10	0.04751913	3950	0.005881876	18	0.04238705	3523	0.001516
3	0.02378053	1977	0.0008507	11	0.04307124	3580	0.005331319	19	0.04374129	3636	0.001565
4	0.03548366	2949	0.0012693	12	0.04424186	3677	0.005476218	20	0.04265113	3545	0.001526
5	0.05003626	4159	0.0017899	13	0.0475257	3950	0.005882689	21	0.03888039	3232	0.001391
6	0.06058257	5036	0.0021672	14	0.04583955	3810	0.005673978	22	0.03329742	2768	0.001191
7	0.0630191	5238	0.0021795	15	0.04049284	3366	0.005012168	23	0.03023702	2513	0.001082
									TOTAL	83,120	

2021 Hourly Traffic Volumes and DMP Emisssions - SB880

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.01423808	666	0.0003014	8	0.05679829	2656	0.001162289	16	0.05519867	2581	0.000848
1	0.01112433	520	0.0002355	9	0.05530213	2586	0.001170538	17	0.05491877	2568	0.000844
2	0.01099084	514	0.0002326	10	0.05333094	2493	0.001128815	18	0.0527594	2467	0.001117
3	0.01443715	675	0.0003056	11	0.05296541	2476	0.001121078	19	0.04682377	2189	0.000991
4	0.02804592	1311	0.0005936	12	0.05193336	2428	0.001099233	20	0.03884132	1816	0.000822
5	0.047477	2220	0.0010049	13	0.05270937	2464	0.001115659	21	0.03463199	1619	0.000733
6	0.04871273	2278	0.0010311	14	0.05494389	2569	0.001162955	22	0.02940138	1375	0.000622
7	0.0552262	2582	0.0011301	15	0.05736203	2682	0.001214138	23	0.02182702	1021	0.000462
									TOTAL	46,755	

2021 Hourly Traffic Volumes and PM2.5 Emisssions - NB880

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.02556614	2,125	0.001080	8	0.05805934	4826	0.002356425	16	0.04130691	3433	0.001608
1	0.02361565	1963	0.0009976	9	0.05391289	4481	0.002277531	17	0.0428006	3558	0.001666
2	0.02195173	1825	0.0009273	10	0.04751913	3950	0.002007429	18	0.04238705	3523	0.001791
3	0.02378053	1977	0.0010046	11	0.04307124	3580	0.001819529	19	0.04374129	3636	0.001848
4	0.03548366	2949	0.001499	12	0.04424186	3677	0.001868982	20	0.04265113	3545	0.001802
5	0.05003626	4159	0.0021138	13	0.0475257	3950	0.002007706	21	0.03888039	3232	0.001642
6	0.06058257	5036	0.0025593	14	0.04583955	3810	0.001936476	22	0.03329742	2768	0.001407
7	0.0630191	5238	0.0025577	15	0.04049284	3366	0.001710606	23	0.03023702	2513	0.001277
									TOTAL	83,120	

2021 Hourly Traffic Volumes and PM2.5 Emisssions - SB880

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.01423808	666	0.0003559	8	0.05679829	2656	0.001364002	16	0.05519867	2581	0.001295
1	0.01112433	520	0.0002781	9	0.05530213	2586	0.00138233	17	0.05491877	2568	0.001289
2	0.01099084	514	0.0002747	10	0.05333094	2493	0.001333059	18	0.0527594	2467	0.001319
3	0.01443715	675	0.0003609	11	0.05296541	2476	0.001323922	19	0.04682377	2189	0.00117
4	0.02804592	1311	0.000701	12	0.05193336	2428	0.001298125	20	0.03884132	1816	0.000971
5	0.047477	2220	0.0011867	13	0.05270937	2464	0.001317522	21	0.03463199	1619	0.000866
6	0.04871273	2278	0.0012176	14	0.05494389	2569	0.001373376	22	0.02940138	1375	0.000735
7	0.0552262	2582	0.0013262	15	0.05736203	2682	0.00143382	23	0.02182702	1021	0.000546
									TOTAL	46,755	

2021 Hourly Traffic Volumes and Fug 2.5 Emisssions - NB880

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.02556614	2,125	0.005275	8	0.05805934	4826	0.011980285	16	0.04130691	3433	0.008523
1	0.02361565	1963	0.004873	9	0.05391289	4481	0.011124685	17	0.0428006	3558	0.008832
2	0.02195173	1825	0.0045296	10	0.04751913	3950	0.009805361	18	0.04238705	3523	0.008746
3	0.02378053	1977	0.004907	11	0.04307124	3580	0.008887557	19	0.04374129	3636	0.009026
4	0.03548366	2949	0.0073219	12	0.04424186	3677	0.00912911	20	0.04265113	3545	0.008801
5	0.05003626	4159	0.0103248	13	0.0475257	3950	0.009806715	21	0.03888039	3232	0.008023
6	0.06058257	5036	0.0125009	14	0.04583955	3810	0.009458786	22	0.03329742	2768	0.006871
7	0.0630191	5238	0.0130037	15	0.04049284	3366	0.008355517	23	0.03023702	2513	0.006239
									TOTAL	83,120	

2021 Hourly Traffic Volumes and FUG 2.5 Emisssions - SB880

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.01423808	666	0.0017384	8	0.05679829	2656	0.006934714	16	0.05519867	2581	0.006739
1	0.01112433	520	0.0013582	9	0.05530213	2586	0.006752043	17	0.05491877	2568	0.006705
2	0.01099084	514	0.0013419	10	0.05333094	2493	0.006511373	18	0.0527594	2467	0.006442
3	0.01443715	675	0.0017627	11	0.05296541	2476	0.006466744	19	0.04682377	2189	0.005717
4	0.02804592	1311	0.0034242	12	0.05193336	2428	0.006340737	20	0.03884132	1816	0.004742
5	0.047477	2220	0.0057966	13	0.05270937	2464	0.006435484	21	0.03463199	1619	0.004228
6	0.04871273	2278	0.0059475	14	0.05494389	2569	0.006708304	22	0.02940138	1375	0.00359
7	0.0552262	2582	0.0067428	15	0.05736203	2682	0.007003544	23	0.02182702	1021	0.002665
									TOTAL	46,755	

2021 Hourly Traffic Volumes and TOG EVAP Emisssions - NB880

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.02556614	2,125	0.004108	8	0.05805934	4826	0.009701747	16	0.04130691	3433	0.00719
1	0.02361565	1963	0.0037944	9	0.05391289	4481	0.008662379	17	0.0428006	3558	0.00745
2	0.02195173	1825	0.0035271	10	0.04751913	3950	0.00763507	18	0.04238705	3523	0.00681
3	0.02378053	1977	0.0038209	11	0.04307124	3580	0.00692041	19	0.04374129	3636	0.007028
4	0.03548366	2949	0.0057013	12	0.04424186	3677	0.007108499	20	0.04265113	3545	0.006853
5	0.05003626	4159	0.0080395	13	0.0475257	3950	0.007636124	21	0.03888039	3232	0.006247
6	0.06058257	5036	0.009734	14	0.04583955	3810	0.007365205	22	0.03329742	2768	0.00535
7	0.0630191	5238	0.0105305	15	0.04049284	3366	0.006506131	23	0.03023702	2513	0.004858
									TOTAL	83,120	

2021 Hourly Traffic Volumes and TOG EVAP Emisssions - SB880

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.01423808	666	0.0013536	8	0.05679829	2656	0.005615797	16	0.05519867	2581	0.01516
1	0.01112433	520	0.0010576	9	0.05530213	2586	0.005257565	17	0.05491877	2568	0.015083
2	0.01099084	514	0.0010449	10	0.05333094	2493	0.005070164	18	0.0527594	2467	0.005016
3	0.01443715	675	0.0013725	11	0.05296541	2476	0.005035413	19	0.04682377	2189	0.004452
4	0.02804592	1311	0.0026663	12	0.05193336	2428	0.004937297	20	0.03884132	1816	0.003693
5	0.047477	2220	0.0045136	13	0.05270937	2464	0.005011072	21	0.03463199	1619	0.003292
6	0.04871273	2278	0.0046311	14	0.05494389	2569	0.005223507	22	0.02940138	1375	0.002795
7	0.0552262	2582	0.0054604	15	0.05736203	2682	0.0054534	23	0.02182702	1021	0.002075
									TOTAL	46,755	

TOG Ex

2021 Hourly Traffic Volumes and TOG Exhaust Emisssions - NB880

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.02556614	2,125	0.006858	8	0.05805934	4826	0.014789012	16	0.04130691	3433	0.009963
1	0.02361565	1963	0.006335	9	0.05391289	4481	0.014462378	17	0.0428006	3558	0.010323
2	0.02195173	1825	0.0058886	10	0.04751913	3950	0.012747223	18	0.04238705	3523	0.011371
3	0.02378053	1977	0.0063792	11	0.04307124	3580	0.011554054	19	0.04374129	3636	0.011734
4	0.03548366	2949	0.0095187	12	0.04424186	3677	0.011868079	20	0.04265113	3545	0.011441
5	0.05003626	4159	0.0134225	13	0.0475257	3950	0.012748983	21	0.03888039	3232	0.01043
6	0.06058257	5036	0.0162515	14	0.04583955	3810	0.012296666	22	0.03329742	2768	0.008932
7	0.0630191	5238	0.0160524	15	0.04049284	3366	0.010862388	23	0.03023702	2513	0.008111
									TOTAL	83,120	

2021 Hourly Traffic Volumes and TOG Exhaust Emisssions - SB880

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.01423808	666	0.0022599	8	0.05679829	2656	0.008560529	16	0.05519867	2581	0.017214
1	0.01112433	520	0.0017657	9	0.05530213	2586	0.008777831	17	0.05491877	2568	0.017127
2	0.01099084	514	0.0017445	10	0.05333094	2493	0.008464953	18	0.0527594	2467	0.008374
3	0.01443715	675	0.0022915	11	0.05296541	2476	0.008406934	19	0.04682377	2189	0.007432
4	0.02804592	1311	0.0044516	12	0.05193336	2428	0.008243123	20	0.03884132	1816	0.006165
5	0.047477	2220	0.0075358	13	0.05270937	2464	0.008366295	21	0.03463199	1619	0.005497
6	0.04871273	2278	0.0077319	14	0.05494389	2569	0.008720969	22	0.02940138	1375	0.004667
7	0.0552262	2582	0.0083236	15	0.05736203	2682	0.009104789	23	0.02182702	1021	0.003464
									TOTAL	46,755	

