

TRANSBAY PROGRAM FINAL EIS REEVALUATION

May 2017

San Francisco Mayor's Office of Housing
and Community Development



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Prepared for
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CHAPTER 1

Introduction and Summary of Conclusions

The City and County of San Francisco Mayor's Office of Housing and Community Development (MOHCD) is adopting the portion of the March 2004 Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project (Transbay Program) Final Environmental Impact Statement/Environmental Impact Report (2004 EIS) that covers redevelopment at Transbay Block 7 (referred to as Block #3728 within the 2004 EIS, p. S-11). The 2004 EIS was prepared by U.S. Department of Transportation Federal Transit Administration (FTA) and the City and County of San Francisco, Peninsula Corridor Joint Powers Board, and the former San Francisco Redevelopment Agency. The 2004 EIS is incorporated in this Reevaluation by reference.

MOHCD is adopting the Transbay Block 7 portions of the 2004 EIS to support a decision to provide U.S. Department of Housing and Urban Development (HUD) vouchers for 24 units within the Transbay Transit Block 7 Housing Development (Proposed Action) located at 255 Fremont/222 Beale Street. MOHCD has prepared this Reevaluation to document compliance with the National Environmental Policy Act (NEPA) and HUD Environmental Review Procedures at 24 CFR Part 58. MOHCD is serving as the Responsible Entity for HUD.

MOHCD is adopting the 2004 EIS pursuant to the NEPA regulations promulgated by the Council on Environmental Quality (CEQ). CEQ regulations permit federal agencies to adopt a Final EIS, or portion thereof, issued by another federal agency if the EIS or portion thereof "meets the standards for an adequate statement" and the actions covered by the original environmental impact statement and the proposed action are "substantially the same" (40 CFR §1506.3). HUD's regulations at 24 CFR §58.52 allow for adoption of an EIS prepared by another agency in accordance with CEQ NEPA regulations. MOHCD has determined that the 2004 EIS meets the standards for adequacy and the action covered is substantially the same as MOHCD's Proposed Action.

The Reevaluation and 2004 EIS will be circulated for a period of 30 days consistent with CEQ and HUD regulations.

1.1 Summary

This Part 58 Reevaluation of the FTA's 2004 EIS (Reevaluation) concludes that the Proposed Action is consistent with the previously proposed redevelopment within Transbay Block 7 evaluated within the 2004 EIS. This Reevaluation does not identify any changes to Block 7 of the Transbay Program that would result in significant environmental impacts that were not previously evaluated in the 2004 EIS, nor does it identify new information or circumstances relevant to environmental concerns and bearing on the Proposed Action or its impacts that would result in

significant environmental impacts not previously evaluated in the 2004 EIS. Based on this Reevaluation, MOHCD has determined that the 2004 EIS is still adequate, accurate, and valid to support the Proposed Action.

1.2 Reevaluation Format

The Reevaluation is structured as follows:

- Chapter 1 provides an introduction and summary of findings for the Reevaluation.
- Chapter 2 describes MOHCD's Proposed Action at Transbay Block 7 and describes consistency with redevelopment at Transbay Block 7 as evaluated in the 2004 EIS.
- Chapter 3 reevaluates elements of the 2004 EIS pertinent to MOHCD's Proposed Action and HUD's Environmental Review Procedures for Responsible Entities (24 CFR Part 58).
- Chapter 4 provides a list of preparers for the Reevaluation.

CHAPTER 2

Proposed Action

The 2004 EIS evaluated a Redevelopment Area Plan which includes Transbay Block 7. MOHCD's Proposed Action is the funding of 24 Section 8 housing vouchers at 255 Fremont/222 Beale Street which is located entirely within Transbay Block 7 in the City of San Francisco. The 24 units are proposed to serve as relocation housing for the Sunnydale-Velasco Hope Master Plan redevelopment located south of Transbay Block 7. Following construction, the vouchers would provide affordable housing support over a time period of approximately 15 years.

The anticipated scale of redevelopment at Transbay Blocks 6 and 7 (Block #3728 within the 2004 EIS, p. S-11), was combined and considered under two Redevelopment Area alternatives, a Full Build Alternative and a Reduced Scope Alternative (2004 EIS, p. S-10). Under the Full Build Alternative, Blocks 6 and 7 included 1,170,450 square feet of residential space across 975 dwelling units, with up to 50,050 square feet of retail space. Under the Reduced Scope Alternative, Blocks 6 and 7 included 875,160 square feet of residential space across 729 dwelling units, and 57,860 square feet of retail space.

Since completion of the 2004 EIS, Block 6 has been partially constructed. Full buildout of the lot is planned to include a 32-story tower and podium level with 409 market rate units (at 299 Fremont Street), and an 8-story, 69-unit affordable housing building (at 280 Beale Street). It is expected Block 6 will be operational by 2019. The provision of Section 8 vouchers at Block 6 is not included within the Proposed Action.

Since completion of the 2004 EIS, Block 7 has been partially constructed, with all earthwork and foundation work completed. It is expected that Block 7 will be in operation by February 2018. Once completed 255 Fremont/222 Beale Street at Transbay Block 7, will be a 120-unit, Office of Community Investment and Infrastructure (OCII)-sponsored affordable housing project providing 120 apartments serving families between 40% and 50% of the area median income (AMI). The project would also include a childcare center and 50% of the center's enrollments will be subsidized for low income families. Block 7 is designed to achieve the Green Point equivalent of LEED Gold certification. Mercy Housing California 64, LP will own and operate the units through a 75-year ground lease with OCII.

As currently designed, redevelopment for Block 6 and 7 would provide 598 units of market rate and affordable housing. This is within the scope of analyzed redevelopment for the blocks under either alternative evaluated in the 2004 EIS.

There have been eight Addenda to the 2004 EIS considering other Transbay Program changes; however, they do not relate to redevelopment at Transbay Block 7 and thus are not discussed

further in this Reevaluation. In addition to changes analyzed under the Addenda to the 2004 EIS, the FTA, in cooperation with the Federal Railroad Administration and the Transbay Joint Powers Authority, has prepared a Draft Supplemental Environmental Impact Statement /Environmental Impact Report (SEIS) to evaluate refinements to the Downtown Rail Extension component of the Transbay Program, as well as other transportation improvements and development opportunities associated with the Transbay Program. The Downtown Rail Extension and other transportation improvements considered under the SEIS would not impact the Redevelopment Area, including Block 7, and are therefore also not discussed in this Reevaluation.

CHAPTER 3

Environmental Reevaluation of Pertinent 2004 EIS Analysis

This chapter of the Reevaluation assesses the adequacy of the 2004 EIS with respect to MOHCD's Proposed Action at Transbay Block 7. The first portion of this chapter documents compliance with federal laws and authorities listed in HUD Environmental Review Procedures at 24 CFR Part 58. The second portion of this chapter addresses the adequacy of other environmental issues areas considered under NEPA. HUD Region IX Information Bulletin CPD-03 addresses the applicability of NEPA and regulations at 24 CFR Part 58 with respect to projects under construction:

“When a construction project starts without Federal funds, the environmental requirements and limitations of NEPA and HUD Environmental regulations at 24 CFR Part 58 do not apply.” (HUD Region IX, 2006)

3.1 Compliance with 24 CFR §58.5, and §58.6 Laws and Authorities

3.1.1 Airport Hazards

Regulatory Requirements

Under 24 CFR Part 51 D, it is HUD's general policy to apply standards to prevent incompatible development around civil airports and military airfields.

