ATTACHMENT C

October 6, 2016 Memorandum from Urban Planning Partners (including attachments)

URBAN PLANNING PARTNERS INC.

505 17TH STREET
2ND FLOOR
OAKLAND, CA 94612
510.251.8210
WWW.UP-PARTNERS.COM

MEMORANDUM

DATE: October 6, 2016

TO:
PETERSON VOLLMANN, PLANNER IV
CITY OF OAKLAND, BUREAU OF PLANNING

FROM:
URBAN PLANNING PARTNERS IN COORDINATION
WITH BASELINE ENVIRONMENTAL CONSULTING

Subject: 24th and Harrison Streets Project — Response to Appeal from Adams Broadwell Joseph & Cardozo

This memorandum provides responses to the appeal filed by Adams Broadwell Joseph & Cardozo, as well as the technical comments prepared by SWAPE in support of that appeal (hereafter collectively titled Adams Broadwell appeal) dated August 26, 2016, regarding the Oakland Planning Commission's August 17, 2016 decision to approve and adopt the California Environmental Quality Act (CEQA) findings for the 24th and Harrison Streets Project (PLN16-080).

This memorandum is organized as follows, corresponding to the topics raised in the appeal:

A. Consistency with CEQA Addendum and Exemption Requirements
B. Analysis and Mitigation of On-Site Hazards
C. Reduction of Construction Emissions as Analyzed in the Health Risk Assessment

The City's response, contained in an Urban Planning Partners Memorandum dated August 11, 2016 (City's August 11th Response), to the Adams Broadwell comment letter dated August 3, 2016 (August 3rd letter) is incorporated by reference herein throughout this document and included as Attachment A. Other attachments to this memorandum are: the Health Risk Assessment (HRA) prepared by FirstCarbon Solutions for the Project sponsor (Attachment B); and the Adams Broadwell comment letter related to similar issues on a prior project (Attachment C).

Section A. Consistency with CEQA Addendum and Exemption Requirements

Comment: *The Adams Broadwell appeal argues that the City inappropriately relied upon three provisions in CEQA in its CEQA Analysis without a new or subsequent Environmental Impact Report (EIR), including the Community Plan Exemption, Qualified Infill Exemption, and an Addendum to the Broadway Valdez District Specific Plan (BVDSP) EIR. They argue that the City's reliance on these provisions was inappropriate because the Project would have peculiar and more severe significant impacts than were previously identified in the BVDSP EIR. They also claim that the Addendum here is improper because it includes a new substantive analysis for a large project not specifically analyzed in the BVDSP EIR.*

Response: The comments provided by Adams Broadwell under this section are identical to those provided in their comment letter dated August 3, 2016 and do not address, nor attempt to refute, the City's August 11th Response. Thus, all substantive comments raised by Adams Broadwell regarding this topic have been previously addressed in the City's August 11th Response.

As summarized herein and outlined in exhaustive detail, the assumptions and conclusions in the Project's CEQA Analysis are supported by substantial evidence in accordance with CEQA, while none of the assertions presented by Adams Broadwell's appeal provide credible, persuasive, or substantial evidence that the Project would result in a new, peculiar, significant environmental impact or a substantial increase in the severity of a significant environmental impact than determined in the BVDSP EIR. In fact, the appeal makes numerous misinterpretations of applicable CEQA thresholds for determining significance and misrepresents many material facts about the Project to justify its conclusions.

As further described in the City's August 11th Response, neither construction-related toxic air contaminants nor contaminants related to automotive uses on development sites are peculiar, as evidenced by Adams Broadwell raising the same issues on multiple development projects in the City. Significant impacts are also not "peculiar" to a project or property where uniform policies or standards apply that would mitigate the impact. Therefore, the conclusions in the CEQA Analysis are valid and preparation of an EIR is not warranted.

Section B. Analysis and Mitigation of On-Site Hazards

The Adams Broadwell appeal states three issues pertaining to hazards: 1) Project site contamination has not been adequately disclosed and mitigated and the City may not rely solely on compliance with regulations or laws as reducing impacts without a full analysis of impacts or enforceable mitigation; 2) the City's responses fail to adequately

respond to comments regarding potentially significant soil contamination; and 3) dewatering impacts have not been adequately addressed.

Comment 1: *The Adams Broadwell appeal states that the CEQA Analysis fails to adequately describe the Project site's soil contamination, which it claims is significant, as well as the construction health risks to the surrounding community, which it claims are new or more severe than previously analyzed. The appeal asserts that because the CEQA Analysis fails to adequately disclose the Project's significant levels of contamination, it also fails to analyze the potentially significant health effects of the Project. The appeal asserts that the CEQA Analysis contains a mischaracterization of the sample results and of the Phase II conclusions and incorrectly portrays contamination at the Project site as insignificant.*

In addition, Adams Broadwell asserts that the CEQA Analysis has erroneously relied on compliance with identified federal, state, or local regulations or requirements in its analysis of site contamination and that further analysis of these issues is required.

Response 1: The comments provided by Adams Broadwell under this section are identical to those provided in their comment letter dated August 3, 2016 and do not address, nor attempt to refute, the City's August 11th Response. Thus, all substantive comments raised by Adams Broadwell regarding this topic have been previously addressed in the City's response dated August 11.

As summarized here and detailed in the August 11th Response, the August 3rd comment letter mischaracterizes the results of the Phase II Environmental Site Assessment (ESA) and also references now outdated Environmental Screening Levels (ESLs). The City's August 11th Response restates the findings of the Phase II ESAs with respect to issues raised by the Adams Broadwell comment letter. Further, the CEQA Analysis correctly summarizes the findings of the Phase I and II ESAs and states that the site was adequately sampled, no significant contamination was detected, and the site will be managed in accordance with the recommendations of the Phase II ESA, including the preparation of a Site Management Plan that will address handling of soil and groundwater in accordance with applicable environmental and worker health and safety laws and regulations, and the applicable Standard Conditions of Approval (SCAs) that include SCA-HAZ-1 and SCA-HAZ-2, referred to in the CEQA Analysis.

The appeal letter also mischaracterizes SCA-HAZ-1 and SCA-HAZ-2 by stating that they merely include general provisions to address "unexpected" contamination that is encountered after earth-moving activities have commenced. As outlined in the CEQA Analysis and the City's August 11th Response, SCA-HAZ-2 would require implementation of specific sampling and handling and transport procedures for reuse or disposal in accordance with applicable local, state, and federal requirements. The exact method employed or plan to be implemented will be identified in a Site Management Plan, which

is being prepared by the Project sponsor, consistent with the Phase II ESA recommendations and will comply with identified federal, state, or local regulations or requirements and specific performance criteria. The Health and Safety Plan required under SCA-HAZ-2 would adequately protect workers consistent with applicable worker health and safety standards.

In addition, as further described in the City's August 11th Response, long-standing case law precedent supports reliance on legal requirements as appropriate mitigation. CEQA and established case law also make clear that the CEQA Analysis can wait to specify how the measures/conditions identified will be achieved provided a determination of impact has been made prior to approval and where known measures/conditions exist that are feasible to address the impact identified. Both of these conditions are satisfied by the CEQA Analysis. The City completed a detailed analysis regarding Hazards and Hazardous Materials prepared as part of the BVDSP EIR and the CEQA Analysis and technical studies prepared for the Project. The BVDSP EIR analysis included an overview of the regulatory scheme, evaluated potentially significant impacts associated with development in the BVDSP, analyzed applicable state, federal, and local regulatory schemes that would apply, summarized a listing of known contaminated sites in the area, and determined that compliance with the SCAs and/or mitigation measures would reduce any hazardous impact, and any cumulative hazardous impact, to a less than significant level. The regulations or requirements identified include specific performance criteria that must be met before starting construction and the Project must comply with the mitigation measures and regulatory schemes that were identified to reduce the impacts as identified in the CEQA Analysis and the accompanying technical studies.

Comment 2: *The Adams Broadwell appeal states that the City's August 11th Response fails to adequately respond to the August 3rd comment letter regarding its claims that the CEQA analysis doesn't adequately address known soil and groundwater contamination because it mischaracterizes the conclusions of the ESAs; does not meaningfully respond to SWAPE's observations regarding the inadequacies of SCA-HAZ-1 and SCA-HAZ-2 to address potentially significant soil contamination that may be unearthed during construction; and improperly defers further analysis of the site's soil contamination to the future creation of a Site Management Plan.*

Response 2: The comments provided by Adams Broadwell under this section are identical to those provided in its comment letter dated August 17, 2016. As the comments were submitted the day of the Planning Commission hearing, a written response to those comments was not prepared, nor was it warranted as the comments raised did not present new issues or require further analysis or consideration, as discussed below, beyond that previously included in the CEQA Analysis and City's August 11th Response. The Adams Broadwell claims are inaccurate and overstate the

nature and extent of the soil and groundwater contamination that has been found at the Project site.

The ESAs describe detailed investigations of the site's soil and groundwater. Those investigations found low concentrations of contamination typical of automobile operations that are also present at other sites in the Project vicinity. The Phase II ESA specifically concluded that "many of the low level detections are likely the result of biogenic interference from naturally occurring material at the site. These low-level detections also do not match the laboratory diesel standard and suggests that a diesel-range product may not be present. The petroleum detection exceeding established ESLs is considered to be related to petroleum hydrocarbon releases associated with historic site operations."[1] Only two of the 30 soil samples detected TPH-d (diesel) in concentrations exceeding the ESL.

Because the Phase II ESA concluded that the site had only "scattered low concentrations of petroleum hydrocarbons in shallow soil," it recommended the preparation of a Site Management Plan setting out procedures to ensure protection of workers and the environment. The Phase II ESA, based on substantial evidence presented and analyzed, established a very low likelihood of encountering significant contamination during site redevelopment earthwork. Under SCA-HAZ-1 and SCA-HAZ-2, if new or more significant contamination is encountered during site redevelopment earthwork, the Project sponsor shall confirm that any cleanup actions are performed consistent with applicable laws and local agency requirements as required. This requirement is an established and standard practice where detailed site assessment work has been conducted indicating a low likelihood of encountering significant contamination. Contrary to Adams Broadwell's claims, nothing in SCA-HAZ-1 or SCA-HAZ-2 limits discovery of new or more significant contamination to site and smell only. As petroleum hydrocarbons have a distinctive odor and appearance, noting these characteristics provides more specificity on the types of contamination likely to be encountered. As part of any Site Management Plan, testing and monitoring of soils will be required, measures that will identify whether new or more significant contamination is encountered and that, in conjunction with the other measures included in the Site Management Plan and proper implementation of SCA-HAZ-1 and SCA-HAZ-2, will protect human health and the environment.

Finally, use of a Site Management Plan is typical and is routinely relied upon by both self-directed and agency overseen cleanups ancillary to redevelopment projects. Several of the protocols and items for inclusion in the Site Management Plan and Health and Safety Plan suggested in the Adams Broadwell appeal are standard for these plans, but some items are not legally required. Overall, the Site Management Plan and Health and Safety Plan would generally be prepared with such methods and address similar topics

[1] AECOM, 2015. Phase II Environmental Site Assessment Report, Oakland Acura, 277 27th Street, Oakland, California, October 26.

as those presented by Adams Broadwell. Specifically, standard practice requirements for the Site Management Plan, as noted by Adams Broadwell include:

- Preparation by a qualified environmental professional and signature and stamp by a professional geologist or professional engineer; and

- Procedures to identify contaminated soil and groundwater during construction, and provisions for managing, removing, transporting, and disposing of any such materials if encountered, in accordance with applicable state, federal, and local regulatory requirements.

In addition, standard practice requirements for the Health and Safety Plan, as noted by Adams Broadwell, include:

- Preparation prior to construction and implementation during construction;

- Identification of potential health and safety risks associated with petroleum-contaminated soil and groundwater, along with appropriate protective responses, if encountered. This may include retaining specially trained workers (e.g., trained under Hazardous Waste Operations and Emergency Response regulations, 29 Code of Federal Regulations Section 1910.120) for portions of the work where contaminated materials may be encountered; and

- Orientation and routine meetings during field work to inform workers of site-specific health and safety risks and hazards.

As described in the CEQA Analysis, a determination of whether the project would have a significant impact has occurred prior to the approval of the Proposed Project and, where applicable, standard conditions of approval and/or mitigation measures in the BVDSP EIR have been identified that will mitigate them, consistent with the requirements of CEQA. As is the case for the Site Management Plan, exactly how the conditions of approval will be achieved can be determined after the approval of the project. This is consistent with CEQA as described in the CEQA Analysis. Specifically, the Site Management Plan will address known and unknown site conditions in a manner consistent with the impacts identified in the CEQA Analysis as follows: it will entail compliance with identified applicable federal, state, or local regulations and requirements; specific performance criteria have been specified and required; and the Proposed Project has committed to developing measures that comply with these requirements and criteria. In addition, the Site Management Plan will be prepared and will include the items reiterated above, which provides sufficient public disclosure for how the plan will address the low levels of contamination identified on the site.

See also Response 1 above which summarizes the City's August 11th Response to comments regarding the adequacy of SCA-HAZ-1 and SCA-HAZ-2 and use of the Site Management Plan to address soil contamination.

Comment 3: *The Adams Broadwell appeal asserts that dewatering impacts have not been adequately addressed in the CEQA Analysis because it does not consider specific handling and disposal requirements if contaminated groundwater is encountered during dewatering, and asserts that SCA-HAZ-2 only provides general provisions for storage and disposal of water generated during dewatering. The Adams Broadwell appeal asserts that an EIR must be prepared to identify the Regional Water Quality Control Board's (RWQCB) dewatering requirements.*

Response 3: The comments provided by Adams Broadwell under this section are identical to those provided in their August 3rd letter. All substantive comments raised by Adams Broadwell regarding this topic have been addressed previously in the City's August 11th Response and are incorporated by reference herein. As described in the City's prior response, no rationale or substantial evidence is presented by the commenter as to why an EIR needs to be prepared. The commenter fails to demonstrate that the Project would have a new significant impact related to dewatering; in fact, the dewatering impact described by the commenter is identical to the impact disclosed in the BVDSP EIR. While not required to be discussed, additional details regarding dewatering and compliance with applicable regulations are provided for informational purposes below. These are specific requirements that would apply to the Project, and all similarly situated projects that require dewatering, including the 4th and Madison Project discussed below. They clearly establish that a detailed and thorough body of regulatory controls and requirements apply and that the reliance of the CEQA Analysis on that body of regulatory controls and requirements is appropriate.

Dewatering activities are common and are typically conducted by either pumping water directly from open excavations or by installing dewatering wells adjacent to the open excavation. In either case (but more so with open excavation dewatering), dewatering effluent may contain turbid water (i.e., water that contains sediment). This turbid water, if discharged directly to receiving waters without treatment, could cause degradation of the receiving water quality.

Any groundwater dewatering would be limited in duration and the water removed would be discharged in accordance with permits issued by the East Bay Municipal Utility District (EBMUD) or the RWQCB, depending on whether the discharge is made to the sanitary sewer system or the storm sewer system. These permits contain effluent limitations protective of receiving waters.

Under existing State law, it is illegal to allow unpermitted non-stormwater discharges to receiving water. As stated in the Construction General Permit[2]:

[2] SWRQB, General Construction Activity Storm Water Permit (General Construction Permit), 2009 (as amended 2010 and 2012), page 31.

> Non-stormwater discharges directly connected to receiving waters or the storm drain system have the potential to negatively impact water quality. The discharger must implement measures to control all non-stormwater discharges during construction, and from dewatering activities associated with construction.

In addition, the Construction General Permit states:[3]

> Discharging any pollutant-laden water that will cause or contribute to an exceedance of the applicable Regional Water Board's Basin Plan from a dewatering site or sediment basin into any receiving water or storm drain is prohibited.

The RWQCB Construction General Permit allows the discharge of dewatering effluent if the water is properly filtered or treated, using appropriate technology that meets regulatory standards. These technologies include, but are not limited to, retention in settling ponds or tanks (where sediments settle out prior to discharge of water) and filtration using gravel and sand filters (to mechanically remove the sediment). If the dewatering activity is deemed by the RWQCB not to be covered by the Construction General Permit, then the discharger would prepare a Report of Waste Discharge for approval by the RWQCB and be issued site-specific Waste Discharge Requirements (WDRs) under the National Pollutant Discharge Elimination System regulations. Site-specific WDRs contain rigorous monitoring requirements and performance standards that, when implemented, ensure that receiving water quality is not substantially degraded and meets regulatory discharge standards.

As described in the CEQA Analysis, if the water is not suitable for discharge to the storm drain (receiving water), as discussed above, dewatering effluent may be discharged to the EBMUD sanitary sewer system if special discharge criteria are met. These include, but are not limited to, application of treatment technologies or Best Management Practices (BMPs) which will result in achieving compliance with the wastewater discharge limits. Discharges to EBMUD's facilities must occur under a Special Discharge Permit. Per the EBMUD Wastewater Ordinance, "Wastewater may be discharged into community sewers for interception, treatment, and disposal by the District provided that such wastewater does not contain substances prohibited, or exceed limitations of wastewater strength, set forth in this Ordinance" (Title II, Section 1). In addition, per the EBMUD Wastewater Ordinance "All dischargers, other than residential, whose wastewater requires special regulation or contains industrial wastes requiring source control, shall secure a wastewater discharge permit" (Title IV, Section 1). As demonstrated above, EBMUD regulates the inputs into its facilities. EBMUD also operates its wastewater treatment facilities in accordance with WDRs issued by the RWQCB, which require rigorous monitoring of effluent to ensure discharges do not adversely impact receiving water quality.

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[3] SWRQB, General Construction Activity Storm Water Permit (General Construction Permit), 2009 (as amended 2010 and 2012), page 8.

If the Proposed Project's dewatering effluent was to contain levels of contamination that could exceed the discharge standards of EBMUD, the water would likely be treated to the standards required by the Special Discharge Permit program using proven technologies (e.g., filtration to remove sediment and/or advanced treatment technologies to remove other pollutants) to the degree the effluent could be discharged (under permit) to the storm or sanitary sewers. Compliance with permit requirements would ensure that the water is tested prior to discharge to ensure that the treatment technologies are effective.

Proper management of dewatering effluent is covered by existing state and local regulations, and implementation of these regulations would protect receiving water quality in accordance with applicable regulatory standards. Compliance with these requirements is routine and neither peculiar nor severe. Therefore, the conclusions in the CEQA Analysis are valid and preparation of an EIR is not warranted.

Section C. Reduction of Construction Emissions as Analyzed in the Health Risk Assessment

Comment: *The Adams Broadwell appeal contends that the City lacks substantial evidence on which to conclude that the construction emissions identified in the applicant's health risk assessment will be reduced to below levels of significance. The appeal asserts that the project's construction emissions could result in a significant health risk impact because the feasibility of the project employing exclusively Tier 4 construction equipment has not been demonstrated. The appeal also contends that the project must also identify alternative mitigation measures that are technologically feasible in the event that the applicant is unable to procure all Tier 4 equipment necessary to construct the Project.*

Response: As described in the CEQA Analysis, the Project's construction health risk has been adequately addressed by the planning-level review and the Project's conditions of approval. Implementation of subsections (w) and (x) of SCA-AIR-1, which require equipment and diesel trucks to be equipped with Best Available Control Technology and meet the California Air Resources Board's most recent certification standard, would reduce emissions of diesel particulate matter (DPM) during construction. In order to comply with subsections (w) and (x) of SCA-AIR-1, the Project sponsor would be required to ensure that construction equipment meet Tier 4 emissions standards, which can reduce emissions of DPM by at least 95 percent relative to equipment without emission control technologies installed.[4]

[4] South Coast Air Quality Management District, 2016. *Mitigation Measures and Control Efficiencies; Off-Road Engines.* Table II (last revised May 2010). http://www.aqmd.gov/home/regulations/ceqa/air-

As stated in the CEQA Analysis, the City's August 11th Response, and other City responses to similar comments raised by Adams Broadwell for other projects within the BVDSP, the BVDSP EIR concluded that construction health risks from DPM were conservatively determined to be significant and unavoidable (Impact AIR-4), even with the incorporation of SCA-AIR-1 (former SCA A). Nothing in the BVDSP EIR indicated that a stand-alone Health Risk Assessment (HRA) for construction-related impacts is required on a project-by-project basis. Nevertheless, the Project sponsor voluntarily acted in good faith to retain a consultant (FirstCarbon Solutions) to prepare a project-level construction HRA for the Project (see Attachment B).[5]

The HRA prepared by FirstCarbon Solutions estimated concentrations of DPM at nearby sensitive receptor locations during Project construction using the United Stated Environmental Protection Agency's AERMOD air dispersion model. Based on estimated DPM concentrations, potential health and hazard impacts were assessed for an infant exposed to the Project's DPM emissions at the maximum impact sensitive receptor location during the temporary construction period. While the HRA also assesses potential health and hazard impacts to a child and adult, the exposure scenario for an infant represents the most sensitive individual who could be exposed to adverse air quality conditions in the vicinity of the Project, and is therefore the most conservative assessment of health risk. The HRA determined that the Project's potential health and hazard impacts at the maximum impacted sensitive receptor from temporary construction emissions, after the application of SCA-AIR-1, would not exceed any of the Bay Area Air Quality Management District's thresholds of significance (Table 1). The City has reviewed the HRA prepared by the applicant's consultant and concurs with the findings of the HRA, which by reference is hereby incorporated, that the Project's impacts would be mitigated to less-than-significant levels with the use of Tier 4 equipment.

The manufacturing of off-road Tier 4 engines for new heavy-duty diesel equipment (175 horsepower or greater) began in 2011 and as of 2012, all new off-road diesel engines sold in the United States were required to meet Tier 4 emissions standards.[6] It should be noted that while there were both "interim" and "final" emission standards phased in for Tier 4 engines (75 to 750 horsepower) between 2011 and 2015, the difference between these emissions standards only applied to oxides of nitrogen (NOx), whereas the limits on emissions of particulate matter were the same. Therefore, Tier 4 engines for off-road equipment that are capable of reducing DPM emissions by at least 95 percent (relative to

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quality-analysis-handbook/mitigation-measures-and-control-efficiencies/off-road-engines. Accessed 7 September.

[5] FirstCarbon Solutions, 2016. *Screening Level Construction Health Risk Assessment for the 24th Street and Harrison Street Project, Oakland, CA.* July 28.