Traffic and EFS

Road Link	Description	Direction	No. Lanes	Link Length (miles)	Link Width (ft)	Link Width (m)	Release Height (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
EB7th_DPM	Eastbound 7th	SE	2	0.43	31.25	9.525	11.15	3.4	30 mph off peak, 15 AM Peak, 12.5 PM peak period	5,776
WB7th_DPM	Westbound 7th	NW	2	0.43	31.25	9.525	11.15	3.4	30 mph off peak, 15 AM Peak, 12.5 PM peak period	5,776
EB7th_XXX	Eastbound 7th	SE	2	0.43	31.25	9.525	4.27	1.3	30 mph off peak, 15 AM Peak, 12.5 PM peak period	5,776
WB7th__XXX	Westbound 7th	NW	2	0.43	31.25	9.525	4.27	1.3	30 mph off peak, 15 AM Peak, 12.5 PM peak period	5,776
									TOTAL	11,552

Emission Factors

	Speed Category	1	2	3
	Travel Speed	30	15	12.5
Emisions per vehicle (g/VMT)	DPM	0.003296	0.005563	0.00655
	PM2.5	0.004627	0.008966	0.0108265
	TOG Exhaust	0.054082	0.134439	0.172245
	TOG Evap	0.052172	0.1043439	0.12521272
	Fugitive PM2.5	0.041469	0.041469	0.041469

		2009 GIS Data AADT	2021 AADT
ADT			
Vehicle Type	Truck 1 (MDT)	270	335
	Truck 2 (HDT)	671	832
	Non-Truck	8,375	10,385
Total		9,316	**11,552**
	Directional Volume (50		
2021	WB/50 EB split)	**5,776**	**5,776**
	Average Veh/Hour/Dir	**241**	**241**

File Name:	Alameda (SF) - 2021 - Annual.EF
CT-EMFAC2017 Version:	1.0.2.27401
Run Date:	6/17/2020 13:44
Area:	Alameda (SF)
Analysis Year:	2021
Season:	Annual

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Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.029	0.44	0.56
Truck 2	0.072	0.96	0.03
Non-Truck	0.899	0.014	0.967

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Road Type:	Major/Collector	
Silt Loading Factor:	CARB	0.032 g/m2
Precipitation Correction:	CARB	P = 61 days N = 365 days

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Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.017196	0.012687	0.008966	0.006566	0.005322	0.004627	0.004263	0.004169	0.004314	0.004679	0.005261	0.005834	0.006331	0.006451	0.006451
PM10	0.018336	0.013489	0.009524	0.00697	0.005642	0.004898	0.004507	0.004402	0.00455	0.00493	0.005538	0.00614	0.006666	0.006795	0.006795
NOx	1.066584	0.859892	0.648074	0.533387	0.453433	0.387518	0.336318	0.299292	0.276115	0.266599	0.270663	0.288349	0.319015	0.321798	0.321798
CO	1.970468	1.673833	1.422367	1.243831	1.116109	1.014258	0.930256	0.861169	0.805253	0.761726	0.730774	0.713803	0.713541	0.721742	0.723655
HC	0.264523	0.178721	0.115852	0.078791	0.059455	0.047383	0.039404	0.034255	0.031213	0.029894	0.030152	0.032056	0.03572	0.038354	0.038503
TOG	0.308537	0.210051	0.134439	0.090097	0.067878	0.054082	0.044898	0.038926	0.035368	0.033792	0.034031	0.036146	0.040202	0.043115	0.043329
ROG	0.2344	0.159822	0.101035	0.066729	0.050109	0.039881	0.033071	0.028657	0.026055	0.024953	0.025234	0.026925	0.03006	0.032313	0.032501
1,3-Butadiene	0.001308	0.000864	0.000572	0.000398	0.0003	0.000239	0.000199	0.000175	0.000161	0.000156	0.000159	0.00017	0.000191	0.000192	0.000192
Acetaldehyde	0.007676	0.005661	0.003214	0.001832	0.001362	0.001088	0.000887	0.000744	0.00065	0.000599	0.000587	0.000607	0.000642	0.000655	0.00067
Acrolein	0.000262	0.000169	0.000115	0.000083	0.000063	0.00005	0.000042	0.000037	0.000034	0.000033	0.000034	0.000036	0.000041	0.000041	0.000041
Benzene	0.00681	0.004593	0.002954	0.001989	0.001497	0.001191	0.000991	0.000862	0.000787	0.000758	0.000768	0.000819	0.000914	0.000917	0.000921
Diesel PM	0.008932	0.007537	0.005563	0.004194	0.003588	0.003296	0.003188	0.003256	0.003498	0.00391	0.004495	0.005005	0.005361	0.005361	0.005361
Ethylbenzene	0.002445	0.001611	0.001071	0.000748	0.000564	0.000449	0.000375	0.000329	0.000302	0.000294	0.000299	0.000321	0.000361	0.000361	0.000362
Formaldehyde	0.017232	0.012537	0.007254	0.004256	0.00317	0.00253	0.00207	0.001749	0.001541	0.001433	0.001414	0.001471	0.001576	0.001601	0.00163
Naphthalene	0.000216	0.00015	0.000095	0.000062	0.000047	0.000038	0.000031	0.000027	0.000025	0.000023	0.000024	0.000025	0.000028	0.000027	0.000027
POM	0.00036	0.000252	0.000154	0.000098	0.000074	0.000059	0.000049	0.000043	0.000039	0.000038	0.000038	0.000041	0.000045	0.000045	0.000045
DEOG	0.092852	0.069481	0.038574	0.021231	0.01572	0.012557	0.010184	0.008463	0.007304	0.006643	0.006438	0.006586	0.006846	0.007016	0.007217
CO2	908.776764	745.0549	603.3011	505.2215	435.3199	386.4592	356.1771	340.583	336.8572	342.7375	354.7873	369.7768	385.2148	387.9833	387.9833
N2O	0.050117	0.0426	0.034473	0.029828	0.026538	0.023833	0.021897	0.020519	0.01962	0.019385	0.019651	0.020463	0.0218	0.0218	0.0218
CH4	0.039193	0.028035	0.019737	0.014566	0.011463	0.009398	0.007983	0.007027	0.006418	0.006091	0.006015	0.006218	0.006711	0.007055	0.007064
BC	0.003603	0.002572	0.001804	0.001317	0.001052	0.000899	0.000814	0.000781	0.000794	0.000847	0.000938	0.001033	0.00112	0.00112	0.00112

Fleet Average Fuel Consumption (gallons/veh-mile)

Fuel Type	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
Gasoline	0.078337	0.063394	0.051863	0.04323	0.036931	0.032812	0.030404	0.029404	0.029513	0.030338	0.031613	0.032832	0.03379	0.03379	0.03379
Diesel	0.024238	0.02038	0.016068	0.0138	0.012139	0.010791	0.009804	0.009081	0.008634	0.008499	0.008653	0.009061	0.00974	0.00974	0.00974

==========

Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
HC	1.463957
TOG	1.565159
ROG	1.565159
1,3-Butadiene	0
Benzene	0.015652
Ethylbenzene	0.025669
Naphthalene	0.002191
CH4	0.225732
HFC	0.027876

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Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.002375
PM10	0.009501

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Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.017927
PM10	0.04183

==========

Fleet Average Road Dust Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.021167
PM10	0.141111

==========END==========

2021 Hourly Traffic Volumes and DMP Emisssions - EB 7th

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.02556614	148	0.000059	8	0.05805934	335	0.000224786	16	0.04130691	239	0.000188
1	0.02361565	136	5.417E-05	9	0.05391289	311	0.000285101	17	0.0428006	247	0.000195
2	0.02195173	127	5.036E-05	10	0.04751913	274	0.00025129	18	0.04238705	245	9.72E-05
3	0.02378053	137	5.455E-05	11	0.04307124	249	0.000227768	19	0.04374129	253	0.0001
4	0.03548366	205	8.14E-05	12	0.04424186	256	0.000233959	20	0.04265113	246	9.78E-05
5	0.05003626	289	0.0001148	13	0.0475257	275	0.000251324	21	0.03888039	225	8.92E-05
6	0.06058257	350	0.000139	14	0.04583955	265	0.000242408	22	0.03329742	192	7.64E-05
7	0.0630191	364	0.000244	15	0.04049284	234	0.000214133	23	0.03023702	175	6.94E-05
									TOTAL	5,776	

2021 Hourly Traffic Volumes and DMP Emisssions - WB 7th

EB	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.01423808	82	3.265E-05	8	0.05679829	328	0.00021984	16	0.05519867	319	0.000252
1	0.01112433	64	2.551E-05	9	0.05530213	319	0.000126821	17	0.05491877	317	0.00025
2	0.01099084	63	2.52E-05	10	0.05333094	308	0.000122301	18	0.0527594	305	0.000121
3	0.01443715	83	3.311E-05	11	0.05296541	306	0.000121463	19	0.04682377	270	0.000107
4	0.02804592	162	6.432E-05	12	0.05193336	300	0.000119096	20	0.03884132	224	8.91E-05
5	0.047477	274	0.0001089	13	0.05270937	304	0.000120875	21	0.03463199	200	7.94E-05
6	0.04871273	281	0.0001117	14	0.05494389	317	0.000126	22	0.02940138	170	6.74E-05
7	0.0552262	319	0.0002138	15	0.05736203	331	0.000131545	23	0.02182702	126	5.01E-05
									TOTAL	5,776	

2021 Hourly Traffic Volumes and PM2.5 Emisssions - EB 7th

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.02556614	148	0.000082	8	0.05805934	335	0.000362292	16	0.04130691	239	0.000311
1	0.02361565	136	7.605E-05	9	0.05391289	311	0.000173612	17	0.0428006	247	0.000322
2	0.02195173	127	7.069E-05	10	0.04751913	274	0.000153023	18	0.04238705	245	0.000136
3	0.02378053	137	7.658E-05	11	0.04307124	249	0.000138699	19	0.04374129	253	0.000141
4	0.03548366	205	0.0001143	12	0.04424186	256	0.000142469	20	0.04265113	246	0.000137
5	0.05003626	289	0.0001611	13	0.0475257	275	0.000153044	21	0.03888039	225	0.000125
6	0.06058257	350	0.0001951	14	0.04583955	265	0.000147614	22	0.03329742	192	0.000107
7	0.0630191	364	0.0003932	15	0.04049284	234	0.000130396	23	0.03023702	175	9.74E-05
									TOTAL	5,776	