Impacts Associated with the Proposed Action

The San Francisco International Airport is nearly 10 miles south of Transbay Block 7. The Proposed Action site is therefore, well outside the boundaries of the San Francisco Airport runway protection zones, safety compatibility zones, and outside all other defined safety zones, airspace protection zones, and Airport Influence Areas of the airport's Comprehensive Land Use Compatibility Plan.¹ The Oakland International Airport is approximately 9 miles southeast of the Proposed Action site. The site is well outside the boundaries of Oakland Airport runway

¹ City/County Association of Governments of San Mateo County, 2012 (November). Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport. Prepared by Ricondo & Associates, Inc., Jacobs Consultancy, and Clarion. Available: http://ccag.ca.gov/wp-content/uploads/2014/07/SFOCLUP_Vol-II_Appendices_july-2012-report2.pdf. Accessed April 26, 2017.

protection zones and all other defined safety zones.² Furthermore, there are no active military airfields in San Francisco County or the nearby vicinity. As the Proposed Action is not located within airport protection or safety zones no additional analysis is required.

3.1.2 Coastal Barrier Resources

Regulatory Requirements

It is HUD general policy to disallow federal assistance for projects in a Coastal Barrier Resources System unit. This is defined by the Coastal Barrier Resource Act, as amended by the Coastal Barrier Improvement Act of 1990 (16 USC §3501).

Impacts Associated with the Proposed Action

There are no Coastal Barrier Resource System (CBRS) Units, or CBRS buffer zones, as defined under the Coastal Barrier Resources Act of 1982 (PL 97-348), as amended by the Coastal Barrier Improvement Act of 1990 (PL 101-591) located in California.³ Therefore, this project is in compliance with the Coastal Barrier Resources Act.

3.1.3 Flood Insurance and Floodplain Management

Regulatory Requirements

The Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 (42 USC 4012a) require that projects receiving federal assistance and located in an area identified by the Federal Emergency Management Agency (FEMA) as being within a Special Flood Hazard Areas (SFHA) be covered by flood insurance under the National Flood Insurance Program (NFIP). Executive Order 11988 and 24 CFR Part 55 require that federal projects avoid direct or indirect support of floodplain development wherever there is a practicable alternative.

Impacts Associated with the Proposed Action

Floodplain effects and flood insurance conformity of Block 7 within the Redevelopment Area was analyzed sufficiently under the 2004 EIS. Section 5.11 *Floodplain*, elaborates that:

“No portions of the Transbay Terminal/Caltrain Downtown Extension/ Redevelopment Project area would encounter surface water bodies, including creeks or reservoirs. Also, according to the City and County of San Francisco Planning Department, no portions of the Transbay Program area lie within recognized flood hazard zones with the exception of potential tsunami inundation. No flood hazard zones have been mapped by [FEMA] in San Francisco. Mitigation measures are not required.”

² Alameda County Community Development Agency. Oakland International Airport Land Use Compatibility Plan/ Chapter 3, Oakland International Airport Policies. December 2010. Available: www.acgov.org/cda/planning/generalplans/documents/OAKCh3_Oakland_International_Airport_Policies.pdf, Accessed May 1, 2017.

³ U.S. Fish and Wildlife Service, 2017. Results of Coastal Barrier Resources System Mapper electronic database search for San Francisco, California. Available: <http://www.fws.gov/cbra/Maps/Mapper.html>. Accessed April 26, 2017.

Updated FEMA flood insurance risk maps verify that Block 7, where the Proposed Action would be located is still located outside of a flood hazard zone or defined floodplain.⁴ No additional analysis is required.

3.1.4 Clean Air

Regulatory Requirements

Clean Air Act, Sections 176 (c) and (d), and 40 CFR Parts 6, 51, 9 apply to all federal actions. As such, federal actions, including those affiliated with HUD funding must conform to the State Implementation Plan.

Impacts Associated with the Proposed Action

The 2004 EIS analyzed the air quality impacts of the Transbay Program, including emissions associated with the construction and operation of redevelopment at Transbay Block 7. The following 2004 EIS sections addressed air quality:

- Section 4.6, *Air Quality*
- Section 5.7, *Air Quality*

The 2004 EIS concluded that the operational impacts would not be significant, because vehicle miles traveled (VMT) in the region would be reduced and there would be no carbon monoxide exceedances at local intersections in the vicinity of the Transit Center. Additionally, the 2004 EIS concluded that while air quality impacts of construction of the Transit Center could result in short term emissions of nitrogen oxides, carbon monoxide, and sulfur oxides from diesel-powered construction equipment, carbon monoxide emissions from worker vehicles; dust or respirable particulate matter emissions from vehicles traveling on unpaved surfaces and/or grading and other earthmoving activities; and reactive organic gas emissions from asphalt placement and architectural coatings; there are no quantitative emissions thresholds for construction activities, which by their nature are temporary and occur over a large area, potentially affecting different receptors at different times. The 2004 EIS used the Bay Area Air Quality Management District's (BAAQMD) approach to the analysis of construction impacts, which involves implementation of effective and comprehensive dust control measures rather than detailed quantification of emissions.

As regulatory thresholds for air quality have changed since the completion of the 2004 EIS, additional analysis is provided below to ensure the adequacy of the 2004 EIS related to redevelopment at Transbay Block 7.

Affected Environment and Regulations Update

This subsection updates the regional, state, and federal air pollutant regulatory setting and attainment status described in Section 4.6, *Air Quality*, of the 2004 EIS. This subsection also updates the existing air quality conditions based on the past five years of data from air quality monitoring at the Arkansas Street monitoring station in San Francisco.

⁴ FEMA, 2015. SE San Francisco Preliminary Flood Insurance Rate Map. Updated November 12, 2015. Available: http://sfgsa.org/sites/default/files/Document/SF_SE.pdf/.

Federal and State Air Quality Standards

Since the publication of the 2004 EIS, several national and California ambient air quality standards have changed. The most recent federal and state standards are shown in **Table 1**. Table 1 presents a side-by-side comparison of the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) values from the 2004 EIS with the updated values.