[6] California Air Resources Board, 2015. *Frequently Asked Questions; Regulation for In-Use Off-Road Diesel-Fueled Fleets.* Revised December.

uncontrolled engines) will have been commercially available for purchase or rental for over 5 years by the time the Project construction commences in the fall of 2017.

Table 1: Estimated Health Risks and Hazards during Project Construction

Source	Cancer Risk from DPM (per million)	Chronic Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Without SCA-AIR-1			
Risks and Hazards to an Infant at the Maximum Impacted Sensitive Receptor[A]	23.0	0.03	0.17
BAAQMD Thresholds of Significance	10	1	0.30
Exceed Threshold?	Yes	No	No
With SCA-AIR-1			
Risks and Hazards to an Infant at the Maximum Impacted Sensitive Receptor[A]	6.0	0.01	0.05
BAAQMD Thresholds of Significance	10	1	0.30
Exceed Threshold?	No	No	No

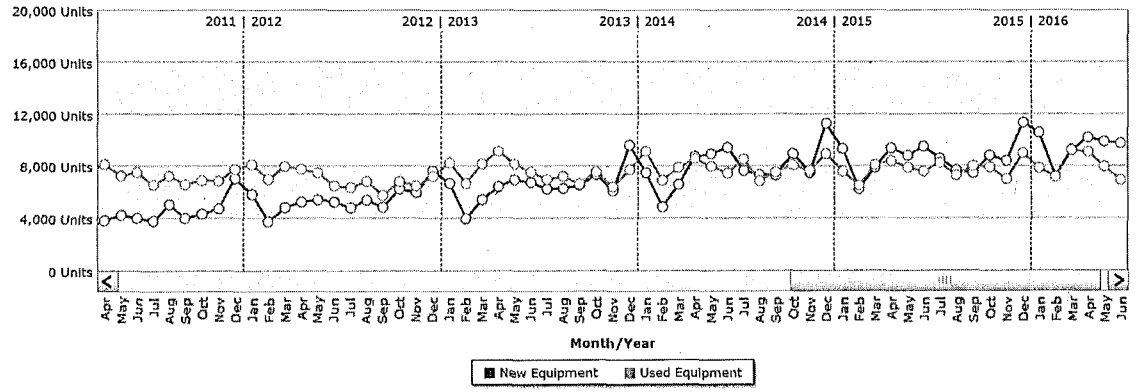
Notes:
BAAQMD = Bay Area Air Quality Management District
$\mu g/m^3$ = micrograms per cubic meter
$PM_{2.5}$ = fine particulate matter
[A] Maximum impacted sensitive receptor is a residence with an infant located approximately 60 feet south of the project across 24th Street.
Source: FirstCarbon Solutions, 2016. Screening Level Construction Health Risk Assessment for the 24th Street and Harrison Street Project, Oakland, CA. July 28.

The purchase of Tier 4 engines is currently being stimulated through the California Air Resources Board's Off-Road Regulation, which requires medium and large fleets to reduce their fleet-average emissions over time by methods such as the replacement of older tier engines. Small fleets will also have to start meeting this State requirement in 2018. In addition to the City of Oakland, there are several other local governments and agencies that have adopted policies related to use of Tier 4 equipment, such as the San Francisco Clean Construction Ordinance and the Los Angeles County Metropolitan Transportation Authority's Green Construction Policy. Based on the ready availability of Tier 4 equipment for purchase or rental and existing regulatory incentives for fleets to acquire Tier 4 equipment, a feasibility analysis to support the Project sponsor's ability to comply with subsections (w) and (x) of SCA-AIR-1 and use Tier 4 equipment during construction is not necessary for the purposes of the CEQA Analysis.

While not required to support the CEQA Analysis (as described above), data on recent sales of new and used construction equipment was reviewed and summarized herein to demonstrate the commercial availability of Tier 4 equipment. As shown in Figure 1, the nationwide monthly sales trend for used construction equipment has remained relatively stable between 2011 and 2016. Over this same time period, the monthly sales trend for

new equipment has increased. Since 2014, the monthly sales for new Tier 4 equipment have generally exceeded the monthly sales for used equipment.[7] These nationwide sales trends indicate that Tier 4 equipment is commercially available and is being acquired at a rate greater than the sale of used construction equipment.

Figure 1. United States Construction Equipment Sales (2011 to 2016)



Source: EDA, 2016.

In addition, while analysis of alternative measures is not required to support the CEQA Analysis, the following subsections of SCA-AIR-1 would also reduce DPM emissions from the Proposed Project: subsections (g) and (h) of SCA-AIR-1 limit the idling time for diesel engines; subsection (i) ensures that construction equipment is maintained in proper condition; subsection (j) specifies the use of electricity, propane, and/or natural gas (if available) for portable equipment. The DPM reductions associated with these measures would be project-specific and cannot be readily quantified. Subsection (w) of SCA-AIR-1 requires all construction equipment, diesel trucks, and generators to be equipped with Best Available Control Technology (BACT), which may include the use of exhaust controls (e.g., a diesel particulate filter [DPF]) and/or alternative fuels. While Tier 4 engines already have incorporated BACT into the engine design, examples of alternative BACTs that can be used to reduce emissions of DPM during construction are summarized in Table 2.

As shown in Table 2, the use of a Tier 2 or 3 engines equipped with a Level 3 DPF and/or using HPR diesel would achieve an 85 to 90 percent reduction in DPM emissions, which is relatively close to the DPM reductions that can be achieved with a Tier 4 engine. Similar to the use of Tier 4 engines, implementation of these alternative BACTs would also reduce the potential health risks to nearby sensitive receptors exposed to DPM during construction to a less-than-significant level.

[7] EDA, 2016. *Industry Insight, Construction Marking Trends, Updated 7/24/2016.* http://www.edadata.com/resources/industryinsight/construction.aspx. Accessed 24 August, 2016.

Table 2: Examples of Best Available Control Technologies for Reducing DPM Emissions

Best Available Control Technologies	DPM Reduction	Reference
Biodiesel (20% Blend)	19% to 25%	CalEPA, 2015
High Performance Renewable (HPR) Diesel	34%	CalEPA, 2013
Tier 2/3 engine	20% to 73%	SCAQMD, 2016
Tier 2/3 engine with Level 3 DPF	85%	SCAQMD, 2016
Tier 2/3 engine with Level 3 DPM and HPR Diesel	90%	CalEPA, 2013; SCAQMD, 2016
Tier 4 engine	95% to 98%	SCAQMD, 2016

Notes: Reported DPM reductions are relative to petroleum diesel and Tier 0 engines.
Sources: California Environmental Protection Agency (CalEPA), 2015. *Staff Report; Multimedia Evaluation of Biodiesel.* May.
California Environmental Protection Agency (CalEPA), 2013. *Staff Report; Multimedia Evaluation of Renewable Diesel.* November.
South Coast Air Quality Management District (SCAQMD), 2016. *Mitigation Measures and Control Efficiencies; Off-Road Engines.* Table II (last revised May 2010) and Table III (last revised September 2009). http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/off-road-engines. Accessed 7 September.

Therefore, although not required by CEQA, the above information shows that Tier 4 engines are adequately available for use on construction sites and further analysis of the feasibility of obtaining such fleets is not required. Further, the use of Tier 4 engines is not the only measure provided in SCA-AIR-1 that would reduce DPM emissions.

Conclusion

As described above, the BVDSP EIR and the CEQA Analysis and technical studies prepared for the Project have been adequately prepared in compliance with the requirements of CEQA, including the requirements for use of an addendum and exemptions. In addition, hazards and hazardous materials have been adequately analyzed and addressed as well as the construction emissions.

Further, Adams Broadwell provided a comment letter related to similar issues on a prior project and indicated their satisfaction with the City's approach to these issues (see Attachment C).[8] Specifically, issues raised by Adams Broadwell on the Jack London Square 4th & Madison Project (4th & Madison Project) that are very similar to issues they have raised in their appeal of this Project are: 1) dewatering during construction; and 2) use of Tier 4 engines to reduce construction emissions. The City's response above and approach in the CEQA Analysis prepared for this Project are substantially the same as the City's response and approach to this topic for the 4th & Madison Project.

[8] Adams Broadwell Joseph & Cardozo, March 16, 2016 Letter regarding Responses to Comments on the Jack London Square 4th & Madison Project (ER 15-005)

For example, dewatering activities during construction and the City's plan to handle potential contaminants related to prior site uses are consistent between both projects. Additionally, Tier 4 engines would be used by the Project sponsor, per the City's conditions of approval as indicated in SCA-AIR-1 for this Project. Similarly, the Tier 4 engines were specified as a condition of approval for the 4th & Madison Project through the same SCA-AIR-1. Adams Broadwell states in their letter on the 4th & Madison Project, "we have no further comments and withdraw our objections to the EIR and the Project."

ATTACHMENT A

24th and Harrison Streets Project - Response to Comment Letter from Adams Broadwell Joseph and Cardozo (PLN 16-080)

URBAN PLANNING PARTNERS INC.

505 17TH STREET
2ND FLOOR
OAKLAND, CA 94612
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WWW.UP-PARTNERS.COM

MEMORANDUM

DATE: August 11, 2016

TO:
PETERSON VOLLMANN, PLANNER IV
CITY OF OAKLAND, BUREAU OF PLANNING

FROM:
HANNAH YOUNG, AICP
JULIAN BOBILEV

Subject: 24th and Harrison Streets Project – Response to Comment Letter from Adams Broadwell Joseph and Cardozo

The California Environmental Quality Act (CEQA) Analysis for the 24th and Harrison Streets Project (Project) (PLN 16-080) was published on July 15, 2016. Adams Broadwell Joseph & Cardozo submitted comments on the above Project, dated August 3, 2016, as well as technical comments prepared by Matt Hagemann and Jessie Jaeger of SWAPE, which were attached to that letter as Exhibit A (hereafter, collectively "Adams Broadwell letter"). This memorandum provides responses to the letter, which are organized into the following topics corresponding to the topics in the comment letter:

A. Consistency with CEQA Addendum and Exemption Requirements
B. On-Site Hazards
C. Health Risk Assessment (HRA)
D. Greenhouse Gas (GHG) Emissions Analysis

The Adams Broadwell comments noted under the introduction to Section II, The City May Not Rely on Previous Environmental Analysis for Project Approval in their letter, are addressed under Section A below.

Section A. Consistency with CEQA Addendum and Exemption Requirement

Comment: *The Adams Broadwell letter argues the City inappropriately relied upon three provisions in CEQA in its CEQA Analysis without a new or subsequent EIR, including the Community Plan Exemption, Qualified Infill Exemption and an Addendum to the Broadway Valdez District Specific Plan Environmental Impact Report (BVDSP EIR). They argue that the City's reliance on these provisions was inappropriate because the Project would have peculiar and more severe significant impacts than previously identified in the BVDSP EIR. They also claim that the Addendum here is improper because it includes a new substantive analysis for a large project not specifically analyzed in the BVDSP EIR.*

Response: The BVDSP EIR analyzed the environmental impacts of the adoption and implementation of the BVDSP at full build out and provided project-level review for reasonably foreseeable development, such as the Project. The City Council certified the BVDSP EIR in accordance with CEQA on June 7, 2014 and the analysis now is presumptively valid under California law. Since that certification, the City has created and relied upon a framework for analyzing projects within the BVDSP area called "CEQA Analysis," which separately and independently provides a basis for CEQA compliance. This framework relies on the applicable streamlining and tiering sections of CEQA: Community Plan Exemption, Qualified Infill Exemption and/or Addendum, as detailed in the CEQA section of the August 3, 2016 Planning Commission Report.

As outlined in exhausting detail, the assumptions and conclusions in the Project's CEQA Analysis are supported by substantial evidence in accordance with CEQA, while none of the assertions presented by Adams Broadwell provide credible, persuasive, or substantial evidence that the Project would result in a new, peculiar, significant environmental impact or a substantial increase in the severity of a significant environmental impact than determined in the BVDSP EIR. In fact, they make numerous misinterpretations of applicable CEQA thresholds for determining significance and misrepresent many material facts about the Project to justify their conclusions.

The BVDSP EIR analyzed development on 95.5 acres in an area of the City known as "Auto Row," an area known to have contaminates associated with automotive uses. The identification of contaminates related to automotive uses on development sites is therefore not peculiar as their existence is not "different from the usual or normal" (Merriam Webster Dictionary definition of "peculiar"). Instead they are normal, as further evidenced by Adams Broadwell raising the same issues on multiple development projects in the City. If they were "peculiar to" a particular site, they would not be repeatedly raised in comment letters by Adams Broadwell.

Significant impacts also are not "peculiar" to a project or property where uniform policies or standards apply that would mitigate the impact. Site specific analysis is not required where, like here, Standard Conditions of Approval (SCAs) apply to mitigate the impact identified and where, as indicated under Appendix M to the CEQA Guidelines, recommendations established by a qualified consultant are implemented. The Project has prepared a Phase I and Phase II Environmental Site Assessment (ESA), and will be required to comply with the recommendations in those reports as well as with SCA-HAZ-1 and SCA-HAZ-2 and condition of approval number 3 , which requires compliance with all "federal, state, regional and local law/codes, requirement, regulations and guidelines." Impacts identified by Adams Broadwell are therefore not peculiar and the Infill and Qualified Infill Exemption are appropriate.

Similarly, construction-related toxic air contaminants (TACs) are likewise not peculiar because the proposed project would use standard construction equipment such as loaders, backhoes, cranes, and haul trucks, similar to other projects under construction in the BVDSP. Moreover, the Project site's proximity to sensitive receptors—the nearest sensitive receptor would be a resident located approximately 60 feet south of the Project site across 24th Street (see Figure 1 of Attachment G of the CEQA Analysis)—is typical of other project sites in the BVDSP area and other urban areas.

In addition, contrary to Adams Broadwell's claim, the substantive nature of the CEQA Analysis prepared is not relevant to a determination of whether an Addendum is appropriate. An Addendum to previously certified EIRs is appropriate as long as the project changes, changed circumstances or new information does not require a subsequent EIR. CEQA makes clear that the only relevant test in whether to prepare an Addendum is whether the provision of CEQA Section 15162 can be satisfied. As the CEQA Analysis correctly concludes, none of these provisions requiring preparation of a supplemental or subsequent EIR apply to the Project. Therefore, an Addendum is appropriate.

The comment regarding the substantive nature and length of the Addendum is irrelevant.[1] Moreover, the discussion merely documents the Project's consistency with the BVDSP and its EIR and satisfies CEQA's primary function as a disclosure document. The detail and scope of the analysis is a result of the various air quality, GHG and transportation model runs and should not be criticized for being overly informative in the context of an Addendum.

Therefore, the conclusions in the CEQA Analysis are valid and preparation of an EIR is not warranted. The Planning staff can appropriately rely on the CEQA Analysis to support its recommended approval of the Project.

Section B. On-Site Hazards

The Adams Broadwell letter states three issues pertaining to hazards: 1) Project site contamination has not been adequately disclosed and mitigated; 2) the City may not rely solely on compliance with regulations or laws as reducing impacts without a full analysis of impacts or enforceable mitigation; and 3) dewatering impacts have not been adequately addressed.

Comment 1: *Regarding the first item, the letter states that the CEQA Analysis fails to adequately describe the Project site's soil contamination which it claims is significant, as well as the construction health risks to the surrounding community, which it claims are new or more severe than previously analyzed. Because the CEQA Analysis fails to adequately disclose the Project's significant levels of contamination, it also fails to analyze the potentially significant health effects of the Project. The letter asserts that the CEQA Analysis contains a mischaracterization of the sample results and of the Phase II conclusions and incorrectly portrays contamination at the Project site as insignificant.*

Response 1: The CEQA Analysis summarizes the findings of the Phase I and II ESAs prepared for the Project parcels. It describes the existing and previous uses of the site, which have included automotive service operations, a gasoline station, and an automobile dealership. Prior uses are described as handling common hazardous materials such as petroleum hydrocarbons, including gasoline, oil, waste oil, and degreasers and solvents. The CEQA Analysis summarizes the contaminant levels identified in the Phase II ESAs. The Phase II ESAs were completed for the site prior to the San Francisco Regional Water Quality

[1] See Fund for Envt'l Defense v County of Orange (1988) 204 CA3d 1538 where a lengthy and detailed addendum was prepared with comprehensive discussions and analysis.

Control Board's (SFRWQCB) update to the Environmental Screening Levels (ESLs) in 2016, but the CEQA Analysis, which occurred after the update cites the current ESLs in reference to contamination levels.

The comment letter mischaracterizes the results of the Phase II ESAs and also references now outdated ESLs. It should be noted that regardless of what ESLs are used, ESLs are guides only and are not action levels nor are they definitions of significant contamination. ESLs are based on modeling with the use of conservative assumptions. In addition, the presence of a chemical at concentrations in excess of an ESL does not necessarily indicate an adverse effect on human health or the environment, rather that additional evaluation is warranted.[2]

Findings for the Phase II ESA completed for the 277 27th Street parcel with respect to the TPH-d (diesel) exceedance are misrepresented in the comment letter, which does not acknowledge that the Phase II ESA interprets the so-called "diesel" to be biogenic interference from naturally occurring organic materials.

Findings for the Phase II ESA completed for the 304 – 322 24th Street parcels indicate that there were no ESL exceedances in soil for petroleum hydrocarbons and only one exceedance for a metal, and no gasoline or diesel results above the 2016 ESLs. Note that the 2016 ESLs do not contain a value for motor oil, but state that it is insoluble in water, so a dissolved motor oil reading is likely to be a degradation product of diesel fuel, indicating biodegradation.

The CEQA Analysis summarizes the findings of the Phase I and II ESAs and states that no significant contamination was detected and the site will be managed in accordance with the recommendations of the Phase II ESA, including the preparation of a Site Management Plan, and the applicable SCAs that include SCA-HAZ-1 and SCA-HAZ-2, referred to in the CEQA Analysis.

The comment letter mischaracterizes SCA HAZ-1 and SCA-HAZ-2 by stating that they merely include general provisions to address "unexpected" contamination that is encountered after earth-moving activities have commenced. SCA HAZ-1 (*Hazardous Materials Related to Construction)* requires the use of best management practices and includes provisions in the event that soil, groundwater, or other environmental medium with suspected contamination is encountered unexpectedly during construction activities and SCA-HAZ-2 *(Site Contamination)* requires the implementation of Phase I and II ESA recommendations and a Health and Safety Plan to protect workers during construction. SCA-HAZ-2 would require implementation of specific sampling and handling and transport procedures for reuse or disposal in accordance with applicable local, state, and federal requirements. The exact method employed or plan to be implemented will be identified in a Site Management Plan, which will be prepared by the Project sponsor, consistent with the Phase II ESA recommendations and will require compliance with identified federal, state or local regulations or requirements and specific performance criteria and the Project sponsor has committed to developing measures that comply with the requirements and criteria

[2] San Francisco Bay Regional Water Quality Control Board, 2016. User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), Interim Final 2016. February 22.

identified. The Health and Safety Plan would adequately protect workers consistent with applicable worker health and safety standards.

In addition, SCA-HAZ-2 requires the implementation of best management practices for the handling of contaminated soil and groundwater discovered during construction activities to ensure their proper storage, treatment, transport, and disposal. Specifically, SCA-HAZ-2 would require that all suspect soil be stockpiled on-site in a secure and safe manner and adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Likewise, groundwater encountered will be staged and sampled prior to discharge to the sewer under permit, or offsite disposal at an appropriate location.

Comment 2: *Adams Broadwell asserts that the CEQA Analysis has erroneously relied on compliance with identified federal, state or local regulations or requirements in its analysis of site contamination and that further analysis of these issues is required.*

Response 2: Adams Broadwell cites three cases, each standing for a different proposition in support of its assertion. *Keep our Mountains Quiet v. County of Santa Clara* is cited for the proposition that a project may comply with a regulation but still have a significant impact. Communities for a *Better Env't v. California Res. Agency* is cited for the proposition that the City has not considered substantial evidence and analyzed and mitigated potentially significant impacts. *Leonoff v. County of Monterey Bd of Supervisors* is cited in support of its assertion that the CEQA Analysis only provides a bare assertion that the Project will comply with the applicable regulations (but see response below). Adams Broadwell, however, fails to cite the long-standing case law precedent in support of reliance on regulatory standards as mitigation. See the following cases: *Perley v Board of Supervisors* (1982) 137 CA3d 424, upholding reliance on compliance with environmental agency requirements as mitigation; *Sundstrom v County of Mendocino* (1988) 202 CA3d 296, finding that the County's reliance on compliance with air and water quality standards to mitigate air and water quality impacts was appropriate; *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 234 CA4th 214, finding the Department of Fish and Wildlife's reliance on compliance with federal regulations for a hatchery genetic management plan was appropriate; and even, *Leonoff v Monterey County Bd. of Supervisors* (1990) 222 CA3d 1337, finding that the County's reliance on compliance with environmental laws on registering hazardous materials and monitoring of underground tanks for leaks was appropriate.

Moreover, in *Oakland Heritage Alliance v. City of Oakland* (2011) 195 CA4th 884, 906, the Court of Appeals held that "a condition requiring compliance with regulations is a common and reasonable mitigation measure and may be proper where it is reasonable to expect compliance." As the City requires compliance with all applicable state, federal and regulatory requirements prior to commencing construction, as set forth under SCA-HAZ-1 and SCA-HAZ-2 and condition of approval # 3 , it is reasonable to expect compliance with the regulatory standards and requirements established for contaminates.

CEQA and established case law also makes clear that the CEQA Analysis can wait to specify how the measures/conditions identified will be achieved provided a determination of impact has been made prior to approval and where known measures/conditions exist that are feasible for the impact identified. Here,

the City has determined the impact of the Project will be less than significant. The City's determination was based on the detailed analysis regarding Hazards and Hazardous Materials prepared as part of the BVDSP EIR and the CEQA Analysis and technical studies prepared. The BVDSP EIR analysis included an overview of the regulatory scheme, evaluated potentially significant impacts associated with development in the BVDSP, analyzed applicable state, federal and local regulatory schemes that would apply, summarized a listing of known contaminated sites in the area and determined that compliance with the SCAs and/or Mitigation Measures would reduce any hazardous impact, and any cumulative hazardous impact, to a less than significant level. The regulations or requirements identified include specific performance criteria that must be met before starting construction and the Project must comply with the mitigation measures and regulatory schemes that were identified to reduce the impacts as identified in the CEQA Analysis and the accompanying technical studies. Additionally, the Project Sponsor has committed to devising measures to satisfy those requirements, but there is no requirement under CEQA to devise those measures now, where, as indicated in the BVDSP EIR and the CEQA Analysis a reasonable basis exists to conclude the impact will be adequately mitigated.[3]

Therefore, the conclusions in the CEQA Analysis are valid and preparation of an EIR is not warranted. The Planning staff can appropriately rely on the CEQA Analysis to support its recommended approval of the Project.