2021 Hourly Traffic Volumes and PM2.5 Emisssions - WB 7th

EB7th	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.01423808	82	4.584E-05	8	0.05679829	328	0.000354321	16	0.05519867	319	0.000416
1	0.01112433	64	3.581E-05	9	0.05530213	319	0.000178035	17	0.05491877	317	0.000414
2	0.01099084	63	3.538E-05	10	0.05333094	308	0.000171689	18	0.0527594	305	0.00017
3	0.01443715	83	4.648E-05	11	0.05296541	306	0.000170512	19	0.04682377	270	0.000151
4	0.02804592	162	9.029E-05	12	0.05193336	300	0.000167189	20	0.03884132	224	0.000125
5	0.047477	274	0.0001528	13	0.05270937	304	0.000169688	21	0.03463199	200	0.000111
6	0.04871273	281	0.0001568	14	0.05494389	317	0.000176881	22	0.02940138	170	9.47E-05
7	0.0552262	319	0.0003445	15	0.05736203	331	0.000184666	23	0.02182702	126	7.03E-05
									TOTAL	5,776	

2021 Hourly Traffic Volumes and Fug 2.5 Emisssions - EB 7th

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.02556614	148	0.000738	8	0.05805934	335	0.001675649	16	0.04130691	239	0.001192
1	0.02361565	136	0.0006816	9	0.05391289	311	0.001555979	17	0.0428006	247	0.001235
2	0.02195173	127	0.0006335	10	0.04751913	274	0.001371449	18	0.04238705	245	0.001223
3	0.02378053	137	0.0006863	11	0.04307124	249	0.001243078	19	0.04374129	253	0.001262
4	0.03548366	205	0.0010241	12	0.04424186	256	0.001276863	20	0.04265113	246	0.001231
5	0.05003626	289	0.0014441	13	0.0475257	275	0.001371638	21	0.03888039	225	0.001122
6	0.06058257	350	0.0017485	14	0.04583955	265	0.001322974	22	0.03329742	192	0.000961
7	0.0630191	364	0.0018188	15	0.04049284	234	0.001168663	23	0.03023702	175	0.000873
									TOTAL	5,776	

2021 Hourly Traffic Volumes and FUG 2.5 Emisssions - WB 7th

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.01423808	82	0.0004108	8	0.05679829	328	0.001638784	16	0.05519867	319	0.001593
1	0.01112433	64	0.000321	9	0.05530213	319	0.001595616	17	0.05491877	317	0.001585
2	0.01099084	63	0.0003171	10	0.05333094	308	0.001538742	18	0.0527594	305	0.001522
3	0.01443715	83	0.0004166	11	0.05296541	306	0.001528195	19	0.04682377	270	0.001351
4	0.02804592	162	0.0008092	12	0.05193336	300	0.001498418	20	0.03884132	224	0.001121
5	0.047477	274	0.0013698	13	0.05270937	304	0.001520808	21	0.03463199	200	0.000999
6	0.04871273	281	0.0014055	14	0.05494389	317	0.00158528	22	0.02940138	170	0.000848
7	0.0552262	319	0.0015934	15	0.05736203	331	0.00165505	23	0.02182702	126	0.00063
									TOTAL	5,776	

TOG Evap

2021 Hourly Traffic Volumes and TOG EVAP Emisssions - EB 7th

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.02556614	148	0.000928	8	0.05805934	335	0.004216253	16	0.04130691	239	0.0036
1	0.02361565	136	0.0008575	9	0.05391289	311	0.00195757	17	0.0428006	247	0.00373
2	0.02195173	127	0.0007971	10	0.04751913	274	0.001725413	18	0.04238705	245	0.001539
3	0.02378053	137	0.0008635	11	0.04307124	249	0.001563911	19	0.04374129	253	0.001588
4	0.03548366	205	0.0012884	12	0.04424186	256	0.001606416	20	0.04265113	246	0.001549
5	0.05003626	289	0.0018168	13	0.0475257	275	0.001725652	21	0.03888039	225	0.001412
6	0.06058257	350	0.0021997	14	0.04583955	265	0.001664428	22	0.03329742	192	0.001209
7	0.0630191	364	0.0045764	15	0.04049284	234	0.00147029	23	0.03023702	175	0.001098
									TOTAL	5,776	

2021 Hourly Traffic Volumes and TOG EVAP Emisssions - WB 7th

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.01423808	82	0.0005168	8	0.05679829	328	0.004123494	16	0.05519867	319	0.004809
1	0.01112433	64	0.0004038	9	0.05530213	319	0.002007437	17	0.05491877	317	0.004784
2	0.01099084	63	0.000399	10	0.05333094	308	0.001935884	18	0.0527594	305	0.001915
3	0.01443715	83	0.0005241	11	0.05296541	306	0.001922616	19	0.04682377	270	0.0017
4	0.02804592	162	0.0010181	12	0.05193336	300	0.001885153	20	0.03884132	224	0.00141
5	0.047477	274	0.0017234	13	0.05270937	304	0.001913322	21	0.03463199	200	0.001257
6	0.04871273	281	0.0017682	14	0.05494389	317	0.001994433	22	0.02940138	170	0.001067
7	0.0552262	319	0.0040094	15	0.05736203	331	0.002082211	23	0.02182702	126	0.000792
									TOTAL	5,776	

2021 Hourly Traffic Volumes and TOG Exhaust Emisssions - EB 7th

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.02556614	148	0.000962	8	0.05805934	335	0.005432313	16	0.04130691	239	0.004952
1	0.02361565	136	0.0008889	9	0.05391289	311	0.002029237	17	0.0428006	247	0.005131
2	0.02195173	127	0.0008262	10	0.04751913	274	0.001788581	18	0.04238705	245	0.001595
3	0.02378053	137	0.0008951	11	0.04307124	249	0.001621166	19	0.04374129	253	0.001646
4	0.03548366	205	0.0013356	12	0.04424186	256	0.001665227	20	0.04265113	246	0.001605
5	0.05003626	289	0.0018833	13	0.0475257	275	0.001788828	21	0.03888039	225	0.001463
6	0.06058257	350	0.0022803	14	0.04583955	265	0.001725363	22	0.03329742	192	0.001253
7	0.0630191	364	0.0058964	15	0.04049284	234	0.001524117	23	0.03023702	175	0.001138
									TOTAL	5,776	

2021 Hourly Traffic Volumes and TOG Exhaust Emisssions - WB 7th

Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s	Hour	Fraction Per Hour	VPH	g/s
0	0.01423808	82	0.0005358	8	0.05679829	328	0.0053128	16	0.05519867	319	0.006615
1	0.01112433	64	0.0004186	9	0.05530213	319	0.00208093	17	0.05491877	317	0.006582
2	0.01099084	63	0.0004136	10	0.05333094	308	0.002006758	18	0.0527594	305	0.001985
3	0.01443715	83	0.0005432	11	0.05296541	306	0.001993003	19	0.04682377	270	0.001762
4	0.02804592	162	0.0010553	12	0.05193336	300	0.001954169	20	0.03884132	224	0.001462
5	0.047477	274	0.0017865	13	0.05270937	304	0.001983369	21	0.03463199	200	0.001303
6	0.04871273	281	0.001833	14	0.05494389	317	0.00206745	22	0.02940138	170	0.001106
7	0.0552262	319	0.0051657	15	0.05736203	331	0.002158441	23	0.02182702	126	0.000821
									TOTAL	5,776	

Attachment 4: I-880 & 7th St. Health Risk Calculations

7th & Campbell Mixed Use, Oakland, CA
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Project MEI Receptor - 2nd Floor

Emissions Year	2021
Receptor Information	
Number of Receptors	58
Receptor Height (in m) =	1.5 (7.14m)
Receptor Distances =	Project Location
Meteorological Conditions	
BAAQMD Oakland Airport Met Data	2013 - 2017
Land Use Classification	urban
Wind Speed =	variable
Wind Direction =	variable

Project Receptor Maximum Concentrations I880

Meteorolgical Data Years	2021 Concentrations (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.02563	0.15246	0.09566

Meteorolgical Data Years	2021 PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.13764	0.11443	0.02321

Project Receptor Maximum Concentrations 7th St.

Meteorolgical Data Years	2021 Concentrations (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.00997	0.13855	0.12039

Meteorolgical Data Years	2021 PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.08608	0.07552	0.01056

7th & Campbell Mixed Use, Oakland, CA - 7th Street Impacts in 2021
Maximum DPM Cancer Risk and PM2.5 Calculations From 7th St. on Site MEI
Impacts at On-Site Residence - 2nd Floor, 1.5 meter receptor height

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Age Sensitivity Factor**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	
0	0.25	-0.25 - 0*	2021	10	0.0100	0.1386	0.1204	0.136	0.011	0.0006	0.15
1	1	0 - 1	2021	10	0.0100	0.1386	0.1204	1.638	0.130	0.0067	1.77
2	1	1 - 2	2022	10	0.0100	0.1386	0.1204	1.638	0.130	0.0067	1.77
3	1	2 - 3	2023	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
4	1	3 - 4	2024	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
5	1	4 - 5	2025	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
6	1	5 - 6	2026	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
7	1	6 - 7	2027	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
8	1	7 - 8	2028	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
9	1	8 - 9	2029	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
10	1	9 - 10	2030	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
11	1	10 - 11	2031	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
12	1	11 - 12	2032	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
13	1	12 - 13	2033	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
14	1	13 - 14	2034	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
15	1	14 - 15	2035	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
16	1	15 - 16	2036	3	0.0100	0.1386	0.1204	0.258	0.020	0.0010	0.28
17	1	16-17	2037	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
18	1	17-18	2038	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
19	1	18-19	2039	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
20	1	19-20	2040	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
21	1	20-21	2041	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
22	1	21-22	2042	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
23	1	22-23	2043	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
24	1	23-24	2044	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
25	1	24-25	2045	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
26	1	25-26	2046	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
27	1	26-27	2047	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
28	1	27-28	2048	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
29	1	28-29	2049	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
30	1	29-30	2050	1	0.0100	0.1386	0.1204	0.029	0.002	0.0001	0.031
Total Increased Cancer Risk								7.42	0.589	0.030	**8.0**

* Third trimester of pregnancy

Maximum	
Hazard Index	**Total PM2.5 (µg/m3)**
0.0020	0.09

7th & Campbell Mixed Use, Oakland, CA - I-880 Impacts in 2021
Maximum DPM Cancer Risk and PM2.5 Calculations From I-880 on Site MEI
Impacts at On-Site Residence - 2nd Floor, 1.5 meter receptor height