**TABLE 1
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS COMPARISON**

Pollutant	Averaging Time	National and California Ambient Air Quality Standards (2004 EIS)		Current National and California Ambient Air Quality Standards (2017)	
		National Standard	California Standard	National Standard	California Standard
Ozone	1-hour	0.12 ppm	0.09 ppm	---	0.09 ppm
	8-hour	0.08 ppm	---	0.07 ppm	0.07 ppm
Carbon Monoxide	1-hour	35 ppm	20 ppm	35 ppm	20 ppm
	8-hour	9 ppm	9 ppm	9 ppm	9 ppm
Nitrogen Oxides	1-hour	---	0.25 ppm	100 ppb	0.18 ppm
	Annual	0.053 ppm	---	0.053 ppm	0.030 ppm
Sulfur Dioxide	1-hour	---	0.25 ppm	75 ppb	0.25 ppm
	3-hour	---	N/A	0.5 ppm	---
	24-hour	365 µg/m ³	0.04 ppm	0.14 ppm	0.04 ppm
	Annual	80 µg/m ³	---	0.03 ppm	---
Suspended Particulates (PM ₁₀)	24-hour	150 µg/m ³	50 µg/m ³	150 µg/m ³	50 µg/m ³
	Annual	50 µg/m ³	30 µg/m ³	---	20 µg/m ³
Particulate Matter-Fine (P _{2.5})	24-hour	65 µg/m ³	---	35 µg/m ³	---
	Annual	15 µg/m ³	---	12 µg/m ³	12 µg/m ³

NOTES:

ppm = parts per million
 ppb = parts per billion
 µg/m³ = micrograms per cubic meter
 --- = No information available

SOURCE: California Air Resources Board (CARB), 2016. Ambient Air Quality Standards. May 4, 2016. Available: <https://www.arb.ca.gov/research/aaqs/aaqs2.pdf>. Accessed April 14, 2017.

The changes in the ambient air quality standards presented in Table 1 are summarized as follows:

- In June 2002, the California Air Resources Board (CARB) established new annual ambient standards for fine particulate matter (PM_{2.5}) and respirable particulate matter (PM₁₀).
- The 8-hour California ozone standard was approved by CARB on April 28, 2005, and became effective on May 17, 2006.
- The national 1-hour ozone standard was revoked by the U.S. Environmental Protection Agency (USEPA) on June 15, 2005.

- USEPA lowered the 24-hour PM_{2.5} standard from 65 µg/m³ to 35 µg/m³ in 2006. USEPA issued attainment status designations for the 35 µg/m³ standard on November 13, 2009, and has designated the Bay Area as non-attainment for the 35 µg/m³ PM_{2.5} standard.
- The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
- On January 6, 2010, the USEPA proposed to strengthen the national 8-hour ozone standard from 0.08 parts per million (ppm) to a level within the range of 0.06 to 0.07 ppm. USEPA will issue final standards by August 31, 2010, and will make final area designations by July 2011.
- On March 24, 2010, the USEPA issued its final rule to ensure that transportation conformity requirements are consistent with PM_{2.5} and PM₁₀ standards and that state and local transportation projects do not create localized hot spots of particulate matter. The rule will take effect on April 23, 2010.
- On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 parts per billion (ppb). The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
- On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
- On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

Attainment Status and Existing Monitored Air Quality

The updated San Francisco Bay Area Air basin (SFBAAB) attainment status with the NAAQS and CAAQS for all criteria pollutants is presented in **Table 2**. Since the 2004 EIS was completed, there have been several attainment designation changes in the SFBAAB. According to the EPA Green Book, SFBAAB is currently designated as marginal - nonattainment for the national ozone (O₃) standard, moderate – nonattainment for the national PM_{2.5} standard and moderate maintenance area for the national carbon monoxide (CO) standard.⁵ According to the CARB,

⁵ Environmental Protection Agency (EPA), 2017. Nonattainment Areas for Criteria Pollutants (Green Book). Available: <https://www.epa.gov/green-book>. Accessed April 14, 2017.

San Francisco County is currently designated as non-attainment for the 1-hour and 8-hour O₃ standards, and the PM_{2.5} and PM₁₀ state standards.⁶

TABLE 2
CURRENT FEDERAL AND STATE ATTAINMENT STATUS FOR THE BAY AREA

Pollutant	Federal Status	State Status	Change since 204 EIS
O ₃	Non-attainment, marginal for 8-hour average	Non-attainment for 1-hour and 8-hour average	Federal – from no standard to non-attainment for 8-hour standard; no status for revoked 1-hour standard State – from no standard to non-attainment for 8-hour standard; no change for 1-hour standard
PM ₁₀	Attainment/Unclassified	Non-attainment, 24 hour and annual standard	Federal and State - No Change
PM _{2.5}	Attainment, annual standard, 24-hour standard; non-attainment, 24-hour standard	Non-attainment, annual standard	Federal from unclassified to non-attainment, 24-hour standard State - from no designation to non-attainment, annual standard
CO	Attainment, but designated as a moderate Maintenance Area	Attainment	No Change
NO ₂	Attainment	Attainment	No Change
SO ₂	Attainment	Attainment	No Change

SOURCE: Environmental Protection Agency (EPA), 2017. Nonattainment Areas for Criteria Pollutants (Green Book). Available: <https://www.epa.gov/green-book>. Accessed April 14, 2017; California Air Resource Board (CARB), 2017. Area Designations Maps/State and National. Available: <https://www.arb.ca.gov/desig/adm/adm.htm>. Accessed April 14, 2017; U.S. Department of Transportation Federal Transit Administration, 2004. Transbay Terminal Downtown Extension/Redevelopment Project. March 2004.

Existing air quality conditions in the study area are reflected by measurements taken at the nearest BAAQMD monitoring station, which is the Arkansas Street monitoring station in San Francisco. **Table 3** presents the updated ambient air measurement data for the last three years of available data from the Arkansas Street monitoring station. The table indicates federal and state standards for these pollutants, and where these pollutant standards have been exceeded.

Environmental Consequences Update

Transbay Block 7 is already in the construction phase consistent with prior federal, state and local approvals and project vouchers would only be used during the operational phase. As such the following re-evaluation, consistent with HUD Region IX Information Bulletin CPD-03, focuses on operational emissions to ensure that the Proposed Action's support of vouchers for 24 units would be less than significant in light of regulatory updates since the 2004 EIS.

Operation of 24 residential dwelling units at Transbay Block 7 would result in criteria air pollutant and precursor emissions from a variety of emission sources. These sources include onsite area and energy sources and mobile on-road. The California Emissions Estimator Model (CalEEMod version 2016.3.1) was used to estimate operational-related emissions resulting from

⁶ California Air Resource Board (CARB), 2017. Area Designations Maps/State and National. Available: <https://www.arb.ca.gov/desig/adm/adm.htm>. Accessed April 14, 2017.

the Proposed Action to determine if it would exceed federal *de minimis* or local BAAQMD operational thresholds. Modeling details and assumptions can be found in Appendix A.

TABLE 3
SUMMARY OF POLLUTANT MONITORING DATA AT SAN FRANCISCO –
ARKANSAS STREET MONITORING STATION

Pollutant	Monitoring Data by Year		
	2013	2014	2015
Ozone – Arkansas Street Monitoring Station			
Highest 1 Hour Average (ppm) ^b	0.069	0.079	0.085
Days over State Standard (0.09 ppm) ^a	0	0	0
Highest 8 Hour Average (ppm) ^b	0.059	0.069	0.067
Days over National Standard (0.075 ppm) ^a	0	0	0
Days over State Standard (0.07 ppm) ^a	0	0	0
Particulate Matter (PM10) – Arkansas Street Monitoring Station			
Highest 24 Hour Average – State/National ($\mu\text{g}/\text{m}^3$) ^b	41.9	34.5	44.7
Measured Days over National Standard ($150 \mu\text{g}/\text{m}^3$) ^{a,c}	0	0	0
Measured Days over State Standard ($50 \mu\text{g}/\text{m}^3$) ^{a,c}	0	0	0
Particulate Matter (PM2.5) – Arkansas Street Monitoring Station			
Highest 24 Hour Average ($\mu\text{g}/\text{m}^3$) ^b – National Measurement	48.5	33.2	35.4
Estimated Days over National Standard ($35 \mu\text{g}/\text{m}^3$) ^{a,c}	2	0	0
State Annual Average ($12 \mu\text{g}/\text{m}^3$) ^b	---	8	8

NOTES:

a Generally, state standards and national standards are not to be exceeded more than once per year.

b ppm = parts per million; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter.

c PM10 and PM2.5 is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.