Comment 3: *The Adams Broadwell letter asserts that dewatering impacts have not been adequately addressed in the CEQA Analysis because it does not consider specific handling and disposal requirements when contaminated groundwater is encountered during dewatering, and SCA-HAZ-2 only provides general provisions for storage and disposal of water generated during dewatering. The Adams Broadwell letter asserts that an EIR must be prepared to identify the SFRWQCB's dewatering requirements.*

Response 3: The BVDSP EIR states that "construction in the Plan Area could potentially intercept and disturb impacted soil and/or groundwater." However, "construction and operation of the project would be subject to the stringent state and local policies regarding the handling of contaminated soils and groundwater" (Impact HAZ-3). The EIR lists the SFRWQCB as one of the local agencies with oversight over contaminated groundwater. Because of the established regulatory framework and specific performance standards established under it, the BVDSP EIR determined that the impact pertaining to exposure of hazardous materials in soil and groundwater would be less-than-significant. The commenter fails to demonstrate that the Project would have a new significant impact related to dewatering; in fact, the dewatering impact described by the commenter is identical to the impact disclosed in the EIR. The commenter even correctly states that contaminated groundwater would need to be handled and disposed in accordance with SFRWQCB requirements, as described in the BVDSP EIR, and also stated in the CEQA Analysis ("...any groundwater dewatering would be limited in duration and would be subject to permits from [East Bay Municipal Utility District] EBMUD or the RWQCB", pg. 61). Moreover, as required under SCA-HAZ-2, groundwater pumped from the subsurface shall be contained on-site in a secure and

[3] See also Sacramento Old City Ass'n v City Council (1991) 229 CA3d 1011; Defend the Bay v City of Irvine (2004) 119 CA 4th 1261.

safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies. No rationale or substantial evidence is presented by the commenter as to why an EIR needs to be prepared to needlessly describe existing regulatory requirements which are mentioned in both the BVDSP EIR and the CEQA Analysis, and are readily available for public viewing online.

Section C. Health Risk Assessment (HRA)

The Adams Broadwell letter asserts three main issues related to the Health Risk Assessment: 1) that the air quality screening analysis prepared for the Project incorrectly failed to consider the health risk posed to nearby sensitive receptors from exposure to diesel particulate matter (DPM); 2) the CEQA Analysis is inconsistent with guidance set forth by the Office of Environmental Health Hazard Assessment (OEHHA); and 3) the analysis fails to incorporate applicable mitigation measures.

Comment 1: *The Adams Broadwell letter asserts that the Air Quality Screening Analysis prepared for the Project incorrectly failed to consider the health risk posed to nearby sensitive receptors from exposure to DPM.*

Response 1: The commenter incorrectly asserts that the BVDSP EIR deferred the assessment of health risks from construction activities to the project level stage. In fact, the BVDSP EIR concluded that construction health risks from DPM were conservatively determined to be significant and unavoidable (Impact AIR-4) and identified SCA-AIR-1 (former SCA A) on page 4.2-27 to minimize construction health risks and reduce DPM. The subsections of SCA-AIR-1 that would reduce DPM emissions from the proposed Project include: subsections (g) and (h) of SCA-AIR-1, which limit the idling time for diesel engines; subsection (i), which ensures that construction equipment is maintained in proper condition; subsection (j), which specifies the use of electricity, propane, and/or natural gas (if available) for portable equipment; subsection (u), which requires that off-road equipment meet California Air Resources Board's (CARB) fleet emissions and performance requirements; subsection (w), which requires that equipment and diesel trucks be equipped with Best Available Control Technology; and subsection (x), which requires that off-road heavy diesel engines meet the California Air Resources Board's most recent certification standard. The Project sponsor would ensure that construction equipment meet Tier 4 emissions standards in order to comply with subsections (w) and (x); this equipment is considered the best available technology. These are the most current, feasible control measures to reduce construction-related DPM emissions, but to be conservative the BVDSP EIR still conservatively found the impact to be significant an unavoidable.

Therefore, the construction health risk has been adequately addressed by the planning-level review and the Project's conditions of approval. Furthermore, there is nothing in the BVDSP EIR indicating that a stand-alone health risk assessment (HRA) for construction-related impacts is required on a project-by-project basis.[4] The Project site's proximity to sensitive receptors (See Figure 1 of Appendix G of the CEQA

[4] As discussed in Attachment B of the CEQA Analysis prepared for the Project, the Project is consistent with the development density established by zoning, community plan, specific plan, or general plan policies. Contrary to commenter's assertion, construction associated with the Project (and other projects in the BVDSP area) would not

Analysis) is typical of other project sites in the BVDSP area and other urban areas and there is nothing unique or peculiar about the Project's proximity to sensitive receptors. Consequently, the analysis and conclusions of the BVDSP EIR are still valid for this Project.

Comment 2: *The Adams Broadwell letter asserts that the guidance set forth by OEHHA, which recommends that all short-term projects lasting longer than two months be evaluated for cancer risks to nearby sensitive receptors, is applicable to the project.*

Response 2: The commenter incorrectly suggests that OEHHA's recommended methodology is a formal part of the BAAQMD's applicable guidance. In fact, the OEHHA has no binding authority on the Project that would require a stand-alone construction HRA for the Project.

OEHHA's recommended methodology does not represent substantial new information not known at the time the BVDSP EIR (or the other planning-level EIRs) or a substantial changes in circumstances under which the Project will be undertaken. Further, while BAAQMD may be in the process of adopting this methodology with respect to health risk assessments for proposed revisions to Regulation 2 Permits, Rule 1 General Requirements and Rule 5 New Source Review of Toxic Air Contaminants, BAAQMD has **not** formally adopted the methodology to sources outside of its permit authority, such as mobile construction equipment. Regardless of the use of OEHHA's recommended methodology, a stand-alone construction HRA for the Project is not required for the abovementioned reasons.

Comment 3: *The Adams Broadwell letter asserts that the CEQA analysis fails to incorporate Mitigation Measure AIR-4: Risk Reduction Plan to address the Project's use of an emergency generator.*

Response 3: Contrary to the commenter's assertion, the CEQA Analysis concludes that Mitigation Measure AIR-4 is applicable to the Project. Mitigation Measure AIR-4 provides several potential strategies to reduce localized cancer risks from the operation of backup generators, including the following: "Demonstration using screening analysis or a health risk assessment that project sources, when combined with local cancer risks from cumulative sources with 1,000 feet would be less than 100 in one million" (BVDSP EIR, pg. 4.2-28). This corresponds to the threshold of significance under Impact AIR-4 in the BVDSP EIR.

A screening analysis, incorporated into the CEQA Analysis as Attachment G, was performed per Mitigation Measure AIR-4 and found that "the health risks to existing sensitive receptors from the project's stationary source, when combined with health risks from existing and reasonably foreseeable future sources of TACs, would be less than the City's cumulative health risk thresholds" (CEQA Analysis, pg. 37).

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result in a more severe impact than what was previously disclosed in the BVDSP EIR. Commenter offers no substantial or credible evidence that the Project would have peculiar or unusual impacts or impacts that are new or more significant than previously analyzed in the BVDSP EIR. Therefore, the Project is consistent with the applicable CEQA streamlining provisions (i.e., Public Resources Code Section 21083.3 and State CEQA Guidelines Section 15183, Public Resources Code Section 21094.5 and State CEQA Guidelines Section 15183.3, and Public Resources Code Section 21094.5 and State CEQA Guidelines Section 15183.3) and the CEQA Analysis is appropriately tiered from the BVDSP EIR and streamlined environmental review is allowed for the Project.

Therefore, the Project has fully implemented Mitigation Measure AIR-4. Mitigation Measure AIR-4 is also fully incorporated into the Standard Conditions of Approval and Mitigation Monitoring and Reporting Program (SCAMMRP) for the Project, with the additional note that no further action is required because the Project is below the applicable threshold (cancer risk of less than 100 in one million).

Section D. Greenhouse Gases (GHGs) Emission Analysis

Comment: *SWAPE reviewed the input parameters used to estimate the Project's annual GHG emissions in CalEEMod from all the potential sources. Based on their review, SWAPE claims that the Project's emissions from mobile sources have not been correctly modeled because the default percentages for trip types and lengths utilized in CalEEMod do not accurately reflect the operational trips for the proposed Project.*

SWAPE recommended that 100 percent of the residential trips be allocated to "Home-Other"[5] types and 100 percent of the retail trips be allocated to "Commercial-Nonwork"[6] types. SWAPE also recommended that the average vehicle miles travelled for each land use type be based on 100 percent of the primary trip lengths utilized in CalEEMod and not include potential "pass-by" or "diverted" trips. Based on these recommendations, SWAPE claims that the Project's GHG emissions are underestimated and could potentially exceed one of the City's applicable thresholds, which would then require the Project to prepare a GHG Reduction Plan under SCA 38.

Response: As described in the GHG analysis for the proposed Project (Attachment H of the CEQA Analysis),[7] the most current version of the California Emissions Estimator Model (CalEEMod) was used to estimate the operational emissions of GHGs. Sources of GHG emissions evaluated during operation of the proposed Project included construction, area, energy, mobile, waste, and water. In accordance with CEQA streamlining provisions described under Senate Bill 375, the Project's GHG analysis of mobile sources excluded emissions from cars and light-duty trucks and only evaluated trips associated with medium-duty trucks. As result, the estimated annual GHG emissions from mobile sources would contribute about 0.2% of the Project's total GHG emissions during operation.

The default percentages for trip types and lengths used in CalEEMod are based on a combination of information from specific Air Districts, Caltrans statewide surveys, and/or the Institute of Transportation Engineers Trip Generation Manual. According to the CalEEMod User's Guide, the default percentages of trip types and lengths can be overwritten if users can provide sufficient justification for alternative sources of data (e.g., project-specific traffic study) that demonstrate a different breakdown.

Since this level of information was not developed for the Project as part of the transportation analysis, changes to the default percentages of trip types and lengths in CalEEMod is not justified and these values

[5] A "Home-Other" trip represents all trip types not related to working or shopping generated by a resident.
[6] A "Commercial-Nonwork" trip represents a trip type associated with a commercial land use that is not generated by a customer or worker, such as trips made by delivery vehicles of goods associated with the land use.
[7] BASELINE Environmental Consulting, 2016. *Greenhouse Gases and Climate Change Screening Analysis – 24th and Harrison*. July 11.

were not modified in the Project's original GHG analysis. Furthermore, modifying the Project's default percentages of trip types and lengths in accordance with SWAPE's recommendation would have a negligible effect on the Project's overall GHG emissions, as discussed below.

As shown in Table 1 below, implementing SWAPE's recommendations for modifying the Project's default trip types and lengths in CalEEMod would increase the Project's annual GHG emissions by about 0.9 metric tons of carbon dioxide equivalents annually. This proposed increase in GHG emissions would be negligible since the total GHG emissions for the Project would only increase by about 0.08%. Since the modified estimate of GHG emissions would not result in an exceedance of the City's thresholds of significance, the Project would not need to prepare a GHG Reduction Plan under SCA 38.

Further, even if the Project were to exceed the metric tons GHG threshold (shown in the first column in Table 1) it would not be considered a significant impact, because the Project would still be below the City's efficiency-based threshold (shown in the second column in Table 1). Therefore, this issue is not a CEQA-related issue and does not need to be addressed in the CEQA Analysis. Rather, if a GHG Reduction Plan is required, which it is not here, it would need to be submitted prior to approval of a construction-related permit, per the SCA.

Table 1: Summary of Average Greenhouse Gas Emissions from Operation of the Project

Emissions Scenario	Original Estimate* (MTCO2e/yr)	Original Estimate* (MTC02e/yr/SP)	Modified Estimate (MTCO2e/yr)	Modified Estimate (MTC02e/yr/SP)
Construction	27	0.027	27	0.027
Area	6	0.006	6	0.006
Energy	842	0.866	842	0.866
Mobile	2.0	0.002	2.9	0.003
Waste	125	0.129	125	0.129
Water	60	0.062	60	0.062
Total Project Emissions	1,061	1.09	1,062	1.09
City of Oakland's Thresholds	1,100	4.6	1,100	4.6
Threshold Exceedance?	No	No	No	No

Sources: Original estimates provided by BASELINE (2016).
Modified estimates from CalEEMod results provided in Attachment A.
Notes: MTCO2e/yr = metric tons of carbon dioxide equivalents per year
MTCO2e/yr/SP = metric tons of carbon dioxide equivalents per year per service population
* Original estimate shown in CEQA Analysis.

Attachment A

Modified CalEEMod Results

24th and Harrison Project

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	167.41	1000sqft	0.00	186,726.00	0
Apartments High Rise	450.00	Dwelling Unit	2.28	454,530.00	972
Regional Shopping Center	65.00	1000sqft	0.00	65,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	427	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor changed to the 2013 emission factor reported in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers

Land Use - Lot acreage, building square footage, and residential population based on project design for max development scenario.
Non-residential acreages zeroed out since the project is a mixed-use development located on the same footprint.

Construction Phase - No site preparation included because the project site is devoid of vegetation.

Demolition - Building demo assumption: (Area of buildings)(CalEEMod conversion factor)=(63.740 KSF)(0.046 tons/SF)=2,932 tons
Parking Lot demo assumption:(Area of parking lot)(Depth of asphalt)(Density asphalt)=(38.612 KSF)(0.25 ft)(0.0725 tons/ft^3)=700 tons

Grading - 49,000 cubic yards is max amount of soil excavation based on project design.

Architectural Coating -

Vehicle Trips - In accordance with CEQA streamlining under SB 375, cars and light-duty truck trips excluded. Assumed 14 medium-duty truck trips per week for retail and 2 medium-duty truck trips per week for residential. Trip lengths adjusted.

Vechicle Emission Factors - Fleet mix evaluated only includes medium-duty trucks.

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves - No woodstoves or fireplaces.

Energy Use - CO2 intensity factor changed to the 2013 emission factor reported in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers.

Water And Wastewater - EBMUD services at the project site and applies 100 percent aerobic process and 100 percent cogeneration.

Energy Mitigation - Current 2013 Title 24 energy standards exceed 2008 Title 24 energy standards by 25%. These emission reductions are considered part of the project's unmitigated emissions.

Water Mitigation - CALGreen Code mandatory requirement. These emission reductions are considered part of the project's unmitigated emissions.

Operational Off-Road Equipment - Empty

Area Coating -

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberGas	247.50	0.00
tblFireplaces	NumberNoFireplace	139.50	0.00
tblFireplaces	NumberWood	63.00	0.00
tblGrading	MaterialExported	0.00	49,000.00
tblLandUse	LandUseSquareFeet	167,410.00	186,726.00
tblLandUse	LandUseSquareFeet	450,000.00	454,530.00

tblLandUse	LotAcreage	3.84	0.00
tblLandUse	LotAcreage	7.26	2.28
tblLandUse	LotAcreage	1.49	0.00
tblLandUse	Population	1,287.00	972.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	427
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	VendorTripNumber	89.00	86.00
tblTripsAndVMT	WorkerTripNumber	423.00	415.00
tblTripsAndVMT	WorkerTripNumber	85.00	83.00
tblVehicleEF	HHD	0.05	0.00
tblVehicleEF	LDA	0.54	0.00
tblVehicleEF	LDT1	0.06	0.00
tblVehicleEF	LDT2	0.17	0.00
tblVehicleEF	LHD1	0.03	0.00
tblVehicleEF	LHD2	4.5640e-003	0.00
tblVehicleEF	MCY	5.6840e-003	0.00
tblVehicleEF	MDV	0.11	1.00
tblVehicleEF	MH	1.4180e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.7890e-003	0.00
tblVehicleEF	SBUS	1.9900e-004	0.00
tblVehicleEF	UBUS	3.6610e-003	0.00
tblVehicleTrips	CC_TTP	64.70	0.00
tblVehicleTrips	CNW_TTP	19.00	100.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TTP	44.80	100.00

tblVehicleTrips	HS_TTP	29.10	0.00
tblVehicleTrips	HW_TTP	26.10	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	6.07	4.4000e-003
tblVehicleTrips	SU_TR	25.24	0.22
tblVehicleTrips	WD_TR	6.59	0.00
tblVehicleTrips	WD_TR	42.94	0.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaDigestCogenCombDigestGasPercent	0.00	100.00
tblWater	AnaDigestCogenCombDigestGasPercent	0.00	100.00
tblWater	AnaDigestCogenCombDigestGasPercent	0.00	100.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	2.25	0.00

tblWoodstoves	NumberNoncatalytic	2.25	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	2.5467	4.9137	6.4251	0.0128	0.5951	0.2141	0.8093	0.1602	0.2033	0.3635	0.0000	1,057.9003	1,057.9003	0.0845	0.0000	1,059.6749
2018	2.7090	7.1500e-003	0.0163	4.0000e-005	2.2600e-003	4.7000e-004	2.7300e-003	6.0000e-004	4.7000e-004	1.0700e-003	0.0000	2.6701	2.6701	1.7000e-004	0.0000	2.6736
Total	**5.2557**	**4.9209**	**6.4414**	**0.0129**	**0.5974**	**0.2146**	**0.8120**	**0.1608**	**0.2037**	**0.3645**	**0.0000**	**1,060.5703**	**1,060.5703**	**0.0847**	**0.0000**	**1,062.3485**

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	2.5467	4.9137	6.4250	0.0128	0.5951	0.2141	0.8093	0.1602	0.2033	0.3635	0.0000	1,057.8999	1,057.8999	0.0845	0.0000	1,059.6746
2018	2.7090	7.1500e-003	0.0163	4.0000e-005	2.2600e-003	4.7000e-004	2.7300e-003	6.0000e-004	4.7000e-004	1.0700e-003	0.0000	2.6701	2.6701	1.7000e-004	0.0000	2.6736
Total	**5.2557**	**4.9209**	**6.4414**	**0.0129**	**0.5974**	**0.2146**	**0.8120**	**0.1608**	**0.2037**	**0.3645**	**0.0000**	**1,060.5700**	**1,060.5700**	**0.0847**	**0.0000**	**1,062.3482**

	ROG	NOx	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	3.3118	0.0388	3.3546	1.8000e-004		0.0184	0.0184		0.0184	0.0184	0.0000	5.4621	5.4621	5.3300e-003	0.0000	5.5741
Energy	0.0232	0.1989	0.0910	1.2600e-003		0.0160	0.0160		0.0160	0.0160	0.0000	934.2861	934.2861	0.0523	0.0141	939.7580
Mobile	1.6700e-003	2.1500e-003	0.0170	4.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	2.8914	2.8914	1.6000e-004	0.0000	2.8948
Waste						0.0000	0.0000		0.0000	0.0000	55.8733	0.0000	55.8733	3.3020	0.0000	125.2156
Water						0.0000	0.0000		0.0000	0.0000	12.0767	46.9718	59.0485	0.0448	0.0269	68.3344
Total	**3.3366**	**0.2398**	**3.4625**	**1.4800e-003**	**2.1900e-003**	**0.0345**	**0.0367**	**5.8000e-004**	**0.0345**	**0.0351**	**67.9499**	**989.6114**	**1,057.5614**	**3.4046**	**0.0410**	**1,141.7768**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.3118	0.0388	3.3546	1.8000e-004		0.0184	0.0184		0.0184	0.0184	0.0000	5.4621	5.4621	5.3300e-003	0.0000	5.5741
Energy	0.0184	0.1583	0.0724	1.0100e-003		0.0127	0.0127		0.0127	0.0127	0.0000	836.6904	836.6904	0.0479	0.0125	841.5837
Mobile	1.6700e-003	2.1500e-003	0.0170	4.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	2.8914	2.8914	1.6000e-004	0.0000	2.8948
Waste						*0.0000*	*0.0000*		*0.0000*	*0.0000*	*55.8733*	*0.0000*	55.8733	3.3020	0.0000	125.2156
Water						0.0000	0.0000		0.0000	0.0000	9.6613	43.1492	52.8105	0.0362	0.0216	60.2715
Total	**3.3319**	**0.1993**	**3.4439**	**1.2300e-003**	**2.1900e-003**	**0.0312**	**0.0334**	**5.8000e-004**	**0.0312**	**0.0318**	**65.5346**	**888.1931**	**953.7277**	**3.3916**	**0.0342**	**1,035.5397**

	ROG	NOx	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	**0.14**	**16.91**	**0.54**	**16.89**	**0.00**	**9.49**	**8.92**	**0.00**	**9.49**	**9.33**	**3.55**	**10.25**	**9.82**	**0.38**	**16.74**	**9.30**

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	1/27/2017	5	20	
2	Grading	Grading	1/28/2017	2/6/2017	5	6	
3	Building Construction	Building Construction	2/7/2017	12/11/2017	5	220	
4	Paving	Paving	12/12/2017	12/25/2017	5	10	
5	Architectural Coating	Architectural Coating	12/26/2017	1/8/2018	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 920,423; Residential Outdoor: 306,808; Non-Residential Indoor: 377,589; Non-Residential Outdoor: 125,863 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	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	5	13.00	0.00	359.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	6,125.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	415.00	86.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	83.00	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					
Fugitive Dust					0.0389	0.0000	0.0389	5.8800e-003	0.0000	5.8800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4126
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**0.0389**	**0.0161**	**0.0549**	**5.8800e-003**	**0.0150**	**0.0209**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4126**

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	3.8400e-003	0.0483	0.0428	1.4000e-004	3.0300e-003	6.2000e-004	3.6500e-003	8.3000e-004	5.7000e-004	1.4000e-003	0.0000	12.1744	12.1744	9.0000e-005	0.0000	12.1763
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	4.4000e-004	6.6000e-004	6.3100e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0324	1.0324	6.0000e-005	0.0000	1.0336
Total	**4.2800e-003**	**0.0489**	**0.0491**	**1.5000e-004**	**4.2100e-003**	**6.3000e-004**	**4.8400e-003**	**1.1400e-003**	**5.8000e-004**	**1.7200e-003**	**0.0000**	**13.2068**	**13.2068**	**1.5000e-004**	**0.0000**	**13.2099**