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Age Sensitivity Factor**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	
0	0.25	-0.25 - 0*	2021	10	0.0256	0.1525	0.0957	0.349	0.012	0.0004	0.36
1	1	0 - 1	2021	10	0.0256	0.1525	0.0957	4.210	0.143	0.0053	4.36
2	1	1 - 2	2022	10	0.0256	0.1525	0.0957	4.210	0.143	0.0053	4.36
3	1	2 - 3	2023	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
4	1	3 - 4	2024	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
5	1	4 - 5	2025	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
6	1	5 - 6	2026	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
7	1	6 - 7	2027	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
8	1	7 - 8	2028	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
9	1	8 - 9	2029	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
10	1	9 - 10	2030	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
11	1	10 - 11	2031	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
12	1	11 - 12	2032	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
13	1	12 - 13	2033	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
14	1	13 - 14	2034	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
15	1	14 - 15	2035	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
16	1	15 - 16	2036	3	0.0256	0.1525	0.0957	0.663	0.023	0.0008	0.69
17	1	16-17	2037	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
18	1	17-18	2038	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
19	1	18-19	2039	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
20	1	19-20	2040	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
21	1	20-21	2041	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
22	1	21-22	2042	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
23	1	22-23	2043	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
24	1	23-24	2044	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
25	1	24-25	2045	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
26	1	25-26	2046	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
27	1	26-27	2047	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
28	1	27-28	2048	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
29	1	28-29	2049	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
30	1	29-30	2050	1	0.0256	0.1525	0.0957	0.074	0.002	0.0001	0.076
Total Increased Cancer Risk								19.08	0.648	0.024	**19.7**

* Third trimester of pregnancy

Maximum	
Hazard Index	**Total PM2.5 (µg/m3)**
0.0051	0.14

7th & Campbell Mixed Use, Oakland, CA
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Project MEI Receptor - 3rd Floor

Emissions Year	2021
Receptor Information	
Number of Receptors	58
Receptor Height (in m) =	1.5
Receptor Distances =	Project Location
Meteorological Conditions	
BAAQMD Oakland Airport Met Data	2013 - 2017
Land Use Classification	urban
Wind Speed =	variable
Wind Direction =	variable

Project Receptor Maximum Concentrations I880

Meteorolgical Data Years	2021 Concentrations (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.02315	0.13434	0.08445

Meteorolgical Data Years	2021 PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.12115	0.10073	0.02042

7th & Campbell Mixed Use, Oakland, CA - I-880 Impacts in 2021
Maximum DPM Cancer Risk and PM2.5 Calculations From I-880 on Site MEI
Impacts at On-Site Residence - 3rd Floor; 1.5 meter receptor height

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2021	10	0.0232	0.1343	0.0845	0.315	0.010	0.0004	0.33
1	1	0 - 1	2022	10	0.0232	0.1343	0.0845	3.802	0.126	0.0047	3.93
2	1	1 - 2	2023	10	0.0232	0.1343	0.0845	3.802	0.126	0.0047	3.93
3	1	2 - 3	2024	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
4	1	3 - 4	2025	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
5	1	4 - 5	2026	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
6	1	5 - 6	2027	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
7	1	6 - 7	2028	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
8	1	7 - 8	2029	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
9	1	8 - 9	2030	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
10	1	9 - 10	2031	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
11	1	10 - 11	2032	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
12	1	11 - 12	2033	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
13	1	12 - 13	2034	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
14	1	13 - 14	2035	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
15	1	14 - 15	2036	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
16	1	15 - 16	2037	3	0.0232	0.1343	0.0845	0.599	0.020	0.0007	0.62
17	1	16-17	2038	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
18	1	17-18	2039	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
19	1	18-19	2040	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
20	1	19-20	2041	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
21	1	20-21	2042	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
22	1	21-22	2043	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
23	1	22-23	2044	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
24	1	23-24	2045	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
25	1	24-25	2046	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
26	1	25-26	2047	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
27	1	26-27	2048	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
28	1	27-28	2049	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
29	1	28-29	2050	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
30	1	29-30	2051	1	0.0232	0.1343	0.0845	0.066	0.002	0.0001	0.069
Total Increased Cancer Risk								17.23	0.571	0.021	**17.8**

Maximum	
Hazard Index	**Total PM2.5 (µg/m3)**
0.0046	0.12

* Third trimester of pregnancy

7th & Campbell Mixed Use, Oakland, CA
AERMOD Risk Modeling Parameters and Maximum Concentrations at Project MEI Receptor - 4th Floor

Emissions Year	2021
Receptor Information	
Number of Receptors	58
Receptor Height (in m) =	1.5
Receptor Distances =	Project Location
Meteorological Conditions	
BAAQMD Oakland Airport Met Data	2013 - 2017
Land Use Classification	urban
Wind Speed =	variable
Wind Direction =	variable

Project Receptor Maximum Concentrations I880

Meteorolgical Data Years	2021 Concentrations (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.0193	0.10607	0.0669

Meteorolgical Data Years	2021 PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.09551	0.07942	0.01609

7th & Campbell Mixed Use, Oakland, CA - I-880 Impacts in 2021
Maximum DPM Cancer Risk and PM2.5 Calculations From I-880 on Site MEI
Impacts at On-Site 4th Floor Residence - 1.5 meter receptor height

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2021	10	0.0193	0.1061	0.0669	0.262	0.008	0.0003	0.27
1	1	0 - 1	2022	10	0.0193	0.1061	0.0669	3.170	0.099	0.0037	3.27
2	1	1 - 2	2023	10	0.0193	0.1061	0.0669	3.170	0.099	0.0037	3.27
3	1	2 - 3	2024	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
4	1	3 - 4	2025	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
5	1	4 - 5	2026	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
6	1	5 - 6	2027	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
7	1	6 - 7	2028	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
8	1	7 - 8	2029	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
9	1	8 - 9	2030	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
10	1	9 - 10	2031	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
11	1	10 - 11	2032	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
12	1	11 - 12	2033	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
13	1	12 - 13	2034	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
14	1	13 - 14	2035	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
15	1	14 - 15	2036	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
16	1	15 - 16	2037	3	0.0193	0.1061	0.0669	0.499	0.016	0.0006	0.52
17	1	16-17	2038	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
18	1	17-18	2039	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
19	1	18-19	2040	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
20	1	19-20	2041	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
21	1	20-21	2042	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
22	1	21-22	2043	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
23	1	22-23	2044	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
24	1	23-24	2045	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
25	1	24-25	2046	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
26	1	25-26	2047	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
27	1	26-27	2048	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
28	1	27-28	2049	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
29	1	28-29	2050	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
30	1	29-30	2051	1	0.0193	0.1061	0.0669	0.055	0.002	0.0001	0.057
Total Increased Cancer Risk								14.36	0.451	0.017	**14.8**

Maximum	
Hazard Index	**Total PM2.5 (µg/m3)**
0.0039	0.10

* Third trimester of pregnancy

7th & Campbell Mixed Use, Oakland, CA
AERMOD Risk Modeling Parameters and Maximum Concentrations at Project MEI Receptor - 5th Floor

Emissions Year	2021
Receptor Information	
Number of Receptors	58
Receptor Height (in m) =	1.5
Receptor Distances =	Project Location
Meteorological Conditions	
BAAQMD Oakland Airport Met Data	2013 - 2017
Land Use Classification	urban
Wind Speed =	variable
Wind Direction =	variable

Project Receptor Maximum Concentrations I880

Meteorolgical Data Years	2021 Concentrations (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.01588	0.08148	0.05157

Meteorolgical Data Years	2021 PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.07329	0.06095	0.01234

7th & Campbell Mixed Use, Oakland, CA - I-880 Impacts in 2021
Maximum DPM Cancer Risk and PM2.5 Calculations From I-880 on Site MEI
Impacts at On-Site 5th Floor Residence - 1.5 meter receptor height

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2021	10	0.0159	0.0815	0.0516	0.216	0.006	0.0002	0.22
1	1	0 - 1	2022	10	0.0159	0.0815	0.0516	2.608	0.076	0.0028	2.69
2	1	1 - 2	2023	10	0.0159	0.0815	0.0516	2.608	0.076	0.0028	2.69
3	1	2 - 3	2024	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
4	1	3 - 4	2025	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
5	1	4 - 5	2026	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
6	1	5 - 6	2027	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
7	1	6 - 7	2028	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
8	1	7 - 8	2029	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
9	1	8 - 9	2030	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
10	1	9 - 10	2031	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
11	1	10 - 11	2032	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
12	1	11 - 12	2033	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
13	1	12 - 13	2034	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
14	1	13 - 14	2035	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
15	1	14 - 15	2036	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
16	1	15 - 16	2037	3	0.0159	0.0815	0.0516	0.411	0.012	0.0004	0.42
17	1	16-17	2038	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
18	1	17-18	2039	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
19	1	18-19	2040	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
20	1	19-20	2041	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
21	1	20-21	2042	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
22	1	21-22	2043	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
23	1	22-23	2044	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
24	1	23-24	2045	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
25	1	24-25	2046	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
26	1	25-26	2047	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
27	1	26-27	2048	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
28	1	27-28	2049	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
29	1	28-29	2050	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
30	1	29-30	2051	1	0.0159	0.0815	0.0516	0.046	0.001	0.0000	0.047
Total Increased Cancer Risk								11.82	0.346	0.013	**12.2**

Maximum Hazard Index	Maximum Total PM2.5 (µg/m3)
0.0032	0.06

* Third trimester of pregnancy

Attachment 5: USPS Emissions

	Trips/day	Length	VMT/day
LDV	1950	0.25	487.6
Truck 1	1179	0.58	683.6
Truck2	289	0.58	167.5

File Name: Alameda (SF) - 2021 - Annual.EF
CT-EMFAC2017 Version: 1.0.2.27401
Run Date: 6/8/2020 13:27
Area: Alameda (SF)
Analysis Year: 2021
Season: Annual

TRUCKS

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.282	0.44	0.56
Truck 2	0.717	0.96	0.03
Non-Truck	0.001	0.014	0.967

Road Type: Local Urban
Silt Loading Factor: CARB 0.32 g/m2
Precipitation Correction: CARB P = 61 days N = 365 days

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph
PM2.5	0.081533	0.06876	0.050629
PM10	0.085275	0.071904	0.052941
NOx	9.239574	7.383365	5.443322
CO	2.976461	2.187943	1.421919
HC	0.724074	0.539313	0.309452
TOG	1.000484	0.745599	0.424279
ROG	0.819465	0.60901	0.341406
1,3-Butadiene	0.001938	0.001424	0.000815
Acetaldehyde	0.06459	0.048316	0.026877
Acrolein	0.000065	0.000042	0.000029
Benzene	0.018773	0.013928	0.00785
Diesel PM	0.083229	0.070519	0.052083
Ethylbenzene	0.003244	0.002377	0.001367
Formaldehyde	0.129776	0.097029	0.054017
Naphthalene	0.000859	0.000643	0.000364
POM	0.001814	0.001362	0.000767
DEOG	0.87683	0.65609	0.364792
CO2	2731.166965	2285.284	1809.231
N2O	0.375704	0.316152	0.24942
CH4	0.098233	0.075963	0.04848
BC	0.013546	0.011323	0.008368

Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
HC	1.391865
TOG	1.488084
ROG	1.488084
1,3-Butadiene	0
Benzene	0.014881
Ethylbenzene	0.024405
Naphthalene	0.002083
CH4	0.182412
HFC	0.065241

Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.005652
PM10	0.022608

Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.035824
PM10	0.083589

Fleet Average Road Dust Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.816856
PM10	5.445705

END

File Name: Alameda (SF) - 2021 - Annual.EF
CT-EMFAC2017 Version: 1.0.2.27401
Run Date: 6/8/2020 13:29
Area: Alameda (SF)
Analysis Year: 2021
Season: Annual

LIGHT DUTY VEHICLES

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0	0.44	0.56
Truck 2	0.001	0.96	0.03
Non-Truck	0.999	0.014	0.967

Road Type: Local Urban
Silt Loading Factor: CARB 0.32 g/m2
Precipitation Correction: CARB P = 61 days N = 365 days

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph
PM2.5	0.01009	0.006495	0.004364
PM10	0.010942	0.007039	0.004729
NOx	0.165983	0.140862	0.119291
CO	1.859089	1.616992	1.422583
HC	0.213724	0.138864	0.094455
TOG	0.232032	0.150844	0.102396
ROG	0.169696	0.110149	0.074452
1,3-Butadiene	0.001238	0.000802	0.000545
Acetaldehyde	0.001381	0.000943	0.000597
Acrolein	0.000283	0.000183	0.000125
Benzene	0.005487	0.003561	0.002412
Diesel PM	0.000721	0.00058	0.000424
Ethylbenzene	0.002357	0.001526	0.001038
Formaldehyde	0.004783	0.003192	0.002082
Naphthalene	0.000145	0.000095	0.000065
POM	0.0002	0.00013	0.000087
DEOG	0.00613	0.004599	0.002491
CO2	707.121138	574.631201	469.921338
N2O	0.01418	0.012405	0.010757
CH4	0.032691	0.022757	0.016574
BC	0.002502	0.001604	0.001078

Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
HC	1.468286
TOG	1.569787
ROG	1.569787
1,3-Butadiene	0
Benzene	0.015698
Ethylbenzene	0.025745
Naphthalene	0.002198
CH4	0.230077
HFC	0.023715

Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.002014
PM10	0.008056

Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.015937
PM10	0.037185

Fleet Average Road Dust Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.102554
PM10	0.683693

END

Source: EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: Alameda
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Vehicle Category	Fuel	Population	VMT	Trips	PM2.5_IDLEX	PM2.5_STREX	PM10_IDLEX	PM10_STREX	TOG_IDLEX	TOG_STREX	TOG_HOTSOA	TOG_RUNLOSS	TOG_RESTLOSS	TOG_DIURN
LDA	Gasoline	643846.3	23456819	3010602	0	0.001829576	0	0.001989718	0	0.317964769	0.119683406	0.246101697	0.209404478	0.217333203
LDA	Diesel	7140.126	264939.3	33233.8	0	0	0	0	0	0	0	0	0	0
LDA	Electricity	17125.1	649064.6	84207.95	0	0	0	0	0	0	0.004888026	0	0.004020953	0.014405
LDT1	Gasoline	66399	2359125	304135.2	0	0.002469748	0	0.002685825	0	0.468231973	0.210919389	0.766546747	0.39251369	0.450307725
LDT1	Diesel	46.09621	741.565	149.5479	0	0	0	0	0	0	0	0	0	0
LDT1	Electricity	321.7501	12861.12	1605.904	0	0	0	0	0	0	0.004888026	0	0.004020953	0.014405
LDT2	Gasoline	212628.3	7710663	988229.3	0	0.001752519	0	0.001905937	0	0.418057046	0.138609361	0.468688151	0.292836147	0.283895537
LDT2	Diesel	1221.379	52545.3	5987.178	0	0	0	0	0	0	0	0	0	0
LDT2	Electricity	1502.599	49387.55	7579.032	0	0	0	0	0	0	0.004888026	0	0.004020953	0.014405
		950230.7	**34556146**	**4435730**	**0**	**0.001801542**	**0**	**0.001959228**	**0**	**0.341050387**	**0.126676208**	**0.324009681**	**0.234920079**	**0.242537274**
LHDT1	Gasoline	15865.62	562596.9	236374	0	0.000394995	0	0.000429593	0.665031422	0.148565417	0.127375067	0.910384671	0.025552349	0.045811281
LHDT1	Diesel	9438.928	371117.4	118729.8	0.027251632	0	0.02848383	0	0.124954127	0	0	0	0	0
LHDT2	Gasoline	2411.064	84654.66	35921.26	0	0.000336523	0	0.000365999	0.664991228	0.143754422	0.12041552	0.842004544	0.023189877	0.041605425
LHDT2	Diesel	3486.927	137555.7	43861.15	0.027208941	0	0.028439208	0	0.124954127	0	0	0	0	0
		31202.53	**1155925**	**434886.3**	**0.011284397**	**0.000242488**	**0.011794627**	**0.000263728**	**0.441297752**	**0.092623861**	**0.079178482**	**0.564370896**	**0.014784569**	**0.026508665**
MHDT	Gasoline	1608.989	86820.78	32192.65	0	0.000437531	0	0.000475855	1.475114927	0.251692588	0.090294216	0.530200416	0.01954173	0.034839996
MHDT	Diesel	14124.74	906519.8	143441.2	0.022622195	0	0.02364507	0	0.130290725	0	0	0	0	0
HHDT	Gasoline	9.245674	1022.322	184.9875	0	0.000359088	0	0.000390541	0	0.001109584	0.093643791	0.586533778	0.0241558	0.037395119
HHDT	Diesel	14388.37	1874628	157730.2	0.090822451	0	0.094929039	0	5.776826467	0	0	0	0	0
HHDT	Natural Gas	380.1489	15489.07	1482.581	0.022854063	0	0.023887422	0	1.265472534	0	0	0	0	0
		30511.49	**2884480**	**335031.6**	**0.053586619**	**4.22399E-05**	**0.056009568**	**4.59398E-05**	**2.878061853**	**0.024185354**	**0.008727933**	**0.028137253**	**0.001891071**	**0.001848579**

Vehicle Type	TOG Evap (grams/day)					TOG Ex (grams/day)				DPM/PM10 Exhaust (g/day)				Vehicle PM2.5 (g/day)				Fug PM2.5 (g/day)
	Hot Soak	Run Loss	Rest Loss	DIURN	**TOTAL**	On Site VMT (5mph)	Starts	Idle	**TOTAL**	On Site VMT (5mph)	Starts	Idle	**TOTAL**	On Site VMT (5mph)	Starts	Idle	**TOTAL**	**On Site VMT**
LDV (LDA,LDT1,LDT2)	247.06	631.92	458.17	473.02	**1810.16**	113.13	665.15	0	**778.29**	0.35	3.82	0	**4.17**	19.68	3.51	0	**23.19**	**58.76**
Truck 1 (LHDT1,LHDT2)	93.31	665.13	17.42	31.24	**807.11**	683.88	109.16	520.09	**1313.129**	56.89	0.31	13.90	**71.10**	96.09	0.29	13.30	**109.67**	**586.71**
Truck 2 (MHDT, HHDT)	2.52	8.13	0.55	0.53	**11.73**	167.60	6.99	831.26	**1005.843**	13.94	0.01	16.18	**30.13**	23.55	0.01	15.48	**39.04**	**143.79**
ALL					**2629.01**				**3097.26**				**105.41**				**171.90**	**789.26**

	g/day	g/hr	g/min	**g/s**
TOG Ev	2629.01	109.54	1.83	**0.0304**
TOG X	3097.26	129.05	2.15	**0.0358**
DPM	105.41	4.39	0.07	**0.0012**
PM2.5	171.90	7.16	0.12	**0.002**
Fug 2.5	789.26	32.89	0.55	**0.009**

Attachment 6: USPS Health Risk Calculations

7th & Campbell Mixed Use, Oakland, CA
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Project MEI Receptor - 2nd Floor

Emissions Year	2021
Receptor Information	
Number of Receptors	58
Receptor Height (in m) =	1.5 (7.14m)
Receptor Distances =	Project Location
Meteorological Conditions	
BAAQMD Oakland Airport Met Data	2013 - 2017
Land Use Classification	urban
Wind Speed =	variable
Wind Direction =	variable

Project Receptor Maximum Concentrations USPS

Meteorolgical Data Years	2021 Concentrations (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.01716	0.5137	0.43604

Meteorolgical Data Years	2021 PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.15941	0.1309	0.02851

7th & Campbell Mixed Use, Oakland, CA - USPS Center Impacts in 2021
Maximum DPM Cancer Risk and PM2.5 Calculations From USPS Center on Site MEI
Impacts at On-Site Residence - 2nd Floor, 1.5 meter receptor height

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Age Sensitivity Factor**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	
0	0.25	-0.25 - 0*	2021	10	0.0172	0.5137	0.4360	0.233	0.040	0.0020	0.28
1	1	0 - 1	2021	10	0.0172	0.5137	0.4360	2.818	0.482	0.0241	3.32
2	1	1 - 2	2022	10	0.0172	0.5137	0.4360	2.818	0.482	0.0241	3.32
3	1	2 - 3	2023	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
4	1	3 - 4	2024	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
5	1	4 - 5	2025	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
6	1	5 - 6	2026	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
7	1	6 - 7	2027	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
8	1	7 - 8	2028	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
9	1	8 - 9	2029	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
10	1	9 - 10	2030	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
11	1	10 - 11	2031	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
12	1	11 - 12	2032	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
13	1	12 - 13	2033	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
14	1	13 - 14	2034	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
15	1	14 - 15	2035	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
16	1	15 - 16	2036	3	0.0172	0.5137	0.4360	0.444	0.076	0.0038	0.52
17	1	16-17	2037	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
18	1	17-18	2038	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
19	1	18-19	2039	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
20	1	19-20	2040	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
21	1	20-21	2041	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
22	1	21-22	2042	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
23	1	22-23	2043	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
24	1	23-24	2044	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
25	1	24-25	2045	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
26	1	25-26	2046	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
27	1	26-27	2047	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
28	1	27-28	2048	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
29	1	28-29	2049	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
30	1	29-30	2050	1	0.0172	0.5137	0.4360	0.049	0.008	0.0004	0.058
Total Increased Cancer Risk								12.77	2.183	0.109	**15.1**

* Third trimester of pregnancy

Maximum	
Hazard Index	**Total PM2.5 (µg/m3)**
0.0034	0.16

7th & Campbell Mixed Use, Oakland, CA
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Project MEI Receptor - 3rd Floor

Emissions Year	2021
Receptor Information	
Number of Receptors	58
Receptor Height (in m) =	1.5
Receptor Distances =	Project Location
Meteorological Conditions	
BAAQMD Oakland Airport Met Data	2013 - 2017
Land Use Classification	urban
Wind Speed =	variable
Wind Direction =	variable