Values in **bold** exceed the respective air quality standard.

SOURCE: California Air Resources Board, 2017. *Summaries of Air Quality Data, 2013-2015*. Available: <http://www.arb.ca.gov/adam/topfour/topfour1.php>. Accessed April 14, 2017.

Comparison to Federal De Minimis Levels

This evaluation is limited to emissions of pollutants (or their precursors) for which an area is classified as nonattainment or maintenance status for the federal ambient air quality standards. For ozone precursors (ROG and NO_x), the *de minimis* thresholds depend on the severity of the nonattainment classification. For other pollutants, the threshold is set at 100 tons per year. The SFBAAB is currently designated as marginal - nonattainment for the national O₃ standard, moderate – nonattainment for the national PM_{2.5} standard and moderate maintenance area for the

national CO standard.⁷ **Table 4** shows the applicable general conformity thresholds that apply to the project in the SFBAAB.

TABLE 4
GENERAL CONFORMITY DE MINIMIS THRESHOLDS FOR
PROJECT IN THE SAN FRANCISCO BAY AREA AIR BASIN

Pollutant	SFBAAB (tpy)
NO _x	100
VOC	50
PM _{2.5}	100
CO	100
SO ₂	100

SOURCE: USEPA, 2017. General Conformity De Minimis Emission Levels. Available: <https://www.epa.gov/general-conformity/de-minimis-emission-levels>. Accessed April 14, 2017.

The unmitigated emissions of ozone precursors (NO_x and VOC), PM_{2.5}, CO and SO₂ during onsite operation are summarized in Table 5. As shown in **Table 5**, these operational emissions are estimated to be below the General Conformity *de minimis* thresholds. As proposed, the Proposed Action would be exempt from General Conformity requirements for operations-related emissions. No new significant impacts have been identified in comparison to the 2004 EIS.

TABLE 5
ANNUAL PROJECT OPERATION EMISSIONS COMPARED
TO APPLICABLE GENERAL CONFORMITY DE MINIMIS THRESHOLDS

Sources	Pollutant Emissions				
	NO _x	VOC	PM _{2.5}	CO	SO ₂
Area Sources	<0.1	0.2	<0.1	0.3	<0.1
Energy Sources	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile Sources	0.2	0.1	<0.1	0.5	<0.1
Total Proposed Project	0.2	0.3	<0.1	0.8	<0.1
General Conformity <i>de minimis</i> Thresholds	100	50	100	100	100
Exceed Operational Threshold?	No	No	No	No	No

NOTES: Operational emissions were estimated using CalEEMod Version 2016.3.1. Detailed CalEEMod results can be found in Appendix A.

SOURCE: ESA, 2017.

Comparison to Bay Area Air Quality Management District Thresholds

Table 6 summarizes the daily mobile, energy and area emissions of criteria pollutants that would be generated by project development and compares them with BAAQMD thresholds. **Table 7** summarizes the annual emissions from Proposed Action operations. As indicated in Table 6 and

⁷ Environmental Protection Agency (EPA), 2017. Nonattainment Areas for Criteria Pollutants (Green Book). Available: <https://www.epa.gov/green-book>. Accessed April 14, 2017.

Table 7, operational emissions are estimated to be below the BAAQMD significance thresholds. Consequently, criteria pollutant emissions from operation would be less than significant with respect to both federal and local air quality standards. No new significant impacts have been identified in comparison to the 2004 EIS.

TABLE 6
AVERAGE DAILY OPERATIONAL-RELATED POLLUTANT EMISSIONS (POUNDS/DAY)^a

Project Sources	ROG	NOx	PM₁₀	PM_{2.5}
Area Sources	5.5	<0.1	<0.1	<0.1
Energy Sources	<0.1	0.1	<0.1	<0.1
Mobile Sources	0.3	1.1	0.1	0.2
Total Emissions	5.8	1.2	0.1	0.2
<i>BAAQMD Operational Threshold</i>	54	54	82	54
Significant Impact?	No	No	No	No

NOTES:

^a Emissions include results modeled with CalEEMod for project operations during the Winter season. Additional data and assumptions are in Appendix A.

SOURCE: ESA, 2017.

TABLE 7
ANNUAL OPERATIONAL-RELATED POLLUTANT EMISSIONS (TONS/YEAR)^a

Project Sources	ROG	NOx	PM₁₀	PM_{2.5}
Area Sources	1.0	<0.1	<0.1	<0.1
Energy Sources	<0.1	<0.1	<0.1	<0.1
Mobile Sources	0.1	0.2	<0.1	<0.1
Total Emissions	1.1	0.2	<0.1	<0.1
<i>BAAQMD Operational Threshold</i>	10	10	15	10
Significant Impact?	No	No	No	No

NOTES:

^a Emissions include results modeled with CalEEMod for annual project operations. Additional data and assumptions are in Appendix A.

SOURCE: ESA, 2017.

3.1.5 Coastal Zone Management

Regulatory Requirements

Coastal Zone Management Act, Sections 307(c), (d) applies to any proposed activity affecting areas covered by an approved coastal zone management plan. HUD requires that projects are consistent with coastal zone programs.

Impacts Associated with the Proposed Action

Coastal Zone Management conformity was sufficiently analyzed with regard to effects of Block 7 within the Redevelopment Area under the 2004 EIS. EIS Section 4.13, *Coastal Zone*, disclosed

that the nearest portion of the Transbay Program area to the coastal zone as managed by the San Francisco Bay Conservation and Development Commission was a project alternative (the Second-to-Mission Alternative), where the alignment would terminate at Mission Street and The Embarcadero and is approximately 190 feet from the shoreline. Block 7, the location of the Proposed Action is well beyond the 100-foot jurisdiction boundary. No additional analysis is required.

3.1.6 Contamination and Toxic Substances

Regulatory Requirements

24 CFR §58.5(i)(2) addresses assessment of environmental hazards on HUD-assisted activities, including chemical and radioactive material, and activities of a flammable or explosive nature.