3.2 Demolition - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0389	0.0000	0.0389	5.8800e-003	0.0000	5.8800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4125
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**0.0389**	**0.0161**	**0.0549**	**5.8800e-003**	**0.0150**	**0.0209**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4125**

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	3.8400e-003	0.0483	0.0428	1.4000e-004	3.0300e-003	6.2000e-004	3.6500e-003	8.3000e-004	5.7000e-004	1.4000e-003	0.0000	12.1744	12.1744	9.0000e-005	0.0000	12.1763
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	4.4000e-004	6.6000e-004	6.3100e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0324	1.0324	6.0000e-005	0.0000	1.0336
Total	**4.2800e-003**	**0.0489**	**0.0491**	**1.5000e-004**	**4.2100e-003**	**6.3000e-004**	**4.8400e-003**	**1.1400e-003**	**5.8000e-004**	**1.7200e-003**	**0.0000**	**13.2068**	**13.2068**	**1.5000e-004**	**0.0000**	**13.2099**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0224	0.0000	0.0224	0.0105	0.0000	0.0105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0900e-003	0.0845	0.0569	6.0000e-005		4.6700e-003	4.6700e-003		4.2900e-003	4.2900e-003	0.0000	5.7277	5.7277	1.7500e-003	0.0000	5.7646
Total	**8.0900e-003**	**0.0845**	**0.0569**	**6.0000e-005**	**0.0224**	**4.6700e-003**	**0.0271**	**0.0105**	**4.2900e-003**	**0.0148**	**0.0000**	**5.7277**	**5.7277**	**1.7500e-003**	**0.0000**	**5.7646**

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	0.0655	0.8238	0.7296	2.3100e-003	0.0517	0.0106	0.0623	0.0142	9.7600e-003	0.0240	0.0000	207.7109	207.7109	1.5100e-003	0.0000	207.7427
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-004	1.5000e-004	1.4600e-003	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2383	0.2383	1.0000e-005	0.0000	0.2385
Total	**0.0656**	**0.8239**	**0.7311**	**2.3100e-003**	**0.0520**	**0.0106**	**0.0626**	**0.0143**	**9.7600e-003**	**0.0240**	**0.0000**	**207.9492**	**207.9492**	**1.5200e-003**	**0.0000**	**207.9812**

3.3 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0224	0.0000	0.0224	0.0105	0.0000	0.0105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0900e-003	0.0845	0.0569	6.0000e-005		4.6700e-003	4.6700e-003		4.2900e-003	4.2900e-003	0.0000	5.7277	5.7277	1.7500e-003	0.0000	5.7646
Total	**8.0900e-003**	**0.0845**	**0.0569**	**6.0000e-005**	**0.0224**	**4.6700e-003**	**0.0271**	**0.0105**	**4.2900e-003**	**0.0148**	**0.0000**	**5.7277**	**5.7277**	**1.7500e-003**	**0.0000**	**5.7646**

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	0.0655	0.8238	0.7296	2.3100e-003	0.0517	0.0106	0.0623	0.0142	9.7600e-003	0.0240	0.0000	207.7109	207.7109	1.5100e-003	0.0000	207.7427
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-004	1.5000e-004	1.4600e-003	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2383	0.2383	1.0000e-005	0.0000	0.2385
Total	**0.0656**	**0.8239**	**0.7311**	**2.3100e-003**	**0.0520**	**0.0106**	**0.0626**	**0.0143**	**9.7600e-003**	**0.0240**	**0.0000**	**207.9492**	**207.9492**	**1.5200e-003**	**0.0000**	**207.9812**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3660	2.5144	1.7874	2.7400e-003		0.1608	0.1608		0.1540	0.1540	0.0000	232.9955	232.9955	0.0518	0.0000	234.0829
Total	**0.3660**	**2.5144**	**1.7874**	**2.7400e-003**		**0.1608**	**0.1608**		**0.1540**	**0.1540**	**0.0000**	**232.9955**	**232.9955**	**0.0518**	**0.0000**	**234.0829**

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	0.1064	0.8570	1.2998	2.2700e-003	0.0612	0.0125	0.0736	0.0176	0.0115	0.0290	0.0000	202.6938	202.6938	1.5800e-003	0.0000	202.7270
Worker	0.1546	0.2312	2.2164	4.9500e-003	0.4144	3.3700e-003	0.4177	0.1102	3.1000e-003	0.1133	0.0000	362.5464	362.5464	0.0195	0.0000	362.9554
Total	**0.2610**	**1.0882**	**3.5162**	**7.2200e-003**	**0.4755**	**0.0158**	**0.4913**	**0.1278**	**0.0146**	**0.1424**	**0.0000**	**565.2402**	**565.2402**	**0.0211**	**0.0000**	**565.6824**

3.4 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3660	2.5144	1.7874	2.7400e-003		0.1608	0.1608		0.1540	0.1540	0.0000	232.9952	232.9952	0.0518	0.0000	234.0827
Total	**0.3660**	**2.5144**	**1.7874**	**2.7400e-003**		**0.1608**	**0.1608**		**0.1540**	**0.1540**	**0.0000**	**232.9952**	**232.9952**	**0.0518**	**0.0000**	**234.0827**

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	0.1064	0.8570	1.2998	2.2700e-003	0.0612	0.0125	0.0736	0.0176	0.0115	0.0290	0.0000	202.6938	202.6938	1.5800e-003	0.0000	202.7270
Worker	0.1546	0.2312	2.2164	4.9500e-003	0.4144	3.3700e-003	0.4177	0.1102	3.1000e-003	0.1133	0.0000	362.5464	362.5464	0.0195	0.0000	362.9554
Total	**0.2610**	**1.0882**	**3.5162**	**7.2200e-003**	**0.4755**	**0.0158**	**0.4913**	**0.1278**	**0.0146**	**0.1424**	**0.0000**	**565.2402**	**565.2402**	**0.0211**	**0.0000**	**565.6824**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2000e-003	0.0823	0.0603	9.0000e-005		5.1100e-003	5.1100e-003		4.7100e-003	4.7100e-003	0.0000	8.0625	8.0625	2.4200e-003	0.0000	8.1134
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2000e-003**	**0.0823**	**0.0603**	**9.0000e-005**		**5.1100e-003**	**5.1100e-003**		**4.7100e-003**	**4.7100e-003**	**0.0000**	**8.0625**	**8.0625**	**2.4200e-003**	**0.0000**	**8.1134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.8000e-004	3.6400e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.9000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	0.5956	0.5956	3.0000e-005	0.0000	0.5963
Total	**2.5000e-004**	**3.8000e-004**	**3.6400e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.5956**	**0.5956**	**3.0000e-005**	**0.0000**	**0.5963**

3.5 Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2000e-003	0.0823	0.0603	9.0000e-005		5.1100e-003	5.1100e-003		4.7100e-003	4.7100e-003	0.0000	8.0625	8.0625	2.4200e-003	0.0000	8.1134
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2000e-003**	**0.0823**	**0.0603**	**9.0000e-005**		**5.1100e-003**	**5.1100e-003**		**4.7100e-003**	**4.7100e-003**	**0.0000**	**8.0625**	**8.0625**	**2.4200e-003**	**0.0000**	**8.1134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.8000e-004	3.6400e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.9000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	0.5956	0.5956	3.0000e-005	0.0000	0.5963
Total	**2.5000e-004**	**3.8000e-004**	**3.6400e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.5956**	**0.5956**	**3.0000e-005**	**0.0000**	**0.5963**

3.6 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	1.8049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6000e-004	4.3700e-003	3.7400e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	0.5107	0.5107	5.0000e-005	0.0000	0.5118
Total	**1.8056**	**4.3700e-003**	**3.7400e-003**	**1.0000e-005**		**3.5000e-004**	**3.5000e-004**		**3.5000e-004**	**3.5000e-004**	**0.0000**	**0.5107**	**0.5107**	**5.0000e-005**	**0.0000**	**0.5118**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	8.4000e-004	8.0600e-003	2.0000e-005	1.5100e-003	1.0000e-005	1.5200e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3184	1.3184	7.0000e-005	0.0000	1.3198
Total	**5.6000e-004**	**8.4000e-004**	**8.0600e-003**	**2.0000e-005**	**1.5100e-003**	**1.0000e-005**	**1.5200e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.3184**	**1.3184**	**7.0000e-005**	**0.0000**	**1.3198**

3.6 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6000e-004	4.3700e-003	3.7400e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	0.5107	0.5107	5.0000e-005	0.0000	0.5118
Total	**1.8056**	**4.3700e-003**	**3.7400e-003**	**1.0000e-005**		**3.5000e-004**	**3.5000e-004**		**3.5000e-004**	**3.5000e-004**	**0.0000**	**0.5107**	**0.5107**	**5.0000e-005**	**0.0000**	**0.5118**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	8.4000e-004	8.0600e-003	2.0000e-005	1.5100e-003	1.0000e-005	1.5200e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3184	1.3184	7.0000e-005	0.0000	1.3198
Total	**5.6000e-004**	**8.4000e-004**	**8.0600e-003**	**2.0000e-005**	**1.5100e-003**	**1.0000e-005**	**1.5200e-003**	**4.0000e-004**	**1.0000e-005**	**4.1000e-004**	**0.0000**	**1.3184**	**1.3184**	**7.0000e-005**	**0.0000**	**1.3198**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.7073					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0200e-003	5.5600e-003	1.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	0.7660	0.7660	7.0000e-005	0.0000	0.7675
Total	**2.7082**	**6.0200e-003**	**5.5600e-003**	**1.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**0.7660**	**0.7660**	**7.0000e-005**	**0.0000**	**0.7675**

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	7.5000e-004	1.1300e-003	0.0108	3.0000e-005	2.2600e-003	2.0000e-005	2.2800e-003	6.0000e-004	2.0000e-005	6.2000e-004	0.0000	1.9041	1.9041	1.0000e-004	0.0000	1.9061
Total	**7.5000e-004**	**1.1300e-003**	**0.0108**	**3.0000e-005**	**2.2600e-003**	**2.0000e-005**	**2.2800e-003**	**6.0000e-004**	**2.0000e-005**	**6.2000e-004**	**0.0000**	**1.9041**	**1.9041**	**1.0000e-004**	**0.0000**	**1.9061**

3.6 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.7073					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0200e-003	5.5600e-003	1.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	0.7660	0.7660	7.0000e-005	0.0000	0.7675
Total	**2.7082**	**6.0200e-003**	**5.5600e-003**	**1.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**0.7660**	**0.7660**	**7.0000e-005**	**0.0000**	**0.7675**

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	7.5000e-004	1.1300e-003	0.0108	3.0000e-005	2.2600e-003	2.0000e-005	2.2800e-003	6.0000e-004	2.0000e-005	6.2000e-004	0.0000	1.9041	1.9041	1.0000e-004	0.0000	1.9061
Total	**7.5000e-004**	**1.1300e-003**	**0.0108**	**3.0000e-005**	**2.2600e-003**	**2.0000e-005**	**2.2800e-003**	**6.0000e-004**	**2.0000e-005**	**6.2000e-004**	**0.0000**	**1.9041**	**1.9041**	**1.0000e-004**	**0.0000**	**1.9061**

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	1.6700e-003	2.1500e-003	0.0170	4.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	2.8914	2.8914	1.6000e-004	0.0000	2.8948
Unmitigated	1.6700e-003	2.1500e-003	0.0170	4.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	2.8914	2.8914	1.6000e-004	0.0000	2.8948

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	0.00	0.00	1.98	556	556
Enclosed Parking with Elevator	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	14.30	5,428	5,428
Total	0.00	0.00	16.28	5,984	5,984

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-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	12.40	4.30	5.40	0.00	0.00	100.00	100	0	0
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Regional Shopping Center	9.50	7.30	7.30	0.00	0.00	100.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	654.1614	654.1614	0.0444	9.1900e-003	657.9439
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	705.0271	705.0271	0.0479	9.9100e-003	709.1037
NaturalGas Mitigated	0.0184	0.1583	0.0724	1.0100e-003		0.0127	0.0127		0.0127	0.0127	0.0000	182.5290	182.5290	3.5000e-003	3.3500e-003	183.6398
NaturalGas Unmitigated	0.0232	0.1989	0.0910	1.2600e-003		0.0160	0.0160		0.0160	0.0160	0.0000	229.2590	229.2590	4.3900e-003	4.2000e-003	230.6542

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					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	312000	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	16.6495	16.6495	3.2000e-004	3.1000e-004	16.7508
Apartments High Rise	3.98415e+006	0.0215	0.1836	0.0781	1.1700e-003		0.0148	0.0148		0.0148	0.0148	0.0000	212.6095	212.6095	4.0800e-003	3.9000e-003	213.9034
Total		**0.0232**	**0.1989**	**0.0910**	**1.2600e-003**		**0.0160**	**0.0160**		**0.0160**	**0.0160**	**0.0000**	**229.2590**	**229.2590**	**4.4000e-003**	**4.2100e-003**	**230.6542**

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					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	245375	1.3200e-003	0.0120	0.0101	7.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	13.0941	13.0941	2.5000e-004	2.4000e-004	13.1738
Apartments High Rise	3.17509e+006	0.0171	0.1463	0.0623	9.3000e-004		0.0118	0.0118		0.0118	0.0118	0.0000	169.4348	169.4348	3.2500e-003	3.1100e-003	170.4660
Total		**0.0184**	**0.1583**	**0.0724**	**1.0000e-003**		**0.0127**	**0.0127**		**0.0127**	**0.0127**	**0.0000**	**182.5290**	**182.5290**	**3.5000e-003**	**3.3500e-003**	**183.6398**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.62691e+006	315.1059	0.0214	4.4300e-003	316.9279
Enclosed Parking with Elevator	1.25853e+006	243.7577	0.0166	3.4300e-003	245.1671
Regional Shopping Center	754650	146.1636	9.9300e-003	2.0500e-003	147.0087
Total		**705.0271**	**0.0479**	**9.9100e-003**	**709.1037**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.5918e+006	308.3065	0.0209	4.3300e-003	310.0892
Enclosed Parking with Elevator	1.07554e+006	208.3152	0.0142	2.9300e-003	209.5197
Regional Shopping Center	710125	137.5398	9.3400e-003	1.9300e-003	138.3351
Total		**654.1614**	**0.0444**	**9.1900e-003**	**657.9439**

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	3.3118	0.0388	3.3546	1.8000e-004		0.0184	0.0184		0.0184	0.0184	0.0000	5.4621	5.4621	5.3300e-003	0.0000	5.5741
Unmitigated	3.3118	0.0388	3.3546	1.8000e-004		0.0184	0.0184		0.0184	0.0184	0.0000	5.4621	5.4621	5.3300e-003	0.0000	5.5741

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*	0.4512					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7583					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1023	0.0388	3.3546	1.8000e-004		0.0184	0.0184		0.0184	0.0184	0.0000	5.4621	5.4621	5.3300e-003	0.0000	5.5741
Total	**3.3118**	**0.0388**	**3.3546**	**1.8000e-004**		**0.0184**	**0.0184**		**0.0184**	**0.0184**	**0.0000**	**5.4621**	**5.4621**	**5.3300e-003**	**0.0000**	**5.5741**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4512					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7583					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1023	0.0388	3.3546	1.8000e-004		0.0184	0.0184		0.0184	0.0184	0.0000	5.4621	5.4621	5.3300e-003	0.0000	5.5741
Total	**3.3118**	**0.0388**	**3.3546**	**1.8000e-004**		**0.0184**	**0.0184**		**0.0184**	**0.0184**	**0.0000**	**5.4621**	**5.4621**	**5.3300e-003**	**0.0000**	**5.5741**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	52.8105	0.0362	0.0216	60.2715
Unmitigated	59.0485	0.0448	0.0269	68.3344

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	29.3193 / 18.4839	50.7686	0.0385	0.0231	58.7451
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	4.81471 / 2.95095	8.2798	6.3100e-003	3.8000e-003	9.5894
Total		**59.0485**	**0.0448**	**0.0269**	**68.3344**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	23.4554 / 18.4839	45.4106	0.0311	0.0186	51.8195
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.85177 / 2.95095	7.3999	5.1000e-003	3.0500e-003	8.4521
Total		**52.8105**	**0.0362**	**0.0216**	**60.2715**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	55.8733	3.3020	0.0000	125.2156
Unmitigated	55.8733	3.3020	0.0000	125.2156

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	207	42.0191	2.4833	0.0000	94.1676
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	68.25	13.8541	0.8188	0.0000	31.0480
Total		**55.8733**	**3.3020**	**0.0000**	**125.2156**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	207	42.0191	2.4833	0.0000	94.1676
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	68.25	13.8541	0.8188	0.0000	31.0480
Total		**55.8733**	**3.3020**	**0.0000**	**125.2156**

9.0 Operational Offroad

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

10.0 Vegetation

ATTACHMENT B

Response to the SWAPE Comment Letter Regarding a Screening-Level Construction Health Risk Assessment for the 24th Street and Harrison Street Project, Oakland, CA
And
Screening Level Construction Health Risk Assessment for the 24th Street and Harrison Street Project, Oakland, CA - July 28, 2016
Prepared by FirstCarbon Solutions

FIRSTCARBON
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Memo

Date: August 11, 2016

To: Ms. Alexis Pelosi
Principal Attorney
Pelosi Law Group
560 Mission Street, Suite 2800
San Francisco, CA, 94105

From: Jason Brandman, Vice President

Subject: Response to the SWAPE Comment Letter Regarding a Screening-Level Construction Health Risk Assessment for the 24th Street and Harrison Street Project, Oakland, CA

Purpose

The purpose of this report is to respond to the comment letter submitted to the City of Oakland Planning Department by Adams Broadwell Joseph & Cardozo, in Exhibit A from the SWAPE Technical Consultation, Data Analysis, and Litigation Support for the Environment (SWAPE) dated August 3, 2016 on the subject project. The letter commented on page 6 regarding the absence of a construction health risk assessment submitted as part of the project CEQA Analysis for the project. As part of their comments, the SWAPE provided a screening assessment of the potential health risks from project construction using the projected level of construction diesel exhaust emissions contained in Appendix H of the CEQA Checklist and the AERSCREEN air quality screening model published by the United States Environmental Protection Agency. The SWAPE screening analysis estimated a cancer risk of 136 in one million at a nearby sensitive receptor (infant) based on construction emissions with the application of the City of Oakland's Standard Conditions of Approval. The following comments are provided regarding the SWAPE screening construction health risk assessment.

Comment 1: Page 7. The Bay Area Air Quality Management District (BAAQMD) uses $PM_{2.5}$ exhaust to represent diesel particulate matter (DPM) for the purposes of estimating cancer risks[1]. The SWAPE screening assessment used PM_{10} exhaust to represent the construction DPM emissions resulting in an overestimate of 5 to 10 percent compared to the emissions estimate using $PM_{2.5}$ exhaust to represent DPM emissions.

Comment 2: Page 7. The SWAPE assessment relied on the AERSCREEN model to provide an estimate of cancer risks at nearby downwind locations. The attached Technical Memorandum dated July 28, 2016 (included as Appendix A to this Memo) provides a refined construction health risk assessment that accounts for variability in meteorological conditions at the project site, a representative construction

[1] BAAQMD 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

schedule, and on-site (off-road construction equipment) and off-site (diesel vendor, worker, and haul trucks) sources of DPM emissions.

Comment 3: Page 7. The SWAPE estimation of the average construction emissions assumed that construction would occur 24 hours per day, 365 days per year. A more reasonable construction schedule would take place over 8 hours per day, 5 days per week.

Comment 4: Page 7. The SWAPE screening assessment applied the cancer risk estimation methodology recommended by the California Office of Environmental Health Hazards Assessment (OEHHA) that emphasizes the increased sensitivity and susceptibility of infants to exposures to toxics air contaminants such as diesel.[2] In January 2016, the BAAQMD published its cancer risk estimation methodology as part of its Regulation 2-5-402 to conform to the Health Risk Assessment Guidelines adopted by the OEHHA for use in the Air Toxics Hot Spots Program.[3] The BAAQMD cancer risk estimation guidance differs from the SWAPE assumptions on several parameters that are involved in estimating cancer risks, namely daily breathing rate and time at home values. Table 1 compares the SWAPE cancer risk estimation parameters and those contained in Appendix A as derived from the latest BAAQMD cancer risk estimation guidance.

Table 1: Comparison of Cancer Risk Estimation Guidance

Metric	SWAPE Assumption[(1)]	BAAQMD Guidance[(2)]
Daily Breathing Rates	Infant: 581 L/kg-day Child: 581 L/kg-day Adult: 302 L/kg/day	Infant: 3rd Trimester: 361 L/kg-day 1 year: 1,090 L/kg/day Child: 572 L/kg/day Adult: 261 L/kg/day
Time at Home Factors	Not Included	Infant: 85% Child: 73% Adult: 72%
Cancer Potency Factor	1.1 $(mg/kg\text{-}day)^{-1}$	1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Duration	1.02 years	Infant: 3rd Trimester + 1 year Child: 1 year Adult: 1 year
Exposure Frequency	350 days	350 days
Age Sensitivity Factor	Infant: 10 Child: 3 Adult: 1	Infant: 10 Child: 3 Adult: 1

[2] California Office of Environmental Health Hazards Assessment. 2015. Guidance Manual for Preparation of Health Risk Assessments. Website: http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

[3] Bay Area Air Quality Management District. 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en.

Table 1 (cont.): Comparison of Cancer Risk Estimation Guidance

Metric	SWAPE Assumption[1]	BAAQMD Guidance[2]
Notes: L = liters kg = kilogram mg = milogram [1] Letter from Adams Broadwell Joseph & Cardozo to the City of Oakland Planning Commission, August 3, 2016 contained in Exhibit A. [2] Bay Area Air Quality Management District 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en		

Table 2 compares the resulting cancer risk impacts from the SWAPE estimation with the risks from the application of a refined modeling assessment using the AERMOD air dispersion model, site-representative meteorological data, and a representative construction schedule.