Project Receptor Maximum Concentrations USPS

Meteorolgical Data Years	2021 Concentrations (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.01386	0.40709	0.34555

Meteorolgical Data Years	2021 PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.12633	0.10374	0.02259

7th & Campbell Mixed Use, Oakland, CA - USPS Center Impacts in 2021
Maximum DPM Cancer Risk and PM2.5 Calculations From USPS Center on Site MEI
Impacts at On-Site Residence - 3rd Floor; 1.5 meter receptor height

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2021	10	0.0139	0.4071	0.3456	0.188	0.032	0.0016	0.22
1	1	0 - 1	2022	10	0.0139	0.4071	0.3456	2.276	0.382	0.0191	2.68
2	1	1 - 2	2023	10	0.0139	0.4071	0.3456	2.276	0.382	0.0191	2.68
3	1	2 - 3	2024	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
4	1	3 - 4	2025	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
5	1	4 - 5	2026	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
6	1	5 - 6	2027	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
7	1	6 - 7	2028	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
8	1	7 - 8	2029	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
9	1	8 - 9	2030	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
10	1	9 - 10	2031	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
11	1	10 - 11	2032	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
12	1	11 - 12	2033	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
13	1	12 - 13	2034	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
14	1	13 - 14	2035	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
15	1	14 - 15	2036	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
16	1	15 - 16	2037	3	0.0139	0.4071	0.3456	0.358	0.060	0.0030	0.42
17	1	16-17	2038	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
18	1	17-18	2039	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
19	1	18-19	2040	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
20	1	19-20	2041	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
21	1	20-21	2042	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
22	1	21-22	2043	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
23	1	22-23	2044	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
24	1	23-24	2045	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
25	1	24-25	2046	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
26	1	25-26	2047	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
27	1	26-27	2048	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
28	1	27-28	2049	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
29	1	28-29	2050	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
30	1	29-30	2051	1	0.0139	0.4071	0.3456	0.040	0.007	0.0003	0.047
Total Increased Cancer Risk								10.32	1.730	0.087	**12.1**

Maximum Hazard Index	Maximum Total PM2.5 (µg/m3)
0.0028	0.13

* Third trimester of pregnancy

7th & Campbell Mixed Use, Oakland, CA
AERMOD Risk Modeling Parameters and Maximum Concentrations at Project MEI Receptor - 4th Floor

Emissions Year	2021
Receptor Information	
Number of Receptors	58
Receptor Height (in m) =	1.5
Receptor Distances =	Project Location
Meteorological Conditions	
BAAQMD Oakland Airport Met Data	2013 - 2017
Land Use Classification	urban
Wind Speed =	variable
Wind Direction =	variable

Project Receptor Maximum Concentrations USPS

Meteorolgical Data Years	2021 Concentrations (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.00955	0.27796	0.23594

Meteorolgical Data Years	2021 PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.08626	0.07083	0.01543

7th & Campbell Mixed Use, Oakland, CA - USPS Center Impacts in 2021
Maximum DPM Cancer Risk and PM2.5 Calculations From USPS Center on Site MEI
Impacts at On-Site 4th Floor Residence - 1.5 meter receptor height

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2021	10	0.0096	0.2780	0.2359	0.130	0.022	0.0011	0.15
1	1	0 - 1	2022	10	0.0096	0.2780	0.2359	1.569	0.261	0.0130	1.84
2	1	1 - 2	2023	10	0.0096	0.2780	0.2359	1.569	0.261	0.0130	1.84
3	1	2 - 3	2024	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
4	1	3 - 4	2025	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
5	1	4 - 5	2026	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
6	1	5 - 6	2027	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
7	1	6 - 7	2028	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
8	1	7 - 8	2029	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
9	1	8 - 9	2030	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
10	1	9 - 10	2031	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
11	1	10 - 11	2032	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
12	1	11 - 12	2033	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
13	1	12 - 13	2034	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
14	1	13 - 14	2035	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
15	1	14 - 15	2036	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
16	1	15 - 16	2037	3	0.0096	0.2780	0.2359	0.247	0.041	0.0021	0.29
17	1	16-17	2038	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
18	1	17-18	2039	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
19	1	18-19	2040	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
20	1	19-20	2041	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
21	1	20-21	2042	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
22	1	21-22	2043	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
23	1	22-23	2044	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
24	1	23-24	2045	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
25	1	24-25	2046	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
26	1	25-26	2047	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
27	1	26-27	2048	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
28	1	27-28	2049	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
29	1	28-29	2050	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
30	1	29-30	2051	1	0.0096	0.2780	0.2359	0.027	0.005	0.0002	0.032
Total Increased Cancer Risk								7.11	1.181	0.059	**8.3**

* Third trimester of pregnancy

Maximum Hazard Index	Maximum Total PM2.5 (µg/m3)
0.0019	0.09

7th & Campbell Mixed Use, Oakland, CA
AERMOD Risk Modeling Parameters and Maximum Concentrations at Project MEI Receptor - 5th Floor

Emissions Year	2021
Receptor Information	
Number of Receptors	58
Receptor Height (in m) =	1.5
Receptor Distances =	Project Location
Meteorological Conditions	
BAAQMD Oakland Airport Met Data	2013 - 2017
Land Use Classification	urban
Wind Speed =	variable
Wind Direction =	variable

Project Receptor Maximum Concentrations USPS

Meteorolgical Data Years	2021 Concentrations (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2013 - 2017	0.00661	0.19353	0.16427

Meteorolgical Data Years	2021 PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013 - 2017	0.06006	0.04932	0.01074

7th & Campbell Mixed Use, Oakland, CA - USPS Center Impacts in 2021
Maximum DPM Cancer Risk and PM2.5 Calculations From USPS Center on Site MEI
Impacts at On-Site 5th Floor Residence - 1.5 meter receptor height

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2021	10	0.0066	0.1935	0.1643	0.090	0.015	0.0008	0.11
1	1	0 - 1	2022	10	0.0066	0.1935	0.1643	1.086	0.181	0.0091	1.28
2	1	1 - 2	2023	10	0.0066	0.1935	0.1643	1.086	0.181	0.0091	1.28
3	1	2 - 3	2024	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
4	1	3 - 4	2025	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
5	1	4 - 5	2026	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
6	1	5 - 6	2027	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
7	1	6 - 7	2028	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
8	1	7 - 8	2029	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
9	1	8 - 9	2030	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
10	1	9 - 10	2031	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
11	1	10 - 11	2032	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
12	1	11 - 12	2033	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
13	1	12 - 13	2034	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
14	1	13 - 14	2035	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
15	1	14 - 15	2036	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
16	1	15 - 16	2037	3	0.0066	0.1935	0.1643	0.171	0.029	0.0014	0.20
17	1	16-17	2038	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
18	1	17-18	2039	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
19	1	18-19	2040	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
20	1	19-20	2041	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
21	1	20-21	2042	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
22	1	21-22	2043	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
23	1	22-23	2044	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
24	1	23-24	2045	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
25	1	24-25	2046	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
26	1	25-26	2047	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
27	1	26-27	2048	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
28	1	27-28	2049	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
29	1	28-29	2050	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
30	1	29-30	2051	1	0.0066	0.1935	0.1643	0.019	0.003	0.0002	0.022
Total Increased Cancer Risk								4.92	0.822	0.041	**5.8**

Maximum Hazard Index	Maximum Total PM2.5 (µg/m3)
0.0013	0.06

* Third trimester of pregnancy

Appendix C

CalEEMod Air Emissions Modeling Results

7th and Campbell

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	4.25	1000sqft	0.01	4,250.00	0
Quality Restaurant	2.80	1000sqft	0.01	2,800.00	0
Apartments High Rise	79.00	Dwelling Unit	0.67	79,000.00	226
Regional Shopping Center	3.50	1000sqft	0.01	3,500.00	0
General Office Building	8.85	1000sqft	0.01	8,850.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - details from plans.

Vehicle Trips - daily trp rate from traffic study. (Where Sat/Sun were lower than traffic study weekday trip rate, these were retained.)

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00

tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblLandUse	LotAcreage	0.10	0.01
tblLandUse	LotAcreage	0.06	0.01
tblLandUse	LotAcreage	1.27	0.67
tblLandUse	LotAcreage	0.08	0.01
tblLandUse	LotAcreage	0.20	0.01
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	7.16	3.80
tblVehicleTrips	ST_TR	20.87	18.82
tblVehicleTrips	ST_TR	94.36	72.86
tblVehicleTrips	ST_TR	49.97	24.57
tblVehicleTrips	SU_TR	6.07	3.80
tblVehicleTrips	SU_TR	26.73	18.82
tblVehicleTrips	SU_TR	25.24	24.57
tblVehicleTrips	WD_TR	6.59	3.80
tblVehicleTrips	WD_TR	32.93	18.82
tblVehicleTrips	WD_TR	89.95	72.86
tblVehicleTrips	WD_TR	42.94	24.57
tblVehicleTrips	WD_TR	11.01	6.33

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					
2017	1.5537	0.8042	0.7245	1.1800e-003	0.0352	0.0505	0.0857	9.6200e-003	0.0466	0.0563	0.0000	101.9170	101.9170	0.0198	0.0000	102.3324

Total	**1.5537**	**0.8042**	**0.7245**	**1.1800e-003**	**0.0352**	**0.0505**	**0.0857**	**9.6200e-003**	**0.0466**	**0.0563**	**0.0000**	**101.9170**	**101.9170**	**0.0198**	**0.0000**	**102.3324**

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					
2017	1.5537	0.8042	0.7245	1.1800e-003	0.0352	0.0505	0.0857	9.6200e-003	0.0466	0.0563	0.0000	101.9169	101.9169	0.0198	0.0000	102.3323
Total	**1.5537**	**0.8042**	**0.7245**	**1.1800e-003**	**0.0352**	**0.0505**	**0.0857**	**9.6200e-003**	**0.0466**	**0.0563**	**0.0000**	**101.9169**	**101.9169**	**0.0198**	**0.0000**	**102.3323**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5298	7.9500e-003	0.6806	1.1000e-004		0.0160	0.0160		0.0160	0.0160	1.2994	3.0474	4.3468	3.3900e-003	1.1000e-004	4.4515
Energy	7.9900e-003	0.0705	0.0459	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003	0.0000	244.5315	244.5315	9.0000e-003	3.0000e-003	245.6496
Mobile	0.4400	1.1211	4.4144	7.5600e-003	0.4887	0.0139	0.5026	0.1313	0.0128	0.1441	0.0000	590.4509	590.4509	0.0235	0.0000	590.9438