Impacts Associated with the Proposed Action

The 2004 EIS considered potential areas of contamination that could affect Transbay Block 7. Section 4.17, *Hazardous Materials*, Section 5.15, *Hazardous Materials*, and Section 5.21, *Construction Impacts*, of the 2004 EIS addressed the existing setting relevant to hazards and hazardous materials associated with historic and current uses of the Redevelopment Area and vicinity and analyzed the level of risk of exposure or releases of hazardous materials generated from the Transbay Program development. The EIS identified three primary hazardous material related risks: historic fill, underground storage tanks and historic uses, and new alignment and fueling facility for the project. There are no underground storage tanks on or in the vicinity of the site and the new alignment and fueling facility would not be located in the vicinity of Block 7. Historic fill used to reclaim areas of the Bay along the historic shoreline including the Redevelopment Area. Section 5.21, *Construction Impacts*, concludes that

“Disposition of the excavated materials will be the responsibility of the contractor. Any hazardous materials will need to be disposed of according to federal and state laws and regulations governing its hauling and disposition (see Section 5.21.15.). The actual location for the use (e.g., as fill material) or disposal of non-hazardous excavated materials will depend on the demand for such materials at the time of construction and/or the ability to dispose of these materials at a site to be determined by the contractor.” (2004 EIS, p. 5-192).

The 2004 EIS required mitigation measures to address construction related risks associated with hazardous building materials and soil. As such no additional analysis is required.

3.1.7 Endangered Species

Regulatory Requirements

Section 7 of the Endangered Species Act applies to any federal action which might jeopardize continued assistance of endangered or threatened species or result in destruction or modification of critical habitat.

Impacts Associated with the Proposed Action

Endangered Species Act conformity was considered for Transbay Block 7 within the 2004 EIS. As disclosed in Section 4.9 *Vegetation and Wildlife*, the U.S. Fish and Wildlife Service indicated that no adverse effects on endangered species of wildlife and plants or their habitats was expected from the proposed improvements. No additional analysis is required.

3.1.8 Explosive and Flammable Hazards

Regulatory Requirements

Under 24 CFR Part 51C, HUD will not approve an application for assistance for a proposed action located at less than the acceptable separation distance from a hazard unless appropriate mitigation measures are implemented or are already in place.

Impacts Associated with the Proposed Action

Consistent with Section 3.1.6, *Contamination and Toxic Substances*, discussed above, the 2004 EIS analysis of the Transbay Program under Section 4.17, *Hazardous Materials*, Section 5.15, *Hazardous Materials*, and Section 5.21, *Construction Impacts*, of the 2004 EIS considered effects related to explosive and flammable hazards. The EIS concludes that there would be no impact from above ground storage containers to proposed sensitive receptors; the Transbay Terminal would be located two blocks away from residents at Block 7, and would not provide fueling services. Furthermore, potential fuel related containers and facilities considered under the Transbay Program and project alternatives would be regulated under existing federal standards (2004 EIS, p. 5-112). As such residents under the Proposed Action would be adequately distanced from potential above ground storage tanks and no additional analysis is required.

3.1.9 Farmlands Protection

Regulatory Requirements

The Farmland Protection Policy Act of 1981 applies to any federally assisted action which encourages the conversion of prime, unique, state/locally important farmlands. Compliance requires that the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses be minimized.

Impacts Associated with the Proposed Action

As disclosed in the 2004 EIS, Block 7 includes urban, disturbed land; therefore, the Proposed Action would not affect farmlands. There are no protected farmlands in the City and County of San Francisco.⁸ No additional analysis is required.

⁸ Natural Resources Conservation Service, 2017. Results of electronic Web Soil Survey database. U.S. Department of Agriculture. Available: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed April 26, 2017.

3.1.10 Historic Preservation

Regulatory Requirements

Federal actions are subject to Section 106 of the National Historic Preservation Act, 16 USC §470(f), Section 106; 36 CFR Part 800.

Impacts Associated with the Proposed Action

The 2004 EIS considered potential historical and archaeological resources at Transbay Block 7 In Section 4.16, *Historic and Cultural Resources*, Section 5.14, *Historic and Cultural Resources*, Section 5.21, *Construction Impacts*, and Section 5.21.14, *Historical and Cultural Resources*.

The 2004 EIS concluded that though mitigation, if buried cultural materials are unearthed during construction, work in the vicinity of the find would be halted until a qualified archaeologist can assess their significance. If human remains are encountered during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code 5097.88 (2004 EIS, p. 5-86 through p 5-110).

The 2004 EIS included a Memorandum of Agreement among the Federal Transit Administration, and the California State Historic Preservation Officer for the Transbay Program (2004 EIS, Appendix G). As the foundation of Block 7 is completed and compliance steps are being followed under the MOA, the Proposed Action would trigger no additional historic or cultural resource impacts. No further analysis is required.

3.1.11 Noise Abatement and Control

Regulatory Requirements

HUD regulations at 24 CFR Part 51 B contain standards for exterior noise levels along with policies for approving HUD-supported or -assisted housing projects in high-noise areas.

Impacts Associated with the Proposed Action

The 2004 EIS analyzed noise and vibration impacts of the Transbay Program, including Block 7 in the following sections:

- Section 4.7, *Noise and Vibration*
- Section 5.8, *Noise and Vibration*
- Section 5.21.10, *Construction Noise and Vibration*

The 2004 EIS concluded that there would be no airborne noise impacts resulting from train service to the Transit Center because the trains would enter the Transit Center through an underground tunnel. Operation of the Transbay Program would have significant ground borne vibration impacts at four locations along the Caltrain Downtown Extension rail tunnel. However, the impacts at these locations would be reduced to a less-than significant level by mitigation identified in the 2004 EIS (p. 5-77).

Section 4.7, *Noise and Vibration*, considered the existing ambient day-night noise levels for the Redevelopment Area (2004 EIS, p. 4-29 through 4-32). The ambient noise environment surrounding the Redevelopment Area consisted of automobile and truck traffic noise, with traffic on the Bay Bridge being the most pervasive in areas closest to the Bridge. Other noise sources in the Redevelopment Area include small aircraft flyovers and normal community activity.

A noise survey presented in the 2004 EIS was conducted in July 1995, with additional noise measurements conducted in November 1996 and June 2001. These noise surveys consisted of 24-hour long-term and 30-minute short-term noise measurements at nearby residential complexes located near the Block 7 (2004 EIS, p. 4-30 and 4-31).

As the noise environment surrounding Transbay Block 7 has changed since the 2004 EIS, additional analysis is provided below to ensure the adequacy of the 2004 EIS related to redevelopment at Transbay Block 7.

Affected Environment and Regulations Update

Since the publication of the 2004 EIS, the ambient noise levels in and around Transbay Block 7 have likely increased due to increased vehicular traffic along roadways in the vicinity.

The San Francisco City-wide noise map developed by the Department of Public Health in 2006 was reviewed to approximate the existing day-night noise levels at Block 7. The San Francisco City-wide background noise level map shows the combined traffic noise levels along Fremont Street and Beale Street to range between 65 to 70 decibel (dBA) day-night average sound (Ldn).

The HUD web-based Day/Night Noise Level (DNL) Calculator is an assessment tool that calculates the DNL from roadway and railway traffic as well as from aircraft and loud impulse sounds. ESA modeled noise levels according to the HUD DNL Calculator instructions which require assessing noise impacts from roadways up to 1,000 feet away and railways up to 3,000 feet away which could affect the Proposed Action. The two roadways closest to Block 7 and having the most impact with motor vehicle and bus traffic are Fremont Street, Beale Street, Folsom Street and Howard Street. The Transbay Temporary Terminal Station is located within 3,000 feet of Block 7; however, this station would not be operational when the Proposed Action is occupied.