Table 2: Comparison of Diesel Particulate Matter and Cancer Risk Impacts

Metric	SWAPE Assumption[1]	Appendix A[2]
Annual Average DPM Concentration	1.52 $\mu g/m^3$	0.16 $\mu g/m^3$
Cancer risk: Infants	136 in one million	23 in one million
Cancer Risk: Child	41 in one million	3 in one million
Cancer Risk: Adult	7 in one million	0.4 in one million
Notes: [1] Letter from Adams Broadwell Joseph & Cardozo to the City of Oakland Planning Commission, August 3, 2016 contained in Exhibit A [2] See Appendix A to this response to comment letter		

As noted from Table 2, a more refined assessment of construction impacts indicates a substantially lower estimate of diesel particulate matter and cancer risks than estimated using a very conservative screening assessment performed by the SWAPE. Nonetheless, the more refined cancer risk estimate for infants still exceeds the BAAQMD's cancer risk significance threshold of 10 in one million.

As noted in the project's CEQA Analysis, implementation of subsections (w) and (x) of SCA-AIR-1, which require equipment and diesel trucks to be equipped with Best Available Control Technology and meet the California Air Resources Board's most recent certification standard, would reduce emissions of diesel particulate matter during construction. In order to comply with subsections (w) and (x) of SCA-AIR-1, the project sponsor would be required to ensure that construction equipment meet Tier 4 emissions standards, which can reduce emissions of diesel particulate matter by at least 85 percent relative to equipment without emission control technologies installed.

Table 3 summarizes the project construction cancer risks after the application of Tier 4 construction emission standards.

Table 3: Project Construction Health Risks with Mitigation

Metric	Appendix A
Cancer risk: Infants	6 in one million
Cancer Risk: Child	0.8 in one million
Cancer Risk: Adult	0.1 in one million
BAAQMD Cancer Risk Significance Threshold	10 in one million
Exceeds Threshold?	No

As noted from Table 3, with the incorporation of Tier 4 emission standard construction equipment, the estimated maximum cancer risks to infants, children, and adults would not exceed the BAAQMD's cancer risk significance threshold of 10 in one million.

Appendix A:
Refined Level Construction Health Risk Assessment for the 24th Street and Harrison Street Project, Oakland, CA

FIRSTCARBON SOLUTIONS™

Memo

Date: July 28, 2016

To: Ms. Alexis Pelosi
Principal Attorney
Pelosi Law Group
560 Mission Street, Suite 2800
San Francisco, CA, 94105

From: Jason Brandman, Vice President

Subject: Refined Level Construction Health Risk Assessment for the 24th Street and Harrison Street Project, Oakland, CA

Purpose

The purpose of this report is to provide a refined-level health risk assessment to determine whether toxic air contaminant (TAC) emissions from the construction of the 24th Street and Harrison Street Project (project) would exceed health risk significance thresholds identified by the Bay Area Air Quality Management District (BAAQMD). This report relied upon the guidance and tools developed by the BAAQMD to assist in performing such health risk assessments. In accordance with BAAQMD guidance and tools, all sources of TAC emissions located within 1,000 feet of the project were identified and their potential cumulative health impacts along with those from the project were quantified.

This assessment also relied on the project's CEQA Analysis[1] prepared for this project. The CEQA checklist contained within the CEQA Analysis and its supporting information provided data on the project's construction emissions, project-level and cumulative impacts, and requisite standard conditions of approval and mitigation measures to minimize the project's air quality and health risk impacts. The information contained within the CEQA Analysis is incorporated by reference.

Project Location

The project applicant, NASH–Holland 24th and Harrison Investors, LLC, is proposing to redevelop five parcels within the Broadway Valdez District Specific Plan (BVDSP or Plan) area into a mixed-use development. The project site is currently occupied by an Acura car dealership and warehouse, surface parking lots, auto repair shops, and a fitness facility. The project would include construction of an 18-story, mixed-use residential and retail building, including a parking garage, with an area of approximately 730,655 gross square feet. The proposed building would have a maximum height of 200 feet and would be built above one level of subterranean parking. The project would include approximately 65,000 square feet of commercial space along 24th and 27th Streets, and approximately

[1] City of Oakland. 2016. 24th and Harrison Streets Project CEQA Analysis. July. Website: http://www2.oaklandnet.com/oakca1/groups/ceda/documents/report/oak059792.pdf.

355,645 square feet of residential uses with up to 448 residential units. The project would provide up to 181,848 square feet of parking in the podium structure, consisting of up to 465 vehicle parking spaces and 302 bicycle parking spaces.

Exhibit 1 provides the location of the project, while Exhibit 2 provides a site plan for the project. As contained in the Project Description section of the CEQA Analysis, project construction is expected to commence in the fall of 2017 and last for approximately 30 months. However, the information contained within the air quality assessment of the CEQA Analysis assumed that the construction would commence in January 2017 and would be completed in January 2018. This represents a conservative assumption in that the emissions are concentrated in a single year (2017) rather than being spread in lower amounts over several years. This is particularly important because of the way the BAAQMD guidance on estimating cancer risks is employed, which weights a project's TAC emissions in its earliest years of construction far greater than the emissions in later years. The project was assumed to be occupied beginning in January 2020.

Sensitive receptors in the form of existing residences are generally located to the south and east of the project. The closest sensitive receptors are existing residences located approximately 60 feet south of the project across 24th Street.

Exhibit 3 provides the locations of nearby sensitive receptors.

Project Summary

This health risk assessment consisted of four principal components:

1. Quantify the TAC emissions from the construction of the project.
2. Identify the sources of TAC emissions and their emission levels located within a 1,000-foot radius from the project.
3. Estimate the health impacts to surrounding sensitive receptors such as residences and schools from the project-level construction emissions using a refined air dispersion modeling assessment and as part of the cumulative assessment of health risks from the identified sources of TAC emissions within 1,000 feet of the project.
4. Compare the resulting project-level and cumulative health impacts with health risk significance thresholds developed by the BAAQMD.

On the basis of the assessment provided herein, the project's construction emissions would not exceed the BAAQMD project-level health risk significance thresholds after application of standard conditions of acceptance and mitigation measures. The project's construction emissions in combination with TAC emissions from existing and future sources of TAC emissions within 1,000 feet of the project would not expose nearby sensitive receptors to cancer risks or hazard levels that exceed the BAAQMD cumulative health risk significance thresholds. Therefore, the construction of the project would not result in a project-level or cumulative significant health risk impact.

Source: 24th and Harrison Streets CEQA Analysis, July 2016, Google Earth, 2016

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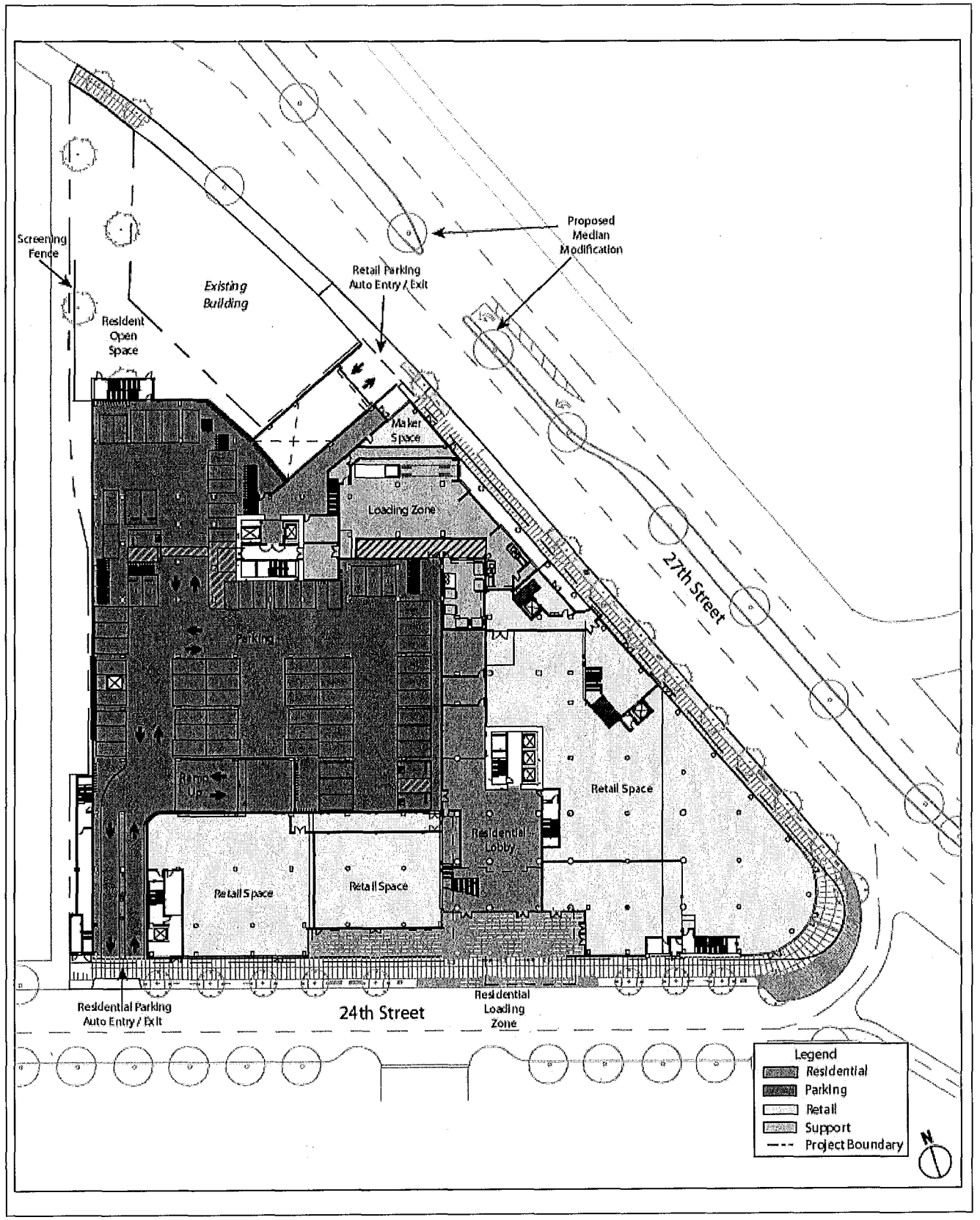
Exhibit 1
Regional Location Map



Source: 24th and Harrison Streets CEQA Analysis, July 2016

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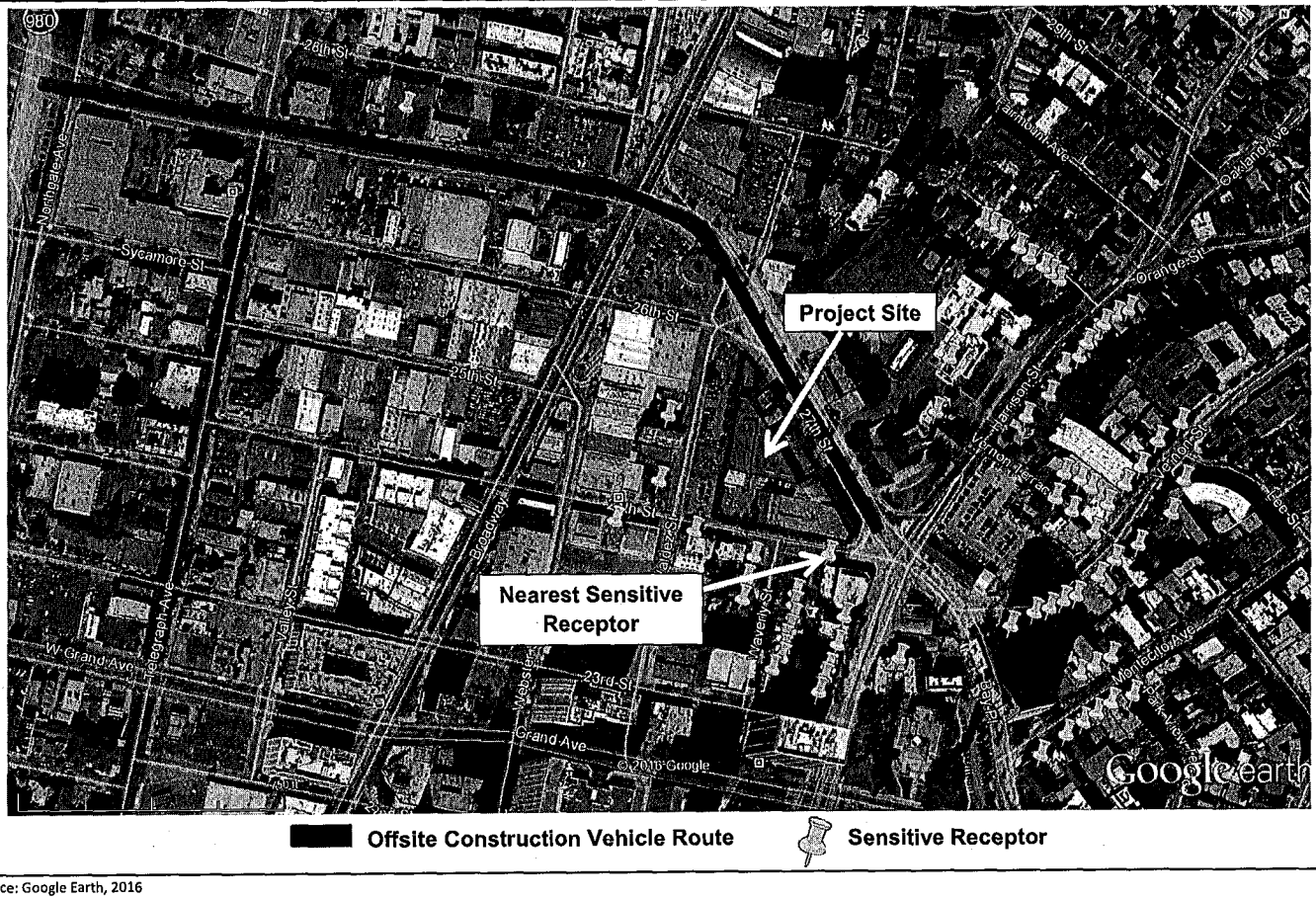
Exhibit 2
Site Plan



Source: Google Earth, 2016

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Exhibit 3
Location of Sensitive Receptors

48700001 • 07/2016 | 3_receptors.cdr

PELOSI LAW GROUP • 24TH AND HARRISON STREETS PROJECT
CONSTRUCTION HEALTH RISK ASSESSMENT

Toxics Air Contaminants of Concern

TACs are air pollutants present in miniscule amounts in the air that, if a person is exposed to them, could increase the chances of experiencing health problems. Exposures to TAC emissions can have both chronic long-term (over a year or longer) and acute short-term (over a period of hours) health impacts. The TACs of greatest concern are those that cause serious health problems or affect many people. Health problems can include cancer, respiratory irritation, nervous system problems, and birth defects. Some health problems occur very soon after a person inhales a TAC. These immediate effects may be minor, such as watery eyes; or they may be serious, such as life-threatening lung damage. Other health problems may not appear until many months or years after a person's first exposure to the TAC. Cancer is one example of a delayed health problem.

This assessment focuses on particulate pollution, which is a mixture of microscopic solids and liquid droplets suspended in air. This pollution, also known as particulate matter, is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, soil or dust particles, and allergens (such as fragments of pollen or mold spores).

Fine particle pollution or $PM_{2.5}$ describes particulate matter that is 2.5 micrometers in diameter and smaller—one-thirtieth the diameter of a human hair. Fine particle pollution can be emitted directly or formed secondarily in the atmosphere. $PM_{2.5}$ health impacts are important because their size can be deposited deeply in the lungs causing respiratory effects.

For purposes of this study, exhaust emissions of $PM_{2.5}$ are represented as diesel particulate matter (DPM), a major component of $PM_{2.5}$. Studies indicate that DPM poses the greatest health risk among airborne TACs. A 10-year research program (ARB 1998)[2] demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic long-term health risk. DPM differs from other TACs in that it is not a single substance but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. The California Air Resources Board (ARB) has made preliminary concentration estimates based on a DPM exposure method. This method uses the ARB emissions inventory's PM_{10} database, ambient $PM_{2.5}$ monitoring data, and the results from several studies to estimate concentrations of DPM.

In addition to the DPM (as exhaust $PM_{2.5}$ emissions), the construction of the project would also result in emissions of fugitive dust primarily from earth-moving activities. During grading, in particular, the project would require involve the demolition of existing structures from the project site and the removal of materials from the project site that would generate fugitive dust. Fugitive dust emissions were also included in this assessment.

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[2] ARB. 1998. The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines. Website: www.arb.ca.gov/toxics/dieseltac/factsht1.pdf.

Standard Conditions of Approval and Mitigation Measure Applicable to the Project

The CEQA Analysis and accompanying Checklist provides a summary of the potential environmental impacts that may result from adoption and implementation of the BVDSP, as evaluated in the BVDSP EIR. Potential environmental impacts of development under the BVDSP were analyzed and covered by the BVDSP EIR, and the EIR identified mitigation measures and Standard Conditions of Approval (SCAs) to address these potential environmental impacts. The CEQA Checklist incorporates by reference the BVDSP EIR discussion and analysis of all potential environmental impact topics; only those environmental topics that could have a potential project-level environmental impact are included. The proposed project is required to comply with applicable mitigation measures identified in the BVDSP EIR, and with City of Oakland SCAs. The project sponsor has agreed to incorporate and/or implement the required mitigation measures and SCAs as part of the proposed project. This CEQA Checklist includes references to the applicable mitigation measures and SCAs and are shown in Table 1 and Table 2.

Table 1: Project Construction Standard Conditions of Approval/Mitigation Measures

SCA-AIR-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions)
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 (nontoxic) 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.

Table 1 (cont.): Project Construction Standard Conditions of Approval/Mitigation Measures

SCA-AIR-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions)
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 off-site. 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 NO_x 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.

Table 2: Project Construction Standard Conditions of Approval/Mitigation Measures

SCA-AIR-2: Exposure to Air Pollution (Toxic Air Contaminants)
a) Health Risk Reduction Measures The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to TACs.
Source: 24th and Harrison Streets Project CEQA Analysis, City of Oakland, Appendix A, July 2016. Website: http://www2.oaklandnet.com/oakca1/groups/ceda/documents/report/oak059792.pdf

With specific regards to subsections SCA AIR-1 (w) and (x) above that require construction equipment and diesel trucks to be equipped with Best Available Control Technology and meet the ARB's most recent certification standard, the project must deploy construction equipment meeting Tier 4 emission standards.[3] Therefore, this construction health risk assessment assumed the deployment of construction equipment that meets Tier 4 emission standards for project mitigation during construction.

Health Risk Significance Thresholds

The BAAQMD Guidelines provides quantitative thresholds for both project-only impacts and cumulative impacts. However, the 2012 update to the BAAQMD Guidelines removed the quantitative thresholds as a result of a court challenge in the *California Building Industry Association v. Bay Area Air Quality Management District*. In order to develop this assessment, the quantitative thresholds provided in the 2011 BAAMD Guidelines have been utilized for this assessment, based on substantial evidence regarding the scientific validity of the thresholds. The health risk significance thresholds adopted for this assessment are provided in Table 3 for an individual, project-level, TAC emission source impact as well as the cumulative impacts of all TAC sources located within a 1,000-foot radius of the project.

Table 3: BAAQMD Health Risk Significance Thresholds

Metric	Individual Source Impact	Cumulative Source Impact
Cancer Risk	10 in one million (sources within a 1,000-foot zone of influence)	100 in one million(sources within a 1,000-foot zone of influence)
Non-Cancer Hazard Index	1.0 (sources within a 1,000-foot zone of influence)	10.0 (sources within a 1,000-foot zone of influence)
Annual $PM_{2.5}$	0.3 $\mu g/m^3$(sources within a 1,000-foot zone of influence)	0.8 $\mu g/m^3$(sources within a 1,000-foot zone of influence)
Note: $\mu g/m^3$ = microgram per cubic meter Source: BAAQMD 2011. CEQA Air Quality Guidelines. Website: http://www.baaqmd.gov/~/media/Files /Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011.ashx?la=en.		

[3] City of Oakland. 2016. 24th and Harrison Streets CEQA Analysis. July. Page 36.

Health Risk Assessment and Methodology

A Health Risk Assessment (HRA) is a guide that helps to determine whether current or future exposures to a chemical or substance in the environment could affect the health of a population. In general, risk depends on the following factors:

- Identifying the TACs that may be present in the air;
- Estimating the amount of TACs released from all sources, or the source of particular concern, using air samples or emission models;
- Estimating concentrations of TACs in air in the geographic area of concern by using air dispersion models with information about emissions, source locations, weather, and other factors; and
- Estimating the concentrations of the TAC at different geographic locations and their potential health impacts.

Thus, an HRA identifies the TACs that could affect public health, identifies the sources of the TAC emissions and quantifies the emissions, estimates where the emissions are transported by prevailing meteorological conditions, and determines the potential exposures to individuals affected by the TACs.

Estimation of Project-Level Construction Emissions

The $PM_{2.5}$ construction emissions were estimated using the CalEEMod Land Use Emission Model (Version 2.13.2.2). The CalEEMod model provides a consistent platform for estimating construction and operational emissions from a wide variety of land use projects and is the methodology recommended by the BAAQMD for estimating project emissions. The project's construction emissions were derived from the emission estimates contained in Attachment H (Greenhouse Gases and Climate Change Screening Analysis for the 24th and Harrison Streets Project) of the CEQA Analysis. Table 4 summarizes the unmitigated and mitigated annual construction emissions of $PM_{2.5}$. Note that because of the short time of construction assumed in the construction schedule in 2018 (only 8 days), for purposes of the air dispersion modeling of the construction emissions, all construction emissions were assumed to be emitted in 2017.