Waste						0.0000	0.0000		0.0000	0.0000	15.2304	0.0000	15.2304	0.9001	0.0000	34.1323
Water						0.0000	0.0000		0.0000	0.0000	2.5636	17.3793	19.9430	0.2641	6.3800e-003	27.4667
Total	**0.9778**	**1.1996**	**5.1410**	**8.1100e-003**	**0.4887**	**0.0355**	**0.5241**	**0.1313**	**0.0344**	**0.1657**	**19.0934**	**855.4091**	**874.5026**	**1.2000**	**9.4900e-003**	**902.6439**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5298	7.9500e-003	0.6806	1.1000e-004		0.0160	0.0160		0.0160	0.0160	1.2994	3.0474	4.3468	3.3900e-003	1.1000e-004	4.4515
Energy	7.9900e-003	0.0705	0.0459	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003	0.0000	244.5315	244.5315	9.0000e-003	3.0000e-003	245.6496
Mobile	0.4400	1.1211	4.4144	7.5600e-003	0.4887	0.0139	0.5026	0.1313	0.0128	0.1441	0.0000	590.4509	590.4509	0.0235	0.0000	590.9438
Waste						0.0000	0.0000		0.0000	0.0000	15.2304	0.0000	15.2304	0.9001	0.0000	34.1323
Water						0.0000	0.0000		0.0000	0.0000	2.5636	17.3793	19.9430	0.2640	6.3700e-003	27.4626
Total	**0.9778**	**1.1996**	**5.1410**	**8.1100e-003**	**0.4887**	**0.0355**	**0.5241**	**0.1313**	**0.0344**	**0.1657**	**19.0934**	**855.4091**	**874.5026**	**1.2000**	**9.4800e-003**	**902.6398**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/13/2017	5	10	

2	Site Preparation	Site Preparation	1/14/2017	1/16/2017	5	1	
3	Grading	Grading	1/17/2017	1/18/2017	5	2	
4	Building Construction	Building Construction	1/19/2017	6/7/2017	5	100	
5	Paving	Paving	6/8/2017	6/14/2017	5	5	
6	Architectural Coating	Architectural Coating	6/15/2017	6/21/2017	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 159,975; Residential Outdoor: 53,325; Non-Residential Indoor: 29,100; Non-Residential Outdoor: 9,700 (Architectural

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	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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	4	10.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	64.00	12.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	13.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.0200e-003	0.0524	0.0429	6.0000e-005		3.6300e-003	3.6300e-003		3.4600e-003	3.4600e-003	0.0000	5.3697	5.3697	1.0600e-003	0.0000	5.3919
Total	**6.0200e-003**	**0.0524**	**0.0429**	**6.0000e-005**		**3.6300e-003**	**3.6300e-003**		**3.4600e-003**	**3.4600e-003**	**0.0000**	**5.3697**	**5.3697**	**1.0600e-003**	**0.0000**	**5.3919**

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	1.7000e-004	2.5000e-004	2.4300e-003	1.0000e-005	4.5000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3971	0.3971	2.0000e-005	0.0000	0.3975
Total	**1.7000e-004**	**2.5000e-004**	**2.4300e-003**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**4.6000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3971**	**0.3971**	**2.0000e-005**	**0.0000**	**0.3975**

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	6.0200e-003	0.0524	0.0429	6.0000e-005		3.6300e-003	3.6300e-003		3.4600e-003	3.4600e-003	0.0000	5.3697	5.3697	1.0600e-003	0.0000	5.3919
Total	**6.0200e-003**	**0.0524**	**0.0429**	**6.0000e-005**		**3.6300e-003**	**3.6300e-003**		**3.4600e-003**	**3.4600e-003**	**0.0000**	**5.3697**	**5.3697**	**1.0600e-003**	**0.0000**	**5.3919**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	2.5000e-004	2.4300e-003	1.0000e-005	4.5000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3971	0.3971	2.0000e-005	0.0000	0.3975

Total	**1.7000e-004**	**2.5000e-004**	**2.4300e-003**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**4.6000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3971**	**0.3971**	**2.0000e-005**	**0.0000**	**0.3975**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3000e-004	6.3400e-003	3.6200e-003	0.0000		3.9000e-004	3.9000e-004		3.5000e-004	3.5000e-004	0.0000	0.4336	0.4336	1.3000e-004	0.0000	0.4364
Total	**6.3000e-004**	**6.3400e-003**	**3.6200e-003**	**0.0000**	**2.7000e-004**	**3.9000e-004**	**6.6000e-004**	**3.0000e-005**	**3.5000e-004**	**3.8000e-004**	**0.0000**	**0.4336**	**0.4336**	**1.3000e-004**	**0.0000**	**0.4364**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0199	0.0199	0.0000	0.0000	0.0199
Total	**1.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0199**	**0.0199**	**0.0000**	**0.0000**	**0.0199**

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3000e-004	6.3400e-003	3.6200e-003	0.0000		3.9000e-004	3.9000e-004		3.5000e-004	3.5000e-004	0.0000	0.4336	0.4336	1.3000e-004	0.0000	0.4364
Total	**6.3000e-004**	**6.3400e-003**	**3.6200e-003**	**0.0000**	**2.7000e-004**	**3.9000e-004**	**6.6000e-004**	**3.0000e-005**	**3.5000e-004**	**3.8000e-004**	**0.0000**	**0.4336**	**0.4336**	**1.3000e-004**	**0.0000**	**0.4364**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0199	0.0199	0.0000	0.0000	0.0199
Total	**1.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0199**	**0.0199**	**0.0000**	**0.0000**	**0.0199**

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	0.0105	8.5800e-003	1.0000e-005		7.3000e-004	7.3000e-004		6.9000e-004	6.9000e-004	0.0000	1.0739	1.0739	2.1000e-004	0.0000	1.0784
Total	**1.2000e-003**	**0.0105**	**8.5800e-003**	**1.0000e-005**	**7.5000e-004**	**7.3000e-004**	**1.4800e-003**	**4.1000e-004**	**6.9000e-004**	**1.1000e-003**	**0.0000**	**1.0739**	**1.0739**	**2.1000e-004**	**0.0000**	**1.0784**

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	3.0000e-005	5.0000e-005	4.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0794	0.0794	0.0000	0.0000	0.0795
Total	**3.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0794**	**0.0794**	**0.0000**	**0.0000**	**0.0795**

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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	0.0105	8.5800e-003	1.0000e-005		7.3000e-004	7.3000e-004		6.9000e-004	6.9000e-004	0.0000	1.0739	1.0739	2.1000e-004	0.0000	1.0784
Total	**1.2000e-003**	**0.0105**	**8.5800e-003**	**1.0000e-005**	**7.5000e-004**	**7.3000e-004**	**1.4800e-003**	**4.1000e-004**	**6.9000e-004**	**1.1000e-003**	**0.0000**	**1.0739**	**1.0739**	**2.1000e-004**	**0.0000**	**1.0784**

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	3.0000e-005	5.0000e-005	4.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0794	0.0794	0.0000	0.0000	0.0795
Total	**3.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0794**	**0.0794**	**0.0000**	**0.0000**	**0.0795**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0637	0.6337	0.4020	5.7000e-004		0.0428	0.0428		0.0394	0.0394	0.0000	52.5954	52.5954	0.0161	0.0000	52.9339
Total	**0.0637**	**0.6337**	**0.4020**	**5.7000e-004**		**0.0428**	**0.0428**		**0.0394**	**0.0394**	**0.0000**	**52.5954**	**52.5954**	**0.0161**	**0.0000**	**52.9339**

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	6.7500e-003	0.0544	0.0824	1.4000e-004	3.8800e-003	7.9000e-004	4.6700e-003	1.1100e-003	7.3000e-004	1.8400e-003	0.0000	12.8558	12.8558	1.0000e-004	0.0000	12.8580
Worker	0.0108	0.0162	0.1554	3.5000e-004	0.0291	2.4000e-004	0.0293	7.7300e-003	2.2000e-004	7.9400e-003	0.0000	25.4140	25.4140	1.3700e-003	0.0000	25.4427
Total	**0.0176**	**0.0706**	**0.2378**	**4.9000e-004**	**0.0329**	**1.0300e-003**	**0.0340**	**8.8400e-003**	**9.5000e-004**	**9.7800e-003**	**0.0000**	**38.2698**	**38.2698**	**1.4700e-003**	**0.0000**	**38.3006**

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	0.0637	0.6337	0.4020	5.7000e-004		0.0428	0.0428		0.0394	0.0394	0.0000	52.5954	52.5954	0.0161	0.0000	52.9338
Total	**0.0637**	**0.6337**	**0.4020**	**5.7000e-004**		**0.0428**	**0.0428**		**0.0394**	**0.0394**	**0.0000**	**52.5954**	**52.5954**	**0.0161**	**0.0000**	**52.9338**

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	6.7500e-003	0.0544	0.0824	1.4000e-004	3.8800e-003	7.9000e-004	4.6700e-003	1.1100e-003	7.3000e-004	1.8400e-003	0.0000	12.8558	12.8558	1.0000e-004	0.0000	12.8580
Worker	0.0108	0.0162	0.1554	3.5000e-004	0.0291	2.4000e-004	0.0293	7.7300e-003	2.2000e-004	7.9400e-003	0.0000	25.4140	25.4140	1.3700e-003	0.0000	25.4427

Total	**0.0176**	**0.0706**	**0.2378**	**4.9000e-004**	**0.0329**	**1.0300e-003**	**0.0340**	**8.8400e-003**	**9.5000e-004**	**9.7800e-003**	**0.0000**	**38.2698**	**38.2698**	**1.4700e-003**	**0.0000**	**38.3006**

3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6000e-003	0.0246	0.0181	3.0000e-005		1.5000e-003	1.5000e-003		1.3900e-003	1.3900e-003	0.0000	2.4243	2.4243	6.7000e-004	0.0000	2.4384
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6000e-003**	**0.0246**	**0.0181**	**3.0000e-005**		**1.5000e-003**	**1.5000e-003**		**1.3900e-003**	**1.3900e-003**	**0.0000**	**2.4243**	**2.4243**	**6.7000e-004**	**0.0000**	**2.4384**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	2.3000e-004	2.1800e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3574	0.3574	2.0000e-005	0.0000	0.3578
Total	**1.5000e-004**	**2.3000e-004**	**2.1800e-003**	**0.0000**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3574**	**0.3574**	**2.0000e-005**	**0.0000**	**0.3578**