Two airports are located within the preliminary screening distance of the Proposed Action. The San Francisco International Airport (SFO) is located approximately 10 miles to the south and Oakland International Airport (OAK) is located approximately 9 miles to the southeast. However, the Proposed Action is located several miles outside of the of the 60 dBA and 65 dBA Community Noise Equivalent Level (CNEL) airport noise contours based on each airport's respective noise contour map. Consequently, the contribution of airport noise from SFO and OAK would not materially contribute to the noise environment at Block 7 based on each airport's respective noise contour map and are not included in the HUD DNL Calculator assessment.

Transportation noise for Fremont Street, Beale Street, Folsom Street and Howard Street were calculated using the HUD DNL Calculator using 2010 average daily traffic volumes obtained

from the San Francisco Chained Activity Modeling Process (SFCHAMP) GIS database, which includes vehicle trips generated by the Block 7 development.⁹ The combined Ldn exterior noise from these sources was calculated to be 74.9 dBA Ldn at Block 7. Appendix B summarizes the traffic noise modeling details and assumptions.

The acceptable exterior noise levels set forth by HUD regulations for new construction of housing are 65 Ldn or less. Ldn is a 24-hour average noise level with a 10 dBA penalty for noise occurring during the nighttime hours, defined as 10:00 PM to 7:00 AM. The regulations consider the range between 65 dBA Ldn and 75 dBA Ldn to be normally unacceptable, unless appropriate sound attenuation measures are provided.

Environmental Consequence Update

Transbay Block 7 is already in the construction phase consistent with prior federal, state and local approvals and project vouchers would only be used during the operational phase. As such the following re-evaluation, consistent with HUD Region IX Information Bulletin CPD-03, focuses on operational noise levels to ensure that the Proposed Action's support of vouchers for 24 units would be less than significant in light of potential noise area increases since the 2004 EIS.

The resulting exterior noise levels at Block 7 based on the HUD DNL Calculator would fall within HUD's "normally unacceptable" range, between 65 dBA and 75 dBA Ldn as discussed above.

Title 24 of the California Code of Regulations establishes uniform noise insulation standards for residential projects. Residences must be designed to limit intruding noise to an interior CNEL or Ldn of at least 45 dBA. According to a technical memorandum prepared by Vibro-Acoustic Consultants, the walls, floor-ceiling assemblies and windows of the proposed residential dwelling units would be constructed so that the interior noise levels attributable to exterior sources would not exceed 45 dBA Ldn in any habitable room.¹⁰ Therefore, the interior noise levels of the proposed residential dwelling units under the Proposed Action would meet the interior noise goal of HUD and the State of California. As appropriate design measures have been incorporated into the Proposed Action, no new significant impacts have been identified in comparison to the 2004 EIS.

3.1.12 Sole Source Aquifers

Regulatory Requirements

The Safe Drinking Water Act of 1974 applies to federally assisted project which may contaminate an aquifer designated by USEPA as the sole source of drinking water for a community. Further, it prohibits financial assistance of projects which USEPA determines may contaminate a designated sole source aquifer.

⁹ San Francisco County Transportation Authority, 2017. Modeling and Travel Forecasting. Available: <http://www.sfcta.org/modeling-and-travel-forecasting>. Assessed April 26, 2017.

¹⁰ Vibro-Acoustic Consultants, 2015. Transbay Block 7 – DBI CBC1207 Acoustical Report (00857). December 16, 2015.

Impacts Associated with the Proposed Action

The 2004 EIS considered ground water resources in the Transbay Program area that could be affected by the Transbay Program, which included the area of the Proposed Action. Section 4.11.1 *Ground Water Resources*, and Section 5.10, *Water Resources* concluded that impacts to groundwater resources would be less than significant. There are no sole source aquifers in San Francisco; therefore, no additional analysis is required.¹¹

3.1.13 Wetlands Protection

Regulatory Requirements

Executive Order 11990, Protection of Wetlands, applies to any federal action proposed for construction in a wetland. As such HUD projects should avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

Impacts Associated with the Proposed Action

The 2004 EIS addresses that there are no surface water bodies on the Transbay Program site and that the Transbay Program would not “require filling of or construction within wetlands or Bay waters or affect water quality” (2004 EIS, p. 4-39). No additional analysis is required.

3.1.14 Wild and Scenic Rivers

Regulatory Requirements

HUD projects must assure that federal actions would not foreclose designation of rivers under the Wild and Scenic Rivers Act.

Impacts Associated with the Proposed Action

There are no federally designated Wild and Scenic Rivers located within the City and County of San Francisco and thus no additional analysis is required.¹²

3.1.15 Environmental Justice

Regulatory Requirements

Executive Order 12898 states that federal agencies shall identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations

Impacts Associated with the Proposed Action

The 2004 EIS considered environmental justice impacts that could be generated by the Transbay Program, which included Block 7. Section 4.2 *Socioeconomic Characteristics*, and Section 5.3.5,

¹¹ U.S. Environmental Protection Agency, 2016. Sole Source Aquifers in Region 9. Available: <https://www3.epa.gov/region9/water/groundwater/ssa.html>. Accessed April 26, 2017.

¹² National Wild and Scenic Rivers System, 2016. Electronic Database Search for National Wild and Scenic Rivers in California. Available: <http://www.rivers.gov/index.php>. Accessed April 26, 2017.

Environmental Justice, of the 2004 EIS conclude that construction of the Transbay Program would, “have no long-term adverse effects on minority, low-income and transit dependent communities.” (2004 EIS, p. 5-37). The EIS further elaborates that:

“Census Tracts 176.02 and 179.01 where the majority of the project impacts would occur, has relatively lower percentages of minority and low-income populations as compared to the greater San Francisco area. Census Tract 180, where higher concentrations of minority populations occur, would have fewer project impacts. Minority populations are not disproportionately represented among those who would be displaced by the project or who would live adjacent to the project. Therefore, the project would have neutral environmental justice implications. The proposed project components would improve mobility for transit-dependent populations and would enhance intermodal connectivity. All transit services would remain continuous during the construction period. The proposed community revitalization and redevelopment plan, including the provision of affordable housing, would be an added benefit to the community.”

The Proposed Action provides vouchers for affordable dwelling units, thereby increasing the availability of low income housing resources. This is a beneficial effect and no further analysis is required.

3.2 Other Environmental Issue Areas

3.2.1 Land Development

Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design

The 2004 EIS considered the compatibility of the Transbay Program including development at Block 7 within the following sections:

- Section 4.1, *Land Use, Wind and Shadow*
- Section 4.1.1, *Existing Land Uses in the Project Area*
- Section 5.1.1.3, *Redevelopment Land Use Impacts*
- Section 5.1.1.4, *Neighborhood Character and Compatibility*
- Section 5.1.1.5, *Consistency with Existing Plans and Policies*

Collectively these sections address the changes related to an increase in height limits and density. The 2004 EIS concluded that the Transbay Program would result in a mix of residential, office, hotel, and retail uses that would increase the height limits overall and, “result in substantial open space areas in several portions of the Transbay Redevelopment Area, to complement the more intensive development” (2004 EIS, p. 5-12). The Redevelopment Area under any of the alternatives, would be expected to intensify the urban character of the area and to result in a more cohesive neighborhood with a true mixture of residential and commercial activities. The 2004 EIS found that the Transbay Program Redevelopment Area would not conflict with any of the policies contained in the documents stated above.