Table 4: Project Annual $PM_{2.5}$ Construction Emissions

Annual Construction Emissions (No Mitigation)					
Year	On-site DPM (as $PM_{2.5}$ Exhaust) (tons/year)	On-site $PM_{2.5}$ Fugitive Dust (tons/year)	Off-site DPM (as $PM_{2.5}$ Exhaust) (tons/year)	Off-site $PM_{2.5}$ Fugitive Dust (tons/year)	Total $PM_{2.5}$ (tons/year)
2017	0.1783	0.0164	0.0250	0.0164	0.3635
2018	0.0005	0.0000	0.0000	0.0000	0.0011
Total	0.1788	0.0164	0.0250	0.0164	0.3646

Table 4 (cont.): Project Annual $PM_{2.5}$ Construction Emissions

Annual Construction Emissions (With Mitigation)[1]					
Year	On-site DPM (as $PM_{2.5}$ Exhaust) (tons/year)	On-site $PM_{2.5}$ Fugitive Dust (tons/year)	Off-site DPM (as $PM_{2.5}$ Exhaust) (tons/year)	Off-site $PM_{2.5}$ Fugitive Dust (tons/year)	Total $PM_{2.5}$ (tons/year)
2017	0.0458	0.0064	0.0250	0.1442	0.2214
2018	0.0000	0.0000	0.0000	0.0006	0.0006
Total	0.0458	0.0064	0.0250	0.1448	0.2220

Note:
[1] Mitigated emissions reflect the Standard Conditions and Approvals/Mitigation Measures shown in Table 1 and deployment of off-road construction equipment meeting Tier 4 emission standards for all equipment greater than 50 horsepower.
Source: Unmitigated Emissions: 24th and Harrison Streets CEQA Analysis, City of Oakland July 2016
Source: Mitigated Emissions: see Attachment A to this report

Air Dispersion Modeling

An air dispersion model is a mathematical formulation that is used to estimate the air quality impacts at specific locations (receptors) surrounding a source of emissions given the rate of emissions and prevailing meteorological conditions. The air dispersion model applied in this assessment was the United States Environmental Protection Agency (EPA) AERMOD air dispersion model that is approved by the BAAQMD for air dispersion assessments. Specifically, the AERMOD model was used to estimate levels of TACs at sensitive receptor locations from the project's construction $PM_{2.5}$ exhaust and $PM_{2.5}$ fugitive dust emissions. The use of the AERMOD model provides a refined methodology for estimating construction impacts by utilizing long-term measured, representative meteorological data for the project site and a representative construction schedule. Screening air dispersion models such as the EPA AERSCREEN model provide overly conservative impact estimates by not taking into account actual meteorological data and representative construction schedules that both are important in estimating emission impacts.

Four emission sources were used to represent the project's $PM_{2.5}$ construction emissions. One source represented the generation of on-site construction DPM emissions (as$PM_{2.5}$ exhaust) from the off-road construction equipment while a second source was used to represent the project's construction $PM_{2.5}$ fugitive dust emissions. Both sources were assumed to each cover the entire construction area of approximately 2.3 acres. The emission from the exhaust source was assumed to be emitted at a height of 6 meters above ground to account for the top of the equipment exhaust stack where the emission is released to the atmosphere and the increase in the height of the emissions due to its heated exhaust. The emissions from the fugitive source was assumed to be released from a height of 1 meter above ground. Two additional emission sources were included to account for the off-site DPM (as $PM_{2.5}$) emissions and paved road dust from worker, haul truck, and vendor truck vehicles. The off-site vehicle emissions were represented in the AERMOD model as line volume sources with a release height of 3.7 meters for the DPM vehicles and 1 meter for the paved road dust. Construction was assumed to take place on an 8 hour/5 day per week basis for the year 2017.

Estimation of Cancer Risks

The BAAQMD has developed a set of guidelines[4] for estimating cancer risks that provide adjustment factors that emphasize the increased sensitivities and susceptibility of young children to exposures to TACs. These adjustment factors include age-sensitivity weighting factors, age-specific daily breathing rates, and age-specific time-at-home factors. The recommend method for the estimation of cancer risk is shown in the following equations with the various cancer risk adjustment factors provided in Table 5 for sensitive/ residential receptors.

$$\text{Cancer Risk} = C_{DPM} \times \text{Inhalation Exposure Factor)}$$

Where:

Cancer Risk = Total individual excess cancer risk defined as the cancer risk a hypothetical individual faces if exposed to carcinogenic emissions from a particular source for specified exposure durations; this risk is defined as an excess risk because it is above and beyond the background cancer risk to the population; cancer risk is expressed in terms of risk per million exposed individuals.

C_{DPM} = Period average DPM air concentration calculated from the air dispersion model in $\mu g/m^3$

Inhalation is the most important exposure pathway to impact human health from DPM and the inhalation exposure factor is defined as follows:

$$\text{Inhalation Exposure Factor} = \text{CPF} \times \text{EF} \times \text{ED AAF/AT}$$

Where:

CPF = Inhalation cancer potency factor for the TAC: 1.1 $(\text{mg/kg-day})^{-1}$ for DPM
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
AAF = set of age-specific adjustment factors that include age sensitivity factors (ASF), daily breathing rates (DBR), and time at home factors (TAH)—see Table 5.
AT = Averaging time period over which exposure is averaged (days)

[4] BAAQMD 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. Website: http://www.baaqmd.gov/~/media/files /planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en.

Table 5: Exposure Assumptions for Cancer Risk

Receptor Type	Exposure Frequency		Exposure Duration (years)	Age Sensitivity Factors (ASF)	Time at Home Factor (TAH) (%)	Daily Breathing Rate (DBR) [1] (L/kg-day)
	Hours/day	Days/year				
Sensitive/Residential—Infant						
3rd Trimester	24	350	0.25	10	85	361
0-1 year	24	350	1	10	85	1,090
Sensitive Receptor—Child						
3 to 16 years	24	350	1	3	73	572
Sensitive Receptor—Adult						
> 16 years	24	350	1	1	72	261

Notes:
[1] The daily breathing rates recommended by the BAAQMD for sensitive/residential receptors assume the 95th percentile breathing rates for all individuals less than 2 years of age and 80th breathing rates for all older individuals
(L/kg-day) = liters per kilogram body weight per day
Source: BAAQMD 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. Website: http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en

Note that the cancer risks estimated from the BAAQMD assessment tools (roadways and permitted stationary sources) are based on an older set of exposure parameters that do not reflect the current BAAQMD cancer risk parameters dealing with daily breathing rates, time at home factors, and exposure duration. The cancer risks estimated from the BAAQMD's assessment tools for these TAC emission sources, therefore, were increased by a value of 1.12 to incorporate the BAAQMD's newest cancer risk guidance. The scaling factor of 1.12 represents the ratio of the cancer risk estimated with the current BAAQMD cancer risk guidance to the previous BAAQMD cancer risk guidance (see Attachment B).

Estimation of Non-Cancer Hazards

An evaluation of the potential non-cancer effects of chronic chemical exposures was also conducted. Adverse health effects are evaluated by comparing the annual receptor concentration of each chemical compound with the appropriate reference exposure limit (REL). Available RELs promulgated by the California Office of Environmental health Hazards Assessment (OEHHA) were considered in the assessment.

To quantify non-carcinogenic impacts, the hazard index approach was used.

$$HI = C_{ann}/REL$$

Where:

HI = chronic hazard index
C_{nn} = annual average concentration of TAC as derived from the air dispersion model ($\mu g/m^3$)
REL = reference exposure level above which a significant impact is assumed to occur ($\mu g/m^3$)

The hazard index assumes that chronic sub-threshold exposures adversely affect a specific organ or organ system (toxicological endpoint). For each discrete chemical exposure, target organs presented in regulatory guidance were used. To calculate the hazard index, each chemical concentration or dose is divided by the appropriate toxicity reference exposure level. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds 1, a health hazard is presumed to exist. For purposes of this assessment, the TAC of concern is DPM for which the OEHHA has defined a REL for DPM of 5 $\mu g/m^3$. The principal toxicological endpoint assumed in this assessment was through inhalation.

Estimation of $PM_{2.5}$ Hazards

The BAAQMD has included significance thresholds for $PM_{2.5}$ due to recent studies that show health impacts from exposure to this pollutant. The construction emissions of $PM_{2.5}$ incorporated into this assessment included both DPM (as $PM_{2.5}$ exhaust) and $PM_{2.5}$ fugitive dust.

Estimates of Health Risks and Hazards from Project Construction

The estimated health and hazard impacts at the maximum impacted sensitive receptor from the project's construction emissions are provided in Table 6. The maximum impacted sensitive receptor (MIR) was found at an existing residence located approximately 60 feet south of the project across 24th Street. As noted from Table 6, prior to the application of mitigation, the project's construction DPM emissions would exceed the BAAQMD's cancer risk significance thresholds at the maximum impacted sensitive infant receptor and thus would result in a significant impact to nearby sensitive receptors.

Table 6: Estimated Health Risks and Hazards: Project Construction—No Mitigation

Source	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index[2]	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Infant[1]	23.0	0.03	0.17
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Child[1]	2.9	0.03	0.17

Table 6 (cont.): Estimated Health Risks and Hazards: Project Construction—No Mitigation

Source	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index[2]	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Adult[1]	0.4	0.03	0.17
BAAQMD Significance Threshold	10	1	0.30
Exceeds Individual Source Threshold?	Yes (for the Infant Sensitive Receptor)	No	No

Notes:
[1] Maximum impacted sensitive receptor is a residence located approximately 60 feet south of the project across 24th Street.
[2] Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as $PM_{2.5}$ exhaust) by the REL of 5 $\mu g/m^3$.
Source: Attachment C.

Table 7 summarizes the project's construction impacts after the application of the standard conditions of approval and mitigation identified above in Table 1 and the use of Tier 4 off-road construction equipment. As noted in Table 7, the project's construction emissions would not exceed any of the BAAQMD's significance thresholds after application of mitigation at the MIR and would therefore represent a less than significant impact on a project level.

Table 7: Estimated Health Risks and Hazards: Project Construction—With Mitigation

Source	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index[2]	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Infant[1]	6.0	0.01	0.05
BAAQMD Significance Threshold	10	1	0.3
Exceeds Individual Source Threshold?	No	No	No

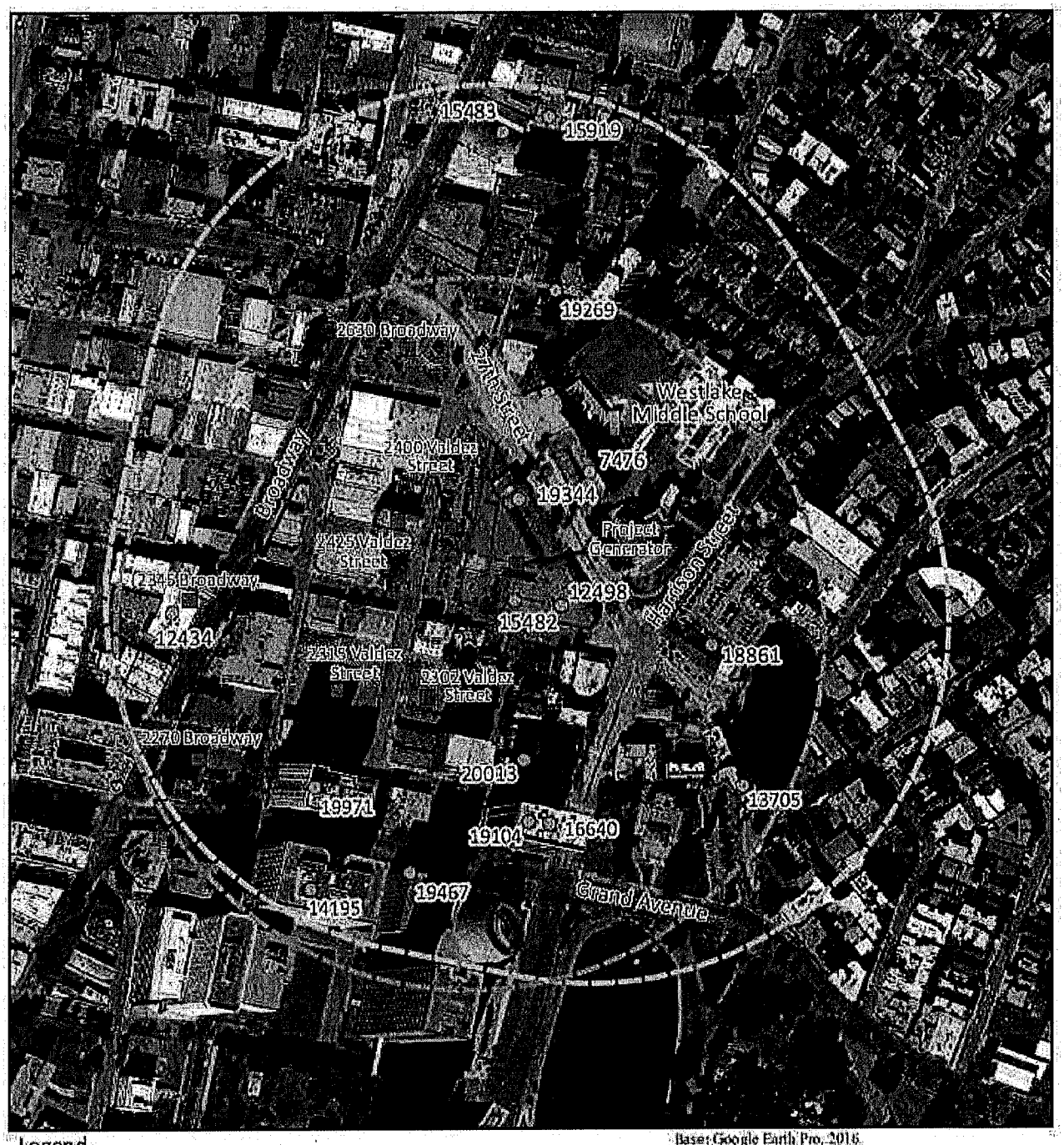
Notes:
[1] Maximum impacted sensitive receptor is a residence located approximately 60 feet south of the project across 24th Street.
[2] Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as $PM_{2.5}$ exhaust) by the REL for DPM of 5 $\mu g/m^3$.
Source: Attachment C.

Estimates of Cumulative Health Risks and Hazards

As noted above, the community risk from the project's construction emissions would not exceed the health risk significance thresholds after application of mitigation and standard conditions of approval, and fugitive dust would be adequately controlled through the application of best management practices recommended by the BAAQMD.

The BAAQMD also recommends assessing the potential cumulative impacts from sources of TACs within 1,000 feet of a project. To assess the impacts of nearby sources of TACs in combination with the project's construction impacts on nearby sensitive receptors, a screening-level analysis was conducted as part of the CEQA Analysis for the project. This screening analysis is contained in Appendix G of the CEQA Analysis. The screening analysis applied a series of screening tools developed by the BAAQMD to provide conservative estimates of how much existing TAC sources would contribute to cancer risk, chronic hazard index (HI), and/or fine particulate matter ($PM_{2.5}$) concentrations in a community. The individual health risks associated with each source are summed to find the cumulative impact at the location of the MIR. Based on proximity to the project site, the MIR was assumed to be a resident located at 319 24th Street approximately 60 feet south of the project site (see Exhibit 3)

The cumulative health risk assessment contained in the CEQA Analysis, Appendix G identified 14 existing stationary sources of TAC emissions within 1,000 feet of the MIR (Table 8 and Exhibit 4). Preliminary health risk screening values at the MIR from the stationary sources were determined using the BAAQMD's Stationary Source Screening Analysis Tool. The BAAQMD's Diesel Internal Combustion Engine Distance Multiplier Tool was used to refine the screening values associated with eight of the 14 stationary sources that operate diesel engines to represent the attenuated health risks that can be expected with increasing distance from the source of emissions. The screening values for one other facility that operates diesel engines (BAAQMD Plant 19269) was not refined because the values were based on a site-specific health risk assessment.



Source: 24th and Harrison Streets CEQA Analysis, July 2016

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Exhibit 4
Location of Cumulative Sources

In addition to existing TAC sources, there are seven proposed developments within 1,000 feet of the MIR that either are under construction or could be constructed in the near future, and future operations could potentially include maintenance and testing of a backup diesel generator. The BAAQMD does not issue permits for stationary sources that result in an excess cancer risk greater than 10 in one million or a chronic HI greater than 1.0. Conservatively assuming each proposed generator would result in a maximum excess cancer risk of 10 in one million due to emissions of diesel particulate matter, the BAAQMD's Risk and Hazards Emissions Screening Calculator (Beta Version) was used to estimate the equivalent screening-level health risks values for chronic HI and annual average $PM_{2.5}$ concentrations. The health risk screening values were then refined based on the distance from each source to the MIR using the BAAQMD's Diesel Internal Combustion Engine Distance Multiplier Tool.

The BAAQMD also recommends reviewing average annual daily traffic (AADT) counts estimated by the California Environmental Health Tracking Program (CEHTP) to identify major roads with an AADT volume greater than 10,000 vehicles per day. Based on the review of CEHTP traffic data, four major roadways with an AADT volume greater than 10,000 vehicles per day were identified within 1,000 feet of the MIR (Table 8 and Exhibit 4). The health risk screening values at the MIR from nearby major roadways were estimated using the BAAQMD's Roadway Screening Analysis Calculator.

Note that as discussed earlier, the cancer risks estimated from the BAAQMD assessment tools (roadways and permitted stationary sources) and shown in Attachment B are based on an older set of exposure parameters that do not reflect the current BAAQMD cancer risk parameters dealing with daily breathing rates, time at home factors, and exposure duration. The cancer risks estimated from the BAAQMD's assessment tools for these TAC emission sources, therefore, were increased by a value of 1.12 to incorporate the BAAQMD's newest cancer risk. As noted from Table 8 the cumulative risks from the project construction and from other sources of TAC emissions within 1,000 feet of the project would not expose nearby sensitive receptors to cancer risks or hazard levels that exceed the BAAQMD cumulative health risk significance thresholds. Therefore, the construction of the project would not result in project-level or cumulative significant health risk impacts.

Table 8: Summary of Cumulative Health Risks at the MIR

Source	Source Type	Distance from MIR (feet)	Cancer Risk (per million)	Chronic HI	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Project					
Construction[1]	Diesel Construction Equipment	60	6.0	0.01	0.05
Future Backup Generators[2]					
2400 Valdez Street	Diesel Engine	300	2.8	0.001	0.005
2302 Valdez Street	Diesel Engine	200	4.6	0.001	0.007
2345 Broadway	Diesel Engine	780	0.7	0.000	0.001
2425 Valdez Street	Diesel Engine	365	2.0	0.001	0.003

Table 8 (cont.): Summary of Cumulative Health Risks at the MIR

Source	Source Type	Distance from MIR (feet)	Cancer Risk (per million)	Chronic HI	$PM_{2.5}$ Concentration ($\mu g/m^3$)
2270 Broadway	Diesel Engine	835	0.6	0.000	0.001
2315 Valdez Street	Diesel Engine	375	2.0	0.001	0.003
2630 Broadway	Diesel Engine	795	0.6	0.000	0.001
Existing Stationary Sources (BAAQMD Plant Number)[2]					
Caltrans (14195)	Diesel Engine	830	3.7	0.001	0.006
Essex Portfolio (19971)	Diesel Engine	590	1.8	0.001	0.000
CalSTREARS (16640)	Diesel Engine	560	3.0	0.001	0.005
Brandywine Realty Trust (19467)	Diesel Engine	690	1.7	0.001	0.000
Insite Connect, LLC (19104)	Diesel Engine	560	2.2	0.001	0.004
Mpower Communications (20013)	Diesel Engine	380	0.0	0.000	0.000
Saint Pauls Tower (13705)	Diesel Engine	880	1.1	0.000	0.000
Whole Foods Market (18861)	Diesel Engine	675	0.0	0.000	0.000
West Lake Christian Terrace (19269)	Diesel Engine	995	14.5	0.005	0.013
Oakland Acura (12498)	Not Reported	250	0.0	0.000	0.000
Autotrends (15482)	Not Reported	180	0.0	0.000	0.000
Q & S Automotive (12434)	Not Reported	850	0.0	0.000	0.000
Label Art (7476)	Not Reported	575	0.0	0.000	0.000
VIP Auto Collision Repair (19344)	Not Reported	395	0.0	0.000	0.000
Major Roadways (More than 10,000 AADT)[2]					
Broadway (30,200 AADT)	Roadway	675	3.9	NA	0.099
Grand Avenue (24,800 AADT)	Roadway	615	3.5	NA	0.051
Harrison Street (22,800 AADT)	Roadway	420	2.6	NA	0.112
27th Street (17,700 AQAQDT)	Roadway	350	2.3	NA	0.208
Cumulative Health Risks					
Cumulative Total			59.6	0.011	0.77
City of Oakland's Cumulative Thresholds			100	10	0.8
Threshold Exceedance?			No	No	No

Notes:
[1] *Project construction impacts after application of mitigation and standard conditions of approval*
[2] Health impacts for the Future Backup Generators, Existing Stationary Sources, and Major Roadways taken from the 24th and Harrison Streets CEQA Analysis, Appendix G, Table 1 as modified to reflect the current BAAQMD cancer risk guidance
NA = not available
AADT = annual average daily traffic

Attachment A:
Estimates of Construction Diesel and Fugitive Dust $PM_{2.5}$ Emissions

24th and Harrison Project - Construction

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	167.41	1000sqft	0.00	186,726.00	0
Apartments High Rise	450.00	Dwelling Unit	2.28	454,530.00	972
Regional Shopping Center	65.00	1000sqft	0.00	65,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2020
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 - Project EIR
Construction Phase - Dates from Project EIR
Trips and VMT - Project EIR
Demolition -
Grading -
Architectural Coating - Project EIR
Vehicle Trips - Construction Onlu
Vechicle Emission Factors - Construction Only
Vechicle Emission Factors - Construction Only
Vechicle Emission Factors - Construction Only
Road Dust - Construction Only
Woodstoves - Constructi0n Only
Consumer Products - Construction Only
Area Coating - Construction Only
Landscape Equipment - Construction Only
Construction Off-road Equipment Mitigation - Tier IV Engine Tier for all equipment>50hp