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	2.6000e-003	0.0246	0.0181	3.0000e-005		1.5000e-003	1.5000e-003		1.3900e-003	1.3900e-003	0.0000	2.4243	2.4243	6.7000e-004	0.0000	2.4384
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6000e-003**	**0.0246**	**0.0181**	**3.0000e-005**		**1.5000e-003**	**1.5000e-003**		**1.3900e-003**	**1.3900e-003**	**0.0000**	**2.4243**	**2.4243**	**6.7000e-004**	**0.0000**	**2.4384**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	2.3000e-004	2.1800e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3574	0.3574	2.0000e-005	0.0000	0.3578
Total	**1.5000e-004**	**2.3000e-004**	**2.1800e-003**	**0.0000**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3574**	**0.3574**	**2.0000e-005**	**0.0000**	**0.3578**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Archit. Coating	1.4606					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-004	5.4600e-003	4.6700e-003	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6397
Total	**1.4614**	**5.4600e-003**	**4.6700e-003**	**1.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.6383**	**0.6383**	**7.0000e-005**	**0.0000**	**0.6397**

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	1.1000e-004	1.6000e-004	1.5800e-003	0.0000	2.9000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2581	0.2581	1.0000e-005	0.0000	0.2584
Total	**1.1000e-004**	**1.6000e-004**	**1.5800e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2581**	**0.2581**	**1.0000e-005**	**0.0000**	**0.2584**

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	1.4606					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-004	5.4600e-003	4.6700e-003	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6397
Total	**1.4614**	**5.4600e-003**	**4.6700e-003**	**1.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.6383**	**0.6383**	**7.0000e-005**	**0.0000**	**0.6397**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.6000e-004	1.5800e-003	0.0000	2.9000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2581	0.2581	1.0000e-005	0.0000	0.2584
Total	**1.1000e-004**	**1.6000e-004**	**1.5800e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2581**	**0.2581**	**1.0000e-005**	**0.0000**	**0.2584**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4400	1.1211	4.4144	7.5600e-003	0.4887	0.0139	0.5026	0.1313	0.0128	0.1441	0.0000	590.4509	590.4509	0.0235	0.0000	590.9438
Unmitigated	0.4400	1.1211	4.4144	7.5600e-003	0.4887	0.0139	0.5026	0.1313	0.0128	0.1441	0.0000	590.4509	590.4509	0.0235	0.0000	590.9438

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

Apartments High Rise	300.20	300.20	300.20	670,156	670,156
Health Club	79.99	79.99	79.99	138,187	138,187
Quality Restaurant	204.01	204.01	202.05	241,655	241,655
Regional Shopping Center	86.00	86.00	86.00	150,775	150,775
General Office Building	56.02	20.97	8.67	105,747	105,747
Total	726.21	691.16	676.90	1,306,521	1,306,521

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.541334	0.061893	0.168156	0.111955	0.031019	0.004607	0.019268	0.049011	0.001782	0.003693	0.005649	0.000207	0.001427

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	165.5010	165.5010	7.4800e-003	1.5500e-003	166.1382
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	165.5010	165.5010	7.4800e-003	1.5500e-003	166.1382

NaturalGas Mitigated	7.9900e-003	0.0705	0.0459	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003	0.0000	79.0304	79.0304	1.5100e-003	1.4500e-003	79.5114
NaturalGas Unmitigated	7.9900e-003	0.0705	0.0459	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003	0.0000	79.0304	79.0304	1.5100e-003	1.4500e-003	79.5114

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 High Rise	699440	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6100e-003	2.6100e-003		2.6100e-003	2.6100e-003	0.0000	37.3248	37.3248	7.2000e-004	6.8000e-004	37.5519
General Office Building	179567	9.7000e-004	8.8000e-003	7.3900e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004	0.0000	9.5824	9.5824	1.8000e-004	1.8000e-004	9.6407
Health Club	109140	5.9000e-004	5.3500e-003	4.4900e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	5.8241	5.8241	1.1000e-004	1.1000e-004	5.8596
Quality Restaurant	476028	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.4027	25.4027	4.9000e-004	4.7000e-004	25.5573
Regional Shopping Center	16800	9.0000e-005	8.2000e-004	6.9000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8965	0.8965	2.0000e-005	2.0000e-005	0.9020
Total		**7.9900e-003**	**0.0705**	**0.0459**	**4.3000e-004**		**5.5200e-003**	**5.5200e-003**		**5.5200e-003**	**5.5200e-003**	**0.0000**	**79.0304**	**79.0304**	**1.5200e-003**	**1.4600e-003**	**79.5114**

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					
General Office Building	179567	9.7000e-004	8.8000e-003	7.3900e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004	0.0000	9.5824	9.5824	1.8000e-004	1.8000e-004	9.6407
Health Club	109140	5.9000e-004	5.3500e-003	4.4900e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	5.8241	5.8241	1.1000e-004	1.1000e-004	5.8596

Quality Restaurant	476028	2.5700e-003	0.0233	0.0196	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.4027	25.4027	4.9000e-004	4.7000e-004	25.5573
Regional Shopping Center	16800	9.0000e-005	8.2000e-004	6.9000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8965	0.8965	2.0000e-005	2.0000e-005	0.9020
Apartments High Rise	699440	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6100e-003	2.6100e-003		2.6100e-003	2.6100e-003	0.0000	37.3248	37.3248	7.2000e-004	6.8000e-004	37.5519
Total		**7.9900e-003**	**0.0705**	**0.0459**	**4.3000e-004**		**5.5200e-003**	**5.5200e-003**		**5.5200e-003**	**5.5200e-003**	**0.0000**	**79.0304**	**79.0304**	**1.5200e-003**	**1.4600e-003**	**79.5114**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	285613	83.0880	3.7600e-003	7.8000e-004	83.4079
General Office Building	122838	35.7350	1.6200e-003	3.3000e-004	35.8726
Health Club	35147.5	10.2248	4.6000e-004	1.0000e-004	10.2642
Quality Restaurant	84672	24.6321	1.1100e-003	2.3000e-004	24.7269
Regional Shopping Center	40635	11.8212	5.3000e-004	1.1000e-004	11.8667
Total		**165.5010**	**7.4800e-003**	**1.5500e-003**	**166.1382**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	285613	83.0880	3.7600e-003	7.8000e-004	83.4079

General Office Building	122838	35.7350	1.6200e-003	3.3000e-004	35.8726
Health Club	35147.5	10.2248	4.6000e-004	1.0000e-004	10.2642
Quality Restaurant	84672	24.6321	1.1100e-003	2.3000e-004	24.7269
Regional Shopping Center	40635	11.8212	5.3000e-004	1.1000e-004	11.8667
Total		**165.5010**	**7.4800e-003**	**1.5500e-003**	**166.1382**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5298	7.9500e-003	0.6806	1.1000e-004		0.0160	0.0160		0.0160	0.0160	1.2994	3.0474	4.3468	3.3900e-003	1.1000e-004	4.4515
Unmitigated	0.5298	7.9500e-003	0.6806	1.1000e-004		0.0160	0.0160		0.0160	0.0160	1.2994	3.0474	4.3468	3.3900e-003	1.1000e-004	4.4515

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0657					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3843					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hearth	0.0613	1.0500e-003	0.0880	8.0000e-005		0.0128	0.0128		0.0128	0.0128	1.2994	2.0889	3.3883	2.4300e-003	1.1000e-004	3.4728
Landscaping	0.0185	6.9100e-003	0.5927	3.0000e-005		3.2200e-003	3.2200e-003		3.2200e-003	3.2200e-003	0.0000	0.9585	0.9585	9.6000e-004	0.0000	0.9787
Total	**0.5298**	**7.9600e-003**	**0.6806**	**1.1000e-004**		**0.0160**	**0.0160**		**0.0160**	**0.0160**	**1.2994**	**3.0474**	**4.3468**	**3.3900e-003**	**1.1000e-004**	**4.4515**

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	0.0657					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3843					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0613	1.0500e-003	0.0880	8.0000e-005		0.0128	0.0128		0.0128	0.0128	1.2994	2.0889	3.3883	2.4300e-003	1.1000e-004	3.4728
Landscaping	0.0185	6.9100e-003	0.5927	3.0000e-005		3.2200e-003	3.2200e-003		3.2200e-003	3.2200e-003	0.0000	0.9585	0.9585	9.6000e-004	0.0000	0.9787
Total	**0.5298**	**7.9600e-003**	**0.6806**	**1.1000e-004**		**0.0160**	**0.0160**		**0.0160**	**0.0160**	**1.2994**	**3.0474**	**4.3468**	**3.3900e-003**	**1.1000e-004**	**4.4515**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	19.9430	0.2640	6.3700e-003	27.4626
Unmitigated	19.9430	0.2641	6.3800e-003	27.4667

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	5.14717 / 3.24495	13.0392	0.1682	4.0700e-003	17.8329
General Office Building	1.57294 / 0.964062	3.9566	0.0514	1.2400e-003	5.4215
Health Club	0.251358 / 0.154058	0.6323	8.2200e-003	2.0000e-004	0.8664
Quality Restaurant	0.849894 / 0.0542486	1.6627	0.0278	6.7000e-004	2.4524
Regional Shopping Center	0.259254 / 0.158898	0.6521	8.4700e-003	2.0000e-004	0.8936
Total		**19.9430**	**0.2641**	**6.3800e-003**	**27.4667**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	5.14717 / 3.24495	13.0392	0.1682	4.0600e-003	17.8303
General Office Building	1.57294 / 0.964062	3.9566	0.0514	1.2400e-003	5.4207
Health Club	0.251358 / 0.154058	0.6323	8.2100e-003	2.0000e-004	0.8662
Quality Restaurant	0.849894 / 0.0542486	1.6627	0.0278	6.7000e-004	2.4519

Regional Shopping Center	0.259254 / 0.158898	0.6521	8.4700e-003	2.0000e-004	0.8934
Total		**19.9430**	**0.2640**	**6.3700e-003**	**27.4626**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	15.2304	0.9001	0.0000	34.1323
Unmitigated	15.2304	0.9001	0.0000	34.1323

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	36.34	7.3767	0.4360	0.0000	16.5316
General Office Building	8.23	1.6706	0.0987	0.0000	3.7440
Health Club	24.23	4.9185	0.2907	0.0000	11.0226
Quality Restaurant	2.55	0.5176	0.0306	0.0000	1.1600

Regional Shopping Center	3.68	0.7470	0.0442	0.0000	1.6741
Total		**15.2304**	**0.9001**	**0.0000**	**34.1323**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	36.34	7.3767	0.4360	0.0000	16.5316
General Office Building	8.23	1.6706	0.0987	0.0000	3.7440
Health Club	24.23	4.9185	0.2907	0.0000	11.0226
Quality Restaurant	2.55	0.5176	0.0306	0.0000	1.1600
Regional Shopping Center	3.68	0.7470	0.0442	0.0000	1.6741
Total		**15.2304**	**0.9001**	**0.0000**	**34.1323**

9.0 Operational Offroad

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

10.0 Vegetation