As discussed within Chapter 2, the Proposed Action falls within the scope of development at Block 7 assessed within the 2004 EIS and therefore no additional analysis is required.

Soil Suitability/Erosion/Drainage/Storm Water Runoff

The 2004 EIS considered the potential effects of the Transbay Program including development at Block 7 with regard to soil integrity, erosion and storm water management in the following sections:

- Section 4.8, *Geology and Seismicity*
- Section 4.11.2, *Surface Water Resources*
- Section 4.14, *Utilities*
- Section 5.9, *Geology and Seismicity* (includes 5.9.1 and 5.9.2)
- Section 5.12.1, *Sewer and Storm Drains*

While the development of the Transbay Program would involve effects to soil and drainage systems for tunneling related to train activity, buildout of the Redevelopment Area including Block 7, would not impact or require additional stormwater facilities (2004 EIS, p 5-81).

With regard to soil stability, the EIS concluded that by applying standard design and construction techniques all effects would be reduced to a less-than-significant level. Standard design and construction includes engineering principles and conventional construction techniques.

Potential liquefaction issues were addressed through design and construction of foundations and shoring systems; reinforcement/stabilization of soils, rapid repair contingency plans (this primarily relates to rail), design for maximum credible earthquake; and use of seismically resistant building structures (2004 EIS, p. 5-79 and 5-80).

Redevelopment of Block 7 was adequately considered within the 2004 EIS and thus no additional analysis is required.

Energy

The 2004 EIS considered the potential effects of the Transbay Program including redevelopment at Block 7 with regard to energy consumption and supply in Section 5.18, *Energy*. Based on the analysis provided in the 2004 EIS, the Redevelopment Area would require the provision of energy from current providers in the form of electricity, natural gas, gasoline, and diesel fuel. The EIS concludes, however, that the Transbay Program “would also reduce the consumption of energy by other modes as a result of diverting travel *from* auto and bus to commuter rail service” (2004 EIS, p. 5-124). From this analysis, the EIS concluded that the Redevelopment Area would have no adverse long term impact to energy capacity and resources. No additional analysis is required.

3.2.2 Socioeconomic Conditions

Employment and Income Patterns

The 2004 EIS considered the potential effects of the Transbay Program including development at Block 7 with regard to employment and income patterns in the following sections:

- Section 4.2, *Socioeconomic Characteristics*
- Section 5.3, *Socioeconomics*
- Section 5.3.4, *Redevelopment Area Alternatives*

From this analysis the EIS concluded that the Redevelopment Area would have no adverse impacts and that the Transbay Program and each alternative would provide socioeconomic benefits by intensifying the urban character of the area and resulting in a more cohesive neighborhood with a balance mix of residential and commercial uses. “Consequently, proposed development is anticipated to improve rather than to disrupt or adversely affect the character of the existing socioeconomic environment” (2004 EIS, p. 5-36). No additional analysis is required.

Demographic Character Changes and Displacement

The 2004 EIS considered the potential effects of the Transbay Program including development at Block 7 with regard to demographics and displacement in the following sections:

- Section 4.2, *Socioeconomic Characteristics*
- Section 5.1.1.4, *Neighborhood Character and Compatibility*,
- Section 5.2, *Displacements and Relocation*
- Section 5.3, *Socioeconomics*

The 2004 EIS concluded that primary impacts related to displacement were due to the development of the Transbay Terminal while the Redevelopment Area would primarily impact at grade parking lots. The 2004 EIS also required that relocation assistance programs be implemented for fair transfer of ownership (2004 EIS, p 5-34). The Proposed Action would be located on an already acquired site, and would not involve any displacement. No additional analysis is required.

3.2.3 Community Facilities and Services

Educational and Cultural Facilities

The 2004 EIS considered the potential effects of the Transbay Program including development at Block 7 with regard to community facilities, extending to schools and religious institutions in the following sections:

- Section 4.2, *Socioeconomic Characteristics*
- Section 4.4.2, *Schools*
- Section 4.4.3, *Religious Institutions*,

- Section 5.5.2, *Schools*
- Section 5.5.3, *Religious Institutions*

From this analysis, the EIS concluded that the Redevelopment Area would have no adverse long term impact to either schools or religious institutions and that the Transbay Program and each alternative would provide benefits with improved transit operations and transit-oriented development (2004 EIS, pp 5-44). Commercial, health care, and social services were generally addressed under displacement and impacts to existing development. No additional analysis is required.

Solid Waste

The 2004 EIS considered the potential effects of the Transbay Program including development at Block 7 with regard to solid waste in the following sections:

- Section 4.3.2.4, *Solid Waste Management*
- Section 5.4.4.3 *Solid Waste Management*

From this analysis, the EIS concluded that the Redevelopment Area would have no adverse long term impact to waste management due to measures required to meet Assembly Bill 939, and compliance with required City and County ordinances regarding the minimization of waste through recycling (2004 EIS, p. 5-43). No additional analysis is required.

Water Supply/Wastewater/ Sanitary Sewers

The 2004 EIS considered the potential effects of the Transbay Program including development at Block 7 with regard to water supply, wastewater and sanitary sewers in the following sections:

- Section 4.14, *Utilities*
- Section 5.12, *Utilities*

From this analysis, the EIS concluded that the Redevelopment Area would have no adverse long term impact to wastewater capacity and resources. While development of Transbay Terminal and Caltrain Downtown Extension would cause some rerouting of lines, the Transbay Program and Redevelopment Area would connect with existing systems with capacity. Additionally, the Transbay Program would not demand water in excess of amounts anticipated for the area. The 2004 EIS discusses that "... the Project would increase the demand for and use of water and energy consumption, but not in excess of the amounts expected and provided for in the area. There would be no need for major expansion of power or water facilities due to the Project." (2004 EIS, p. 5-81). No additional analysis is required.

Police, Fire, and Emergency Medical Services

The 2004 EIS considered the potential effects of the Transbay Program including development at Block 7 with regard to police, fire, and emergency medical services in the following sections:

- Section 4.3.2, *Safety and Emergency Services,*

- Section 5.4.4.2, *Transbay Redevelopment Area—Safety and emergency Services*

From this analysis, the EIS concluded that the Redevelopment Area would likely require an estimated 115 new police department officers, but that this would not require the addition of new police facilities. The analyses further concluded that there would be a need for additional fire suppression personnel as well as emergency medical staff, but that no new facilities would be required for either service. Ultimately, the EIS concluded that through user /developer fees, the Transbay Program would generate no adverse long term impact (2004 EIS, p. 5-42 and 5-43). No additional analysis is required.

Parks, Open Space, and Recreation

The 2004 EIS considered the potential effects of the Transbay Program including development at Block 7 with regard to parks, open space, and recreation in the following sections:

- Section 4.4.1, *Parklands and Recreational Facilities*
- Section 5.5.1, *Parklands*

From this analysis, the EIS concluded that the Redevelopment Area would have a beneficial effect, as new parks are proposed under the Transbay Program for the area. No additional analysis is required.