Table Name	Column Name	Default Value	New Value
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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
tblAreaCoating	Area_Nonresidential_Interior	377589	348621
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblFireplaces	NumberNoFireplace	139.50	0.00
tblFireplaces	NumberWood	63.00	0.00
tblGrading	MaterialExported	0.00	49,000.00
tblLandUse	LandUseSquareFeet	167,410.00	186,726.00
tblLandUse	LandUseSquareFeet	450,000.00	454,530.00
tblLandUse	LotAcreage	3.84	0.00
tblLandUse	LotAcreage	7.26	2.28
tblLandUse	LotAcreage	1.49	0.00
tblLandUse	Population	1,287.00	972.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblRoadDust	MobileAverageVehicleWeight	2.4	0

tblTripsAndVMT	VendorTripNumber	89.00	86.00
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tblTripsAndVMT	WorkerTripNumber	85.00	83.00
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tblVehicleEF	HHD	0.05	0.00
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tblVehicleEF	MCY	5.6840e-003	0.00
tblVehicleEF	MCY	5.6840e-003	0.00
tblVehicleEF	MDV	0.11	0.00
tblVehicleEF	MDV	0.11	0.00
tblVehicleEF	MDV	0.11	0.00
tblVehicleEF	MH	1.4180e-003	0.00
tblVehicleEF	MH	1.4180e-003	0.00
tblVehicleEF	MH	1.4180e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00

tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.7890e-003	0.00
tblVehicleEF	OBUS	1.7890e-003	0.00
tblVehicleEF	OBUS	1.7890e-003	0.00
tblVehicleEF	SBUS	1.9900e-004	0.00
tblVehicleEF	SBUS	1.9900e-004	0.00
tblVehicleEF	SBUS	1.9900e-004	0.00
tblVehicleEF	UBUS	3.6610e-003	0.00
tblVehicleEF	UBUS	3.6610e-003	0.00
tblVehicleEF	UBUS	3.6610e-003	0.00
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	6.07	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	6.59	0.00
tblVehicleTrips	WD_TR	42.94	0.00
tblWoodstoves	NumberCatalytic	2.25	0.00
tblWoodstoves	NumberNoncatalytic	2.25	0.00
tblWoodstoves	WoodstoveDayYear	10.82	0.00
tblWoodstoves	WoodstoveWoodMass	954.80	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017								0.1602	0.2033	0.3635						
2018								*6.0000e-004*	*4.7000e-004*	*1.0700e-003*						
Total								**0.1608**	**0.2037**	**0.3645**						

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								0.1502	0.0707	0.2209						
2018								6.0000e-004	3.0000e-005	6.3000e-004						
Total								**0.1508**	**0.0707**	**0.2215**						

	ROG	NOx	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	6.23	65.30	39.24	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Grading	Grading	1/28/2017	2/6/2017	5	6	
3	Building Construction	Building Construction	2/7/2017	12/11/2017	5	220	
4	Paving	Paving	12/12/2017	12/25/2017	5	10	
5	Architectural Coating	Architectural Coating	12/26/2017	1/8/2018	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 920,423; Residential Outdoor: 306,808; Non-Residential Indoor: 348,621; Non-Residential Outdoor: 116,207

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	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36

Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	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	5	13.00	0.00	359.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	6,125.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	415.00	86.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	83.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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					
Fugitive Dust								5.8800e-003	0.0000	5.8800e-003						
Off-Road									0.0150	0.0150						
Total								**5.8800e-003**	**0.0150**	**0.0209**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling								8.3000e-004	5.7000e-004	1.4000e-003						
Vendor								0.0000	0.0000	0.0000						
Worker								3.1000e-004	1.0000e-005	3.2000e-004						
Total								**1.1400e-003**	**5.8000e-004**	**1.7200e-003**						

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								2.2900e-003	0.0000	2.2900e-003						
Off-Road									3.8000e-004	3.8000e-004						
Total								**2.2900e-003**	**3.8000e-004**	**2.6700e-003**						

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								8.3000e-004	5.7000e-004	1.4000e-003						
Vendor								0.0000	0.0000	0.0000						
Worker								3.1000e-004	1.0000e-005	3.2000e-004						
Total								**1.1400e-003**	**5.8000e-004**	**1.7200e-003**						

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust								0.0105	0.0000	0.0105						
Off-Road									4.2900e-003	4.2900e-003						
Total								**0.0105**	**4.2900e-003**	**0.0148**						

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								0.0142	9.7600e-003	0.0240						
Vendor								0.0000	0.0000	0.0000						
Worker								7.0000e-005	0.0000	7.0000e-005						
Total								**0.0143**	**9.7600e-003**	**0.0240**						

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								4.1000e-003	0.0000	4.1000e-003						
Off-Road									1.0000e-004	1.0000e-004						
Total								**4.1000e-003**	**1.0000e-004**	**4.2000e-003**						

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								0.0142	9.7600e-003	0.0240						
Vendor								0.0000	0.0000	0.0000						
Worker								7.0000e-005	0.0000	7.0000e-005						
Total								0.0143	9.7600e-003	0.0240						

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road									0.1540	0.1540						
Total									0.1540	0.1540						

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						
Vendor								0.0176	0.0115	0.0290						
Worker								0.1102	3.1000e-003	0.1133						
Total								**0.1278**	**0.0146**	**0.1424**						

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									0.0451	0.0451						
Total									**0.0451**	**0.0451**						

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						
Vendor								0.0176	0.0115	0.0290						
Worker								0.1102	3.1000e-003	0.1133						
Total								0.1278	0.0146	0.1424						

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road									4.7100e-003	4.7100e-003						
Paving									0.0000	0.0000						
Total									4.7100e-003	4.7100e-003						

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						
Vendor								0.0000	0.0000	0.0000						
Worker								1.8000e-004	1.0000e-005	1.9000e-004						
Total								**1.8000e-004**	**1.0000e-005**	**1.9000e-004**						

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									2.1000e-004	2.1000e-004						
Paving									0.0000	0.0000						
Total									**2.1000e-004**	**2.1000e-004**						

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						
Vendor								0.0000	0.0000	0.0000						
Worker								1.8000e-004	1.0000e-005	1.9000e-004						
Total								1.8000e-004	1.0000e-005	1.9000e-004						

3.6 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									0.0000	0.0000						
Off-Road									3.5000e-004	3.5000e-004						
Total									3.5000e-004	3.5000e-004						

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						
Vendor								0.0000	0.0000	0.0000						
Worker								4.0000e-004	1.0000e-005	4.1000e-004						
Total								**4.0000e-004**	**1.0000e-005**	**4.1000e-004**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating									0.0000	0.0000						
Off-Road									1.0000e-005	1.0000e-005						
Total									**1.0000e-005**	**1.0000e-005**						

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						
Vendor								0.0000	0.0000	0.0000						
Worker								4.0000e-004	1.0000e-005	4.1000e-004						
Total								**4.0000e-004**	**1.0000e-005**	**4.1000e-004**						

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating									0.0000	0.0000						
Off-Road									4.5000e-004	4.5000e-004						
Total									**4.5000e-004**	**4.5000e-004**						

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						
Vendor								0.0000	0.0000	0.0000						
Worker								6.0000e-004	2.0000e-005	6.2000e-004						
Total								**6.0000e-004**	**2.0000e-005**	**6.2000e-004**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating									0.0000	0.0000						
Off-Road									1.0000e-005	1.0000e-005						
Total									**1.0000e-005**	**1.0000e-005**						

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						
Vendor								0.0000	0.0000	0.0000						
Worker								6.0000e-004	2.0000e-005	6.2000e-004						
Total								**6.0000e-004**	**2.0000e-005**	**6.2000e-004**						

Attachment B:
Comparison of Cancer Risk Estimates: BAAQMD

Cancer Risk Calculation for 1 ug/m3 DPM concentration (assuming constant DPM concentration)

70-year Exposure Duration
Original BAAQMD Guidance http://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx

Year	Year	DPM (ug/m3)	CPF (mg/kg-day)^-1	DBR (l/kg-day)	ED (years)	EF (days)	AT (years)	TAH (%)	ASF	Risk (risk/million)
1	Year 1	1.000	1.1	302	1	350	25550	1	10	45.51
2	Year 2	1.000	1.1	302	1	350	25550	1	10	45.51
3	Year 3	1.000	1.1	302	1	350	25550	1	3	13.65
4	Year 4	1.000	1.1	302	1	350	25550	1	3	13.65
5	Year 5	1.000	1.1	302	1	350	25550	1	3	13.65
6	Year 6	1.000	1.1	302	1	350	25550	1	3	13.65
7	Year 7	1.000	1.1	302	1	350	25550	1	3	13.65
8	Year 8	1.000	1.1	302	1	350	25550	1	3	13.65
9	Year 9	1.000	1.1	302	1	350	25550	1	3	13.65
10	Year 10	1.000	1.1	302	1	350	25550	1	3	13.65
11	Year 11	1.000	1.1	302	1	350	25550	1	3	13.65
12	Year 12	1.000	1.1	302	1	350	25550	1	3	13.65
13	Year 13	1.000	1.1	302	1	350	25550	1	3	13.65
14	Year 14	1.000	1.1	302	1	350	25550	1	3	13.65
15	Year 15	1.000	1.1	302	1	350	25550	1	3	13.65
16	Year 16	1.000	1.1	302	1	350	25550	1	3	13.65
17	Year 17	1.000	1.1	302	1	350	25550	1	1	4.55
18	Year 18	1.000	1.1	302	1	350	25550	1	1	4.55
19	Year 19	1.000	1.1	302	1	350	25550	1	1	4.55
20	Year 20	1.000	1.1	302	1	350	25550	1	1	4.55
21	Year 21	1.000	1.1	302	1	350	25550	1	1	4.55
22	Year 22	1.000	1.1	302	1	350	25550	1	1	4.55
23	Year 23	1.000	1.1	302	1	350	25550	1	1	4.55
24	Year 24	1.000	1.1	302	1	350	25550	1	1	4.55
25	Year 25	1.000	1.1	302	1	350	25550	1	1	4.55
26	Year 26	1.000	1.1	302	1	350	25550	1	1	4.55
27	Year 27	1.000	1.1	302	1	350	25550	1	1	4.55
28	Year 28	1.000	1.1	302	1	350	25550	1	1	4.55
29	Year 29	1.000	1.1	302	1	350	25550	1	1	4.55
30	Year 30	1.000	1.1	302	1	350	25550	1	1	4.55
30 to 70										182.03
									Total	527.88

Cancer Risk Calculation for 1 ug/m3 DPM concentration (assuming constant DPM concentration)

BAAQMD New Guidance Cancer Risk @30 years	BAAQMD Old Guidance Cancer Risk @70 years	Ratio NEW to Old BAAQMD
589.97	527.88	1.12

30-year Exposure Duration
95th/80th % DBR

30-year New BAAQMD Guidance
95th % DBR 2 years and less, 80th % for all older

Year	Year	DPM (ug/m3)	CPF (mg/kg-day)^-1	DBR (l/kg-day)	ED (years)	EF (days)	AT (years)	TAH (%)	ASF	Risk (risk/million)
3rd Trimester	Year 1	1.000	1.1	361	0.25	350	25550	0.85	10	11.56
1	Year 1	1.000	1.1	1090	1	350	25550	0.85	10	139.61
2	Year 2	1.000	1.1	1090	1	350	25550	0.84	10	137.97
3	Year 3	1.000	1.1	572	1	350	25550	0.72	3	18.62
4	Year 4	1.000	1.1	572	1	350	25550	0.72	3	18.62
5	Year 5	1.000	1.1	572	1	350	25550	0.72	3	18.62
6	Year 6	1.000	1.1	572	1	350	25550	0.72	3	18.62
7	Year 7	1.000	1.1	572	1	350	25550	0.72	3	18.62
8	Year 8	1.000	1.1	572	1	350	25550	0.72	3	18.62
9	Year 9	1.000	1.1	572	1	350	25550	0.72	3	18.62
10	Year 10	1.000	1.1	572	1	350	25550	0.72	3	18.62
11	Year 11	1.000	1.1	572	1	350	25550	0.72	3	18.62
12	Year 12	1.000	1.1	572	1	350	25550	0.72	3	18.62
13	Year 13	1.000	1.1	572	1	350	25550	0.72	3	18.62
14	Year 14	1.000	1.1	572	1	350	25550	0.72	3	18.62
15	Year 15	1.000	1.1	572	1	350	25550	0.72	3	18.62
16	Year 16	1.000	1.1	572	1	350	25550	0.72	3	18.62
17	Year 17	1.000	1.1	261	1	350	25550	0.73	1	2.87
18	Year 18	1.000	1.1	261	1	350	25550	0.73	1	2.87
19	Year 19	1.000	1.1	261	1	350	25550	0.73	1	2.87
20	Year 20	1.000	1.1	261	1	350	25550	0.73	1	2.87
21	Year 21	1.000	1.1	261	1	350	25550	0.73	1	2.87
22	Year 22	1.000	1.1	261	1	350	25550	0.73	1	2.87
23	Year 23	1.000	1.1	261	1	350	25550	0.73	1	2.87
24	Year 24	1.000	1.1	261	1	350	25550	0.73	1	2.87
25	Year 25	1.000	1.1	261	1	350	25550	0.73	1	2.87
26	Year 26	1.000	1.1	261	1	350	25550	0.73	1	2.87
27	Year 27	1.000	1.1	261	1	350	25550	0.73	1	2.87
28	Year 28	1.000	1.1	261	1	350	25550	0.73	1	2.87
29	Year 29	1.000	1.1	261	1	350	25550	0.73	1	2.87
30	Year 30	1.000	1.1	261	1	350	25550	0.73	1	2.87
									Total	589.97

http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en

Attachment C:
Health Risk Impacts from Project Construction

24th and Harrison Street Project: Oakland **No Mitigation**

Construction Annual DPM Emissions (as PM2.5 Exhaust) and PM2.5 Fugitive Dust - CalEEMod Run 6/20/2016 from Project EIR
Construction Duration: 1/1/2017 to 12/31/2017

ASSUMPTION: Assume all construction emissions will be compressed into one year, 2017

Construction Scheduling	**2017**	
	8	hours/day
	5	days/week
	52	weeks/year
	2080	hours/year

Onsite Construction Area Source Size (m2): 9440

Onsite Construction Emissions

2017	Construction Activity	Onsite Annual DPM Exhaust Emissions (tons/year)	Onsite Annual DPM Exhaust Emissions (g/sec)	Onsite DPM Source Exhaust Emissions (g/m2-sec)	Onsite Annual PM2.5 Fugitive Emissions (tons/year)	Onsite Average PM2.5 Fugitive Emissions (g/sec)	PM2.5 Onsite Source Fugitive Emissions (g/m2-sec)
	Demolition	0.01500	0.002	1.927E-07	0.005880	0.001	7.553E-08
	Grading	0.00430	0.001	5.524E-08	0.010500	0.001	1.349E-07
	Building Construction	0.15400	0.019	1.978E-06	0.000000	0.000	0.000E+00
	Paving	0.00470	0.001	6.037E-08	0.000000	0.000	0.000E+00
	Architectural Coating	0.00080	0.000	1.028E-08	0.000000	0.000	0.000E+00
	Total	**0.17880**	**0.022**	**2.2968E-06**	**0.016380**	**0.002**	**2.1041E-07**

Offsite Construction Vehicle Emissions

2017	Construction Activity	Offsite Worker Annual DPM Exhaust Emissions (tons/year)	Offsite Haul Trucks Annual DPM Exhaust Emissions (tons/year)	Offsite Vendor Trucks Annual DPM Exhaust Emissions (tons/year)	Offsite Worker Annual PM2.5 Fugitive Emissions (tons/year)	Offsite Haul Trucks Annual PM2.5 Fugitive Emissions (tons/year)	Offsite Vendor Trucks Annual PM2.5 Fugitive Emissions (tons/year)
	Demolition	0.00001	0.00057	0.00000	0.00031	0.00083	0.00000
	Grading	0.00000	0.00976	0.00000	0.00007	0.01420	0.00000
	Building Construction	0.00310	0.00000	0.01150	0.11020	0.00000	0.01760
	Paving	0.00001	0.00000	0.00000	0.00018	0.00000	0.00000
	Architectural Coating	0.00003	0.00000	0.00000	0.00100	0.00000	0.00000
	Total (tons/year)	**0.00315**	**0.01033**	**0.01150**	**0.11176**	**0.01503**	**0.01760**
	Trip Distance assumed in CalEEMod (mi)	12.4	20	7.3	12.4	20	7.3
	Offsite Project Trip Distance Project>27th St >I980 (mi)	0.56	0.56	0.56	0.56	0.56	0.56
	Offsite Project Emissions Project>27th St >I980 (tons/year)	**0.000142**	**0.00028924**	**0.000882192**	**0.005047**	**0.00042084**	**0.001350137**

Total Offsite Project Exhaust Emissions (tons/year)	**0.001314**
Total Offsite Project Exhaust Emissions (grams/sec)	**0.000159299**
Total Offsite Project Fugitive Emissions (tons/year)	**0.006818**
Total Offsite Project Fugitive Emissions (grams/sec)	**0.00082678**

24th and Harrison Street Project: Oakland

No Mitigation

Sample Output

Estimates of Annual Construction DPM and fugitive Dust Emissions (as PM2.5)

Annual Average Onsite DPM Exhaust Emission Rate: 2.29676E-06 grams/m2/sec
Annual Average Onsite Fugitive Dust Emission Rate: 2.10408E-07 grams/m2/sec
Annual Average Offsite DPM Exhaust Emission Rate: 1.59299E-04 grams/sec
Annual Average Offsite Fugitive Dust Emission Rate: 8.26780E-04 grams/sec

X	Y	Onsite Annual DPM Exhaust w/Unit Emissions	Onsite Annual DPM Exhaust w/Actual Emissions	Onsite Annual Fugitive Dust w/Unit Emissions	Onsite Annual Fugitive Dust w/Actual Emissions	Offsite Annual DPM Exhaust w/Unit Emissions	Offsite Annual DPM Exhaust w/Actual Emissions	Offsite Annual Fugitive Dust w/Unit Emissions	Offsite Annual Fugitive Dust w/Actual Emissions	Total PM2/5	Total DPM
(m)	(m)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)
564243.5	4185077	0.00514	0.00118	0.00052	0.0001	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00134	0.00119
564268.5	4185077	0.00545	0.00125	0.00056	0.0001	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00142	0.00126
564293.5	4185077	0.0058	0.00133	0.0006	0.0001	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00151	0.00134
564318.5	4185077	0.00617	0.00142	0.00064	0.0001	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00160	0.00143
564343.5	4185077	0.00658	0.00151	0.00069	0.0001	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00171	0.00152
564368.5	4185077	0.00702	0.00161	0.00074	0.0002	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00183	0.00162
564393.5	4185077	0.0075	0.00172	0.00079	0.0002	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00195	0.00173
564418.5	4185077	0.00801	0.00184	0.00085	0.0002	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00208	0.00185
564443.5	4185077	0.00855	0.00196	0.00091	0.0002	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00221	0.00197
564468.5	4185077	0.00913	0.00210	0.00098	0.0002	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00237	0.00211
564493.5	4185077	0.00973	0.00223	0.00104	0.0002	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00252	0.00225
564518.5	4185077	0.01035	0.00238	0.00111	0.0002	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00268	0.00239
564543.5	4185077	0.01098	0.00252	0.00117	0.0002	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00284	0.00253
564568.5	4185077	0.01161	0.00267	0.00123	0.0003	0.00008	1.27439E-05	0.00008	6.61424E-05	0.00300	0.00268
564593.5	4185077	0.01216	0.00279	0.00129	0.0003	0.00008	1.27439E-05	0.00008	6.61424E-05	0.00314	0.00281
564618.5	4185077	0.01265	0.00291	0.00133	0.0003	0.00008	1.27439E-05	0.00008	6.61424E-05	0.00326	0.00292
564643.5	4185077	0.01304	0.00299	0.00136	0.0003	0.00008	1.27439E-05	0.00008	6.61424E-05	0.00336	0.00301
564668.5	4185077	0.01328	0.00305	0.00138	0.0003	0.00009	1.43369E-05	0.00009	7.44102E-05	0.00343	0.00306
564693.5	4185077	0.01336	0.00307	0.00138	0.0003	0.00009	1.43369E-05	0.00009	7.44102E-05	0.00345	0.00308
564718.5	4185077	0.01326	0.00305	0.00136	0.0003	0.00009	1.43369E-05	0.00009	7.44102E-05	0.00342	0.00306
564743.5	4185077	0.01298	0.00298	0.00132	0.0003	0.00010	1.59299E-05	0.0001	8.26780E-05	0.00336	0.00300
564768.5	4185077	0.01258	0.00289	0.00126	0.0003	0.00010	1.59299E-05	0.0001	8.26780E-05	0.00325	0.00291
564793.5	4185077	0.01216	0.00279	0.0012	0.0003	0.00010	1.59299E-05	0.0001	8.26780E-05	0.00314	0.00281
564818.5	4185077	0.01234	0.00283	0.00117	0.0002	0.00011	1.75229E-05	0.00011	9.09458E-05	0.00319	0.00285
564843.5	4185077	0.01292	0.00297	0.00117	0.0002	0.00011	1.75229E-05	0.00011	9.09458E-05	0.00332	0.00298
564868.5	4185077	0.0134	0.00308	0.00121	0.0003	0.00012	1.91159E-05	0.00011	9.09458E-05	0.00344	0.00310
564893.5	4185077	0.01426	0.00328	0.00132	0.0003	0.00012	1.91159E-05	0.00012	9.92136E-05	0.00367	0.00329
564918.5	4185077	0.0157	0.00361	0.00148	0.0003	0.00012	1.91159E-05	0.00012	9.92136E-05	0.00404	0.00363
564943.5	4185077	0.0178	0.00409	0.00169	0.0004	0.00013	2.07089E-05	0.00012	9.92136E-05	0.00456	0.00411
564968.5	4185077	0.02045	0.00470	0.00194	0.0004	0.00013	2.07089E-05	0.00013	1.07481E-04	0.00523	0.00472
564993.5	4185077	0.02343	0.00538	0.00221	0.0005	0.00013	2.07089E-05	0.00013	1.07481E-04	0.00597	0.00540
565018.5	4185077	0.02649	0.00608	0.00248	0.0005	0.00014	2.23019E-05	0.00013	1.07481E-04	0.00674	0.00611
565043.5	4185077	0.02949	0.00677	0.00275	0.0006	0.00014	2.23019E-05	0.00013	1.07481E-04	0.00748	0.00680
565068.5	4185077	0.03219	0.00739	0.00301	0.0006	0.00014	2.23019E-05	0.00014	1.15749E-04	0.00816	0.00742
565093.5	4185077	0.03448	0.00792	0.00325	0.0007	0.00015	2.38948E-05	0.00014	1.15749E-04	0.00874	0.00794
565118.5	4185077	0.03634	0.00835	0.00346	0.0007	0.00015	2.38948E-05	0.00014	1.15749E-04	0.00921	0.00837
565143.5	4185077	0.03718	0.00854	0.00361	0.0008	0.00015	2.38948E-05	0.00014	1.15749E-04	0.00944	0.00856
565168.5	4185077	0.0377	0.00866	0.00372	0.0008	0.00015	2.38948E-05	0.00014	1.15749E-04	0.00958	0.00868
565193.5	4185077	0.03824	0.00878	0.00383	0.0008	0.00015	2.38948E-05	0.00015	1.24017E-04	0.00974	0.00881
565218.5	4185077	0.0383	0.00880	0.0039	0.0008	0.00015	2.38948E-05	0.00015	1.24017E-04	0.00977	0.00882
565243.5	4185077	0.03809	0.00875	0.00393	0.0008	0.00015	2.38948E-05	0.00015	1.24017E-04	0.00972	0.00877
565268.5	4185077	0.03744	0.00860	0.00391	0.0008	0.00015	2.38948E-05	0.00015	1.24017E-04	0.00957	0.00862
564243.5	4185102	0.00521	0.00120	0.00053	0.0001	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00136	0.00120
564268.5	4185102	0.00555	0.00127	0.00056	0.0001	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00144	0.00128
564293.5	4185102	0.00591	0.00136	0.0006	0.0001	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00153	0.00137
564318.5	4185102	0.00631	0.00145	0.00065	0.0001	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00165	0.00146
564343.5	4185102	0.00674	0.00155	0.0007	0.0001	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00175	0.00156
564368.5	4185102	0.00722	0.00166	0.00075	0.0002	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00188	0.00167
564393.5	4185102	0.00774	0.00178	0.00081	0.0002	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00201	0.00179
564418.5	4185102	0.00831	0.00191	0.00088	0.0002	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00216	0.00192
564443.5	4185102	0.00893	0.00205	0.00095	0.0002	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00232	0.00206
564468.5	4185102	0.00959	0.00220	0.00102	0.0002	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00249	0.00221

24th and Harrison Street Project: Oakland No Mitigation

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor
UTM: (564931,4185292)

Cancer Potency Factor:	1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency	350 days/year
Averaging Period	25550 days

Year	DPM Concentration (ug/m3)	Age Sensitivty Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Cancer Risk (/million)
3rd Trimester	0.152	10	361	0.85	0.25	1.8
1	0.152	10	1090	0.85	1	21.2
2	0	10	1090	0.85	1	0.0
3	0	3	561	0.72	1	0.0
4	0	3	561	0.72	1	0.0
5	0	3	561	0.72	1	0.0
6	0	3	561	0.72	1	0.0
7	0	3	561	0.72	1	0.0
8	0	3	561	0.72	1	0.0
9	0	3	561	0.72	1	0.0
10	0	3	561	0.72	1	0.0
11	0	3	561	0.72	1	0.0
12	0	3	561	0.72	1	0.0
13	0	3	561	0.72	1	0.0
14	0	3	561	0.72	1	0.0
15	0	3	561	0.72	1	0.0
16	0	3	561	0.72	1	0.0
17	0	1	261	0.73	1	0.0
18	0	1	261	0.73	1	0.0
19	0	1	261	0.73	1	0.0
20	0	1	261	0.73	1	0.0
21	0	1	261	0.73	1	0.0
22	0	1	261	0.73	1	0.0
23	0	1	261	0.73	1	0.0
24	0	1	261	0.73	1	0.0
25	0	1	261	0.73	1	0.0
26	0	1	261	0.73	1	0.0
27	0	1	261	0.73	1	0.0
28	0	1	261	0.73	1	0.0
29	0	1	261	0.73	1	0.0
30	0	1	261	0.73	1	0.0
					Total	23.0

24th and Harrison Street Project: Oakland **With Tier 4 Mitigation and Best Practives for Fugitive Dust**

Construction Annual DPM Emissions (as PM2.5 Exhaust) and Fugitive Dust (as PM2.5)- CalEEMod Run 6/20/2016 from Project EIR
Construction Duration: 1/1/2017 to 12/31/2017

ASSUMPTION: Assume all construction emissions will be compressed into one year, 2017

Construction Scheduling	**2017**
	8 hours/day
	5 days/week
	52 weeks/year
	2080 hours/year

Onsite Construction Area Source Size (m2): 9440

Onsite Construction Emissions

2017	Construction Activity	Onsite Annual DPM Exhaust Emissions (tons/year)	Onsite Annual DPM Exhaust Emissions (g/sec)	Onsite DPM Source Exhaust Emissions (g/m2-sec)	Onsite Annual PM2.5 Fugitive Emissions (tons/year)	Onsite Average PM2.5 Fugitive Emissions (g/sec)	PM2.5 Onsite Source Fugitive Emissions (g/m2-sec)
	Demolition	0.00038	0.000	4.881E-09	0.002290	0.000	2.942E-08
	Grading	0.00010	0.000	1.285E-09	0.004100	0.000	5.267E-08
	Building Construction	0.04510	0.005	5.793E-07	0.000000	0.000	0.000E+00
	Paving	0.00021	0.000	2.698E-09	0.000000	0.000	0.000E+00
	Architectural Coating	0.00002	0.000	2.569E-10	0.000000	0.000	0.000E+00
	Total	**0.04581**	**0.006**	**5.8845E-07**	**0.006390**	**0.001**	**8.2082E-08**

Offsite Construction Vehicle Emissions

2017	Construction Activity	Offsite Worker Annual DPM Exhaust Emissions (tons/year)	Offsite Haul Trucks Annual DPM Exhaust Emissions (tons/year)	Offsite Vendor Trucks Annual DPM Exhaust Emissions (tons/year)	Offsite Worker Annual PM2.5 Fugitive Emissions (tons/year)	Offsite Haul Trucks Annual PM2.5 Fugitive Emissions (tons/year)	Offsite Vendor Trucks Annual PM2.5 Fugitive Emissions (tons/year)
	Demolition	0.00001	0.00057	0.00000	0.00031	0.00083	0.00000
	Grading	0.00000	0.00976	0.00000	0.00007	0.01420	0.00000
	Building Construction	0.00310	0.00000	0.01150	0.11020	0.00000	0.01760
	Paving	0.00001	0.00000	0.00000	0.00018	0.00000	0.00000
	Architectural Coating	0.00003	0.00000	0.00000	0.00100	0.00000	0.00000
	Total (tons/year)	**0.00315**	**0.01033**	**0.01150**	**0.11176**	**0.01503**	**0.01760**
	Trip Distance assumed in CalEEMod (mi)	12.4	20	7.3	12.4	20	7.3
	Offsite Project Trip Distance Project>27th St >I980 (mi)	0.56	0.56	0.56	0.56	0.56	0.56
	Offsite Project Emissions Project>27th St >I980 (tons/year)	**0.000142**	**0.00028924**	**0.000882192**	**0.005047**	**0.00042084**	**0.001350137**
	Total Offsite Project Exhaust Emissions (tons/year)	**0.001314**					
	Total Offsite Project Exhaust Emissions (grams/sec)	**0.000159299**					
	Total Offsite Project Fugitive Emissions (tons/year)	**0.006818**					
	Total Offsite Project Fugitive Emissions (grams/sec)	**0.00082678**					

24th and Harrison Street Project: Oakland

With Tier 4 Mitigation and Best Practives for Fugitive Dust

Sample Output

Estimates of Annual Construction DPM and fugitive Dust Emissions (as PM2.5)

Annual Average Onsite DPM Exhaust Emission Rate: 5.88448E-07 grams/m2/sec
Annual Average Onsite Fugitive Dust Emission Rate: 8.20822E-08 grams/m2/sec
Annual Average Offsite DPM Exhaust Emission Rate: 1.59299E-04 grams/sec
Annual Average Offsite Fugitive Dust Emission Rate: 8.26780E-04 grams/sec

X	Y	Onsite Annual DPM Exhaust w/Unit Emissions	Onsite Annual DPM Exhaust w/Actual Emissions	Onsite Annual Fugitive Dust w/Unit Emissions	Onsite Annual Fugitive Dust w/Actual Emissions	Offsite Annual DPM Exhaust w/Unit Emissions	Offsite Annual DPM Exhaust w/Actual Emissions	Offsite Annual Fugitive Dust w/Unit Emissions	Offsite Annual Fugitive Dust w/Actual Emissions	Total PM2/5	Total DPM
(m)	(m)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)
564243.5	4185077	0.00514	0.00030	0.00052	0.0000	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00039	0.00031
564268.5	4185077	0.00545	0.00032	0.00056	0.0000	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00042	0.00033
564293.5	4185077	0.0058	0.00034	0.0006	0.0000	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00044	0.00035
564318.5	4185077	0.00617	0.00036	0.00064	0.0001	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00046	0.00037
564343.5	4185077	0.00658	0.00039	0.00069	0.0001	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00049	0.00040
564368.5	4185077	0.00702	0.00041	0.00074	0.0001	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00053	0.00042
564393.5	4185077	0.0075	0.00044	0.00079	0.0001	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00057	0.00045
564418.5	4185077	0.00801	0.00047	0.00085	0.0001	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00060	0.00048
564443.5	4185077	0.00855	0.00050	0.00091	0.0001	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00064	0.00051
564468.5	4185077	0.00913	0.00054	0.00098	0.0001	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00069	0.00055
564493.5	4185077	0.00973	0.00057	0.00104	0.0001	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00073	0.00058
564518.5	4185077	0.01035	0.00061	0.00111	0.0001	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00077	0.00062
564543.5	4185077	0.01098	0.00065	0.00117	0.0001	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00081	0.00066
564568.5	4185077	0.01161	0.00068	0.00123	0.0001	0.00008	1.27439E-05	0.00008	6.61424E-05	0.00086	0.00070
564593.5	4185077	0.01216	0.00072	0.00129	0.0001	0.00008	1.27439E-05	0.00008	6.61424E-05	0.00090	0.00073
564618.5	4185077	0.01265	0.00074	0.00133	0.0001	0.00008	1.27439E-05	0.00008	6.61424E-05	0.00093	0.00076
564643.5	4185077	0.01304	0.00077	0.00136	0.0001	0.00008	1.27439E-05	0.00008	6.61424E-05	0.00096	0.00078
564668.5	4185077	0.01328	0.00078	0.00138	0.0001	0.00009	1.43369E-05	0.00009	7.44102E-05	0.00098	0.00080
564693.5	4185077	0.01336	0.00079	0.00138	0.0001	0.00009	1.43369E-05	0.00009	7.44102E-05	0.00099	0.00080
564718.5	4185077	0.01326	0.00078	0.00136	0.0001	0.00009	1.43369E-05	0.00009	7.44102E-05	0.00098	0.00079
564743.5	4185077	0.01298	0.00076	0.00132	0.0001	0.00010	1.59299E-05	0.0001	8.26780E-05	0.00097	0.00078
564768.5	4185077	0.01258	0.00074	0.00126	0.0001	0.00010	1.59299E-05	0.0001	8.26780E-05	0.00094	0.00076
564793.5	4185077	0.01216	0.00072	0.0012	0.0001	0.00010	1.59299E-05	0.0001	8.26780E-05	0.00091	0.00073
564818.5	4185077	0.01234	0.00073	0.00117	0.0001	0.00011	1.75229E-05	0.00011	9.09458E-05	0.00093	0.00074
564843.5	4185077	0.01292	0.00076	0.00117	0.0001	0.00011	1.75229E-05	0.00011	9.09458E-05	0.00096	0.00078
564868.5	4185077	0.0134	0.00079	0.00121	0.0001	0.00012	1.91159E-05	0.00011	9.09458E-05	0.00100	0.00081
564893.5	4185077	0.01426	0.00084	0.00132	0.0001	0.00012	1.91159E-05	0.00012	9.92136E-05	0.00107	0.00086
564918.5	4185077	0.0157	0.00092	0.00148	0.0001	0.00012	1.91159E-05	0.00012	9.92136E-05	0.00116	0.00094
564943.5	4185077	0.0178	0.00105	0.00169	0.0001	0.00013	2.07089E-05	0.00012	9.92136E-05	0.00131	0.00107
564968.5	4185077	0.02045	0.00120	0.00194	0.0002	0.00013	2.07089E-05	0.00013	1.07481E-04	0.00149	0.00122
564993.5	4185077	0.02343	0.00138	0.00221	0.0002	0.00013	2.07089E-05	0.00013	1.07481E-04	0.00169	0.00140
565018.5	4185077	0.02649	0.00156	0.00248	0.0002	0.00014	2.23019E-05	0.00013	1.07481E-04	0.00189	0.00158
565043.5	4185077	0.02949	0.00174	0.00275	0.0002	0.00014	2.23019E-05	0.00013	1.07481E-04	0.00209	0.00176
565068.5	4185077	0.03219	0.00189	0.00301	0.0002	0.00014	2.23019E-05	0.00014	1.15749E-04	0.00228	0.00192
565093.5	4185077	0.03448	0.00203	0.00325	0.0003	0.00015	2.38948E-05	0.00014	1.15749E-04	0.00244	0.00205
565118.5	4185077	0.03634	0.00214	0.00346	0.0003	0.00015	2.38948E-05	0.00014	1.15749E-04	0.00256	0.00216
565143.5	4185077	0.03718	0.00219	0.00361	0.0003	0.00015	2.38948E-05	0.00014	1.15749E-04	0.00262	0.00221
565168.5	4185077	0.0377	0.00222	0.00372	0.0003	0.00015	2.38948E-05	0.00014	1.15749E-04	0.00266	0.00224
565193.5	4185077	0.03824	0.00225	0.00383	0.0003	0.00015	2.38948E-05	0.00015	1.24017E-04	0.00271	0.00227
565218.5	4185077	0.0383	0.00225	0.0039	0.0003	0.00015	2.38948E-05	0.00015	1.24017E-04	0.00272	0.00228
565243.5	4185077	0.03809	0.00224	0.00393	0.0003	0.00015	2.38948E-05	0.00015	1.24017E-04	0.00271	0.00227
565268.5	4185077	0.03744	0.00220	0.00391	0.0003	0.00015	2.38948E-05	0.00015	1.24017E-04	0.00267	0.00223
564243.5	4185102	0.00521	0.00031	0.00053	0.0000	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00040	0.00031
564268.5	4185102	0.00555	0.00033	0.00056	0.0000	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00042	0.00033
564293.5	4185102	0.00591	0.00035	0.0006	0.0000	0.00005	7.96495E-06	0.00005	4.13390E-05	0.00045	0.00036
564318.5	4185102	0.00631	0.00037	0.00065	0.0001	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00048	0.00038
564343.5	4185102	0.00674	0.00040	0.0007	0.0001	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00051	0.00041
564368.5	4185102	0.00722	0.00042	0.00075	0.0001	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00055	0.00043
564393.5	4185102	0.00774	0.00046	0.00081	0.0001	0.00006	9.55794E-06	0.00006	4.96068E-05	0.00058	0.00047
564418.5	4185102	0.00831	0.00049	0.00088	0.0001	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00063	0.00050
564443.5	4185102	0.00893	0.00053	0.00095	0.0001	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00067	0.00054
564468.5	4185102	0.00959	0.00056	0.00102	0.0001	0.00007	1.11509E-05	0.00007	5.78746E-05	0.00072	0.00058

24th and Harrison Street Project: Oakland **With Tier 4 Mitigation and Best Practives for Fugitive Dust**

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor
UTM: (564931,4185292)

Cancer Potency Factor:	1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency	350 days/year
Averaging Period	25550 days

Year	DPM Concentration (ug/m3)	Age Sensitivty Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Cancer Risk (/million)
3rd Trimester	0.039	10	361	0.85	0.25	0.5
1	0.039	10	1090	0.85	1	5.4
2	0	10	1090	0.85	1	0.0
3	0	3	561	0.72	1	0.0
4	0	3	561	0.72	1	0.0
5	0	3	561	0.72	1	0.0
6	0	3	561	0.72	1	0.0
7	0	3	561	0.72	1	0.0
8	0	3	561	0.72	1	0.0
9	0	3	561	0.72	1	0.0
10	0	3	561	0.72	1	0.0
11	0	3	561	0.72	1	0.0
12	0	3	561	0.72	1	0.0
13	0	3	561	0.72	1	0.0
14	0	3	561	0.72	1	0.0
15	0	3	561	0.72	1	0.0
16	0	3	561	0.72	1	0.0
17	0	1	261	0.73	1	0.0
18	0	1	261	0.73	1	0.0
19	0	1	261	0.73	1	0.0
20	0	1	261	0.73	1	0.0
21	0	1	261	0.73	1	0.0
22	0	1	261	0.73	1	0.0
23	0	1	261	0.73	1	0.0
24	0	1	261	0.73	1	0.0
25	0	1	261	0.73	1	0.0
26	0	1	261	0.73	1	0.0
27	0	1	261	0.73	1	0.0
28	0	1	261	0.73	1	0.0
29	0	1	261	0.73	1	0.0
30	0	1	261	0.73	1	0.0
					Total	5.9

ATTACHMENT C

Adams Broadwell Joseph & Cardozo, March 16, 2016
Letter regarding Responses to Comments on the Jack London 4th & Madison Project
(ER 15-005)

ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
601 GATEWAY BOULEVARD, SUITE 1000
SOUTH SAN FRANCISCO, CA 94080-7037

TEL: (650) 589-1660
FAX: (650) 589-5062
lhorton@adamsbroadwell.com

DANIEL L. CARDOZO
CHRISTINA M. CARO
THOMAS A. ENSLOW
TANYA A. GULESSERIAN
LAURA E. HORTON
MARC D. JOSEPH
RACHAEL E. KOSS
JAMIE L. MAULDIN
ADAM J. REGELE
ELLEN L. WEHR

SACRAMENTO OFFICE
520 CAPITOL MALL, SUITE 350
SACRAMENTO, CA 95814-4721
TEL: (916) 444-6201
FAX: (916) 444-6209

March 16, 2016

VIA EMAIL AND U.S. MAIL

Planning Commission
Oakland City Hall
One Frank H. Ogawa Plaza, Hearing Room No. 1
Oakland, CA 94612
Emails: jmoore.ocpc@gmail.com
nagrajplanning@gmail.com
jahazielbonillaoaklandpc@gmail.com
amandamonchamp@gmail.com
jmyres.oakplanningcommission@gmail.com
pattillo@pgadesign.com
EW.Oakland@gmail.com

Peterson Vollman
Planner II
City of Oakland
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612
Email: pvollmann@oaklandnet.com

Re: Responses to Comments on the Jack London Square 4th & Madison Project (ER 15-005)

Dear Honorable Members of the Oakland Planning Commission and Mr. Vollman:

We are writing on behalf of Oakland Residents for Responsible Development regarding the Jack London Square 4th & Madison Project ("Project"), proposed by the Carmel Partners ("Applicant"). Based on our review of the Final Environmental Impact Report ("FEIR") prepared by the City of Oakland ("City"), as well as the Project's Staff Report for the March 16, 2016 hearing, we believe the City has adequately addressed the issues raised in our September 25, 2015 comments on the

Draft Environmental Impact Report ("DEIR"). We describe below the most important issues raised in our comments and the City's responses.

First, we previously commented that the DEIR failed to sufficiently describe the Project by failing to adequately describe aspects of the Project's design features and failing to describe dewatering requirements for the Project, which could lead to potentially significant impacts. In response, the City made several changes to the FEIR, which now provides: more specific details on the construction schedule; further explanation that the retail space analysis is not dependent on the retail space location; further details on transportation design features including driveway locations, as well as further detail on the City process for reviewing the final design to ensure adequate site distance is provided and all safety issues are addressed; and further analysis on the potential for dewatering and exposure to contaminated soil and water, including the process and schedule for dewatering as well as the requirements of the Construction General Permit and the City's Standard Conditions of Approval as applied to discharges of contaminated water from the Project site.

Second, we commented that the DEIR underestimated construction emissions by failing to use the correct modeling inputs for architectural coating, demolition of existing buildings, percent reductions for daily trip rates, construction duration, and assumption of Tier 4 engine use. In response, the City prepared revised air modeling using corrected inputs. Specifically, the City changed the concentration of VOCs in architectural coatings, which we noted was inconsistent between the DEIR and modeling files. In addition, the City provided further explanation of construction activities associated with site preparation and building demolition, as reflected in the modeling files. The City also removed the 16.2 percent reduction we noted was incorrectly applied in the modeling files because it had already applied a reduction elsewhere in the modeling. Finally, the revised air modeling used the appropriate default construction durations. The Project will also implement all basic and enhanced best management practices for construction and the City has ensured the use of Tier 4 engines by including it as enforceable mitigation, which would further reduce construction emissions. The revised model concluded that the Project's emissions will not result in a significant air quality impact.

Third, we previously commented that the DEIR underestimated Greenhouse Gas Emissions ("GHGs") because it incorrectly calculated the service population and used incorrect parameters and an inflated percent reduction in daily trips in its

modeling files, as explained above. The FEIR clarified the City's approach to determining the Project's service population. Specifically, the City explained that the 2013 United States Census for the City of Oakland, which it used in its estimation, relies on population per room, and not only bedrooms. The City then revised its estimate, taking into account our modeling file input comments as explained above. In addition, the Project will implement several mitigation measures, such as compliance with CALGreen mandatory measures and the applicable requirements of the Green Building Ordinance, which would further reduce the Project's GHG emissions. The City's revised model falls below the significance threshold.

Fourth, we commented that because of the Project site's long history of industrial uses, potential soil and groundwater contamination had not been adequately evaluated. Specifically, we found that the DEIR had not adequately evaluated the dewatering potential and associated impacts, and had not completed a Phase II Environmental Site Assessment ("ESA"). In response, as stated above, the City provided further details on potential dewatering impacts and clarified the City's plan to handle stormwater contaminants related to industrial uses. In addition, the City conducted a Phase II ESA for the Project site, which found that no further studies or remedial action are recommended for the projects site at this time.

We thank the City for taking seriously the legal and technical issues identified in our submittal, and for its thorough and good faith responses and additional analysis and mitigation added in the FEIR. In light of the City's response to our comments, we have no further comments and withdraw our objections to the EIR and the Project.

Thank you for your attention to this matter.

Sincerely,

Laura E. Horton

LEH:ric

3387-006rc