Transportation and Accessibility

The 2004 EIS considered the potential effects of the Transbay Program including development at Block 7 with regard to transportation and accessibility in Section 5.19.1 *Transit Operational Impacts*.

From this analysis, the 2004 EIS concluded that full buildout of the Redevelopment Area would result in seven intersections with adverse traffic impacts, and as such, the City may request developers to contribute to new Integrated Transportation Management Systems (ITMS) programs. However, at full buildout the Redevelopment Area component would eliminate approximately 1,950 off-street-parking spaces and result in an increase in transit usage which would defray a portion of the Transbay Program costs related to the Transbay Terminal (2005 EIS, p. S-21). The Proposed Action at Block 7 does not involve parking. Users of the site would be anticipated to utilize existing transit infrastructure and improved pedestrian facilities. No additional analysis is required.

3.2.4 Natural Features

Unique Natural Features and Water Resources

As addressed under Section 3.1.7, *Endangered Species*, and 3.1.13, *Wetlands Protection*, and Section 3.1.14, *Wild and Scenic Rivers*, the 2004 EIS addressed potential natural features and water resources within the Redevelopment Area in the following sections:

- Section 4.9, *Vegetation and Wildlife*

- Section 4.10, *Wetlands*

The EIS concludes that neither unique habitat nor water features are present onsite. Implementation of the Proposed Action would not affect water resources, nor would it increase demands on groundwater resources. No additional analysis is required.

Vegetation and Wildlife

As addressed under Section 3.1.7, *Endangered Species*, the 2004 EIS addressed potential vegetation and wildlife within the Redevelopment Area in Section 4.9, *Vegetation and Wildlife*

The EIS concludes that there is not suitable habitat or sensitive species. Block 7 was previously a parking lot and does not support sensitive vegetation and/or wildlife species. Implementation of the Proposed Action would not affect vegetation or wildlife. No additional analysis is required.

3.2.5 Greenhouse Gas

With regard to greenhouse gases, the development at Block 7 is designed to achieve the Green Point equivalent of LEED Gold certification, therefore operational impacts related to energy and greenhouse gas emissions would be minimized. As discussed under Section 3.2.3, *Community Facilities and Services*, subsection *Transportation and Accessibility*, the Redevelopment Area would involve the removal off-street parking with residents expected to rely on available multi-modal transit alternatives. As a result, emissions related to vehicle usage would be further reduced. No additional analysis is required.

3.3 Cumulative Impacts

A cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Projects within the vicinity of the Proposed Action which would contribute to the reasonably foreseeable cumulative environment include additional development under the Transbay Program. Cumulative impacts were evaluated in Section 7.3, *Cumulative Effects* of the 2004 EIS. The Proposed Action is consistent with the previously proposed redevelopment within Transbay Block 7 evaluated within the 2004 EIS as discussed in Chapter 2. As discussed in Sections 3.1 and 3.2, the 2004 EIS analysis adequately addressed environmental impacts associated with the Proposed Action. Additional air quality and noise analysis was included due to updated environmental and regulatory conditions; however, the reevaluation did not result in new, significant impacts in comparison to the 2004 EIS. Based on these findings, the Proposed Action is not anticipated to result in new significant cumulative impacts, in comparison to those disclosed in the 2004 EIS.

3.4 No Action Alternative

While the 2004 EIS considered a No Project Alternative for the entire Transbay Program and two development alternatives for the Redevelopment Area, as described in Chapter 2 above, this

section provides additional consideration of a No Action alternative to the Proposed Action. The No Action alternative would mean that the proposed Section 8 vouchers are not used for affordable housing at Transbay Block 7. It is still likely that all 120 units would be developed and occupied due to housing needs within the City. Thus the impacts of the No Action Alternative would be similar to those discussed for the Proposed Action.

CHAPTER 4

Coordination and List of Preparers

4.1 Agencies

City and County of San Francisco Mayor's Office of Housing

Eugene Flannery, Environmental Compliance Manager

4.2 Consultants

EIS Preparation

ESA

Project Management Team

Jennifer Wade, Project Director

Jennifer Brown, Project Manager

Technical Analysts

Chris Sanchez, Air Quality and Noise

Stan Armstrong, Air Quality and Noise

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Appendix A

Transbay Block 7 CalEEmod Operation

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TransBay Block 7 - Operation Only - San Francisco County, Annual

TransBay Block 7 - Operation Only
San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	24.00	Dwelling Unit	0.63	24,000.00	69

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	4.6	Precipitation Freq (Days)	64
Climate Zone	5			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Woodstoves - Assumed no wood burning fireplaces or wood stoves.

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	4.08	0.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblWoodstoves	NumberCatalytic	0.48	0.00
tblWoodstoves	NumberNoncatalytic	0.48	0.00

TransBay Block 7 - Operation Only - San Francisco County, Annual

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	0.2489	0.7624	0.5134	8.1000e-004	9.6200e-003	0.0498	0.0594	2.7500e-003	0.0460	0.0488	0.0000	75.0906	75.0906	0.0192	0.0000	75.5695
Maximum	0.2489	0.7624	0.5134	8.1000e-004	9.6200e-003	0.0498	0.0594	2.7500e-003	0.0460	0.0488	0.0000	75.0906	75.0906	0.0192	0.0000	75.5695

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	0.2489	0.7624	0.5134	8.1000e-004	9.6200e-003	0.0498	0.0594	2.7500e-003	0.0460	0.0488	0.0000	75.0906	75.0906	0.0192	0.0000	75.5694
Maximum	0.2489	0.7624	0.5134	8.1000e-004	9.6200e-003	0.0498	0.0594	2.7500e-003	0.0460	0.0488	0.0000	75.0906	75.0906	0.0192	0.0000	75.5694

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-12-2017	7-11-2017	0.4577	0.4577
2	7-12-2017	9-30-2017	0.5477	0.5477
		Highest	0.5477	0.5477

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1162	2.4600e-003	0.1793	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	0.7405	0.7405	2.9000e-004	1.0000e-005	0.7503
Energy	1.4800e-003	0.0127	5.3800e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	46.2188	46.2188	1.7100e-003	5.6000e-004	46.4296
Mobile	0.0503	0.1984	0.5483	1.6900e-003	0.1350	2.7100e-003	0.1377	0.0364	2.5600e-003	0.0390	0.0000	154.9092	154.9092	7.2500e-003	0.0000	155.0905
Waste						0.0000	0.0000		0.0000	0.0000	2.2410	0.0000	2.2410	0.1324	0.0000	5.5520
Water						0.0000	0.0000		0.0000	0.0000	0.4961	3.4652	3.9613	0.0511	1.2400e-003	5.6072
Total	0.1679	0.2135	0.7329	1.7800e-003	0.1350	4.7400e-003	0.1398	0.0364	4.5900e-003	0.0410	2.7371	205.3337	208.0708	0.1928	1.8100e-003	213.4297

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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	0.1162	2.4600e-003	0.1793	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	0.7405	0.7405	2.9000e-004	1.0000e-005	0.7503
Energy	1.4800e-003	0.0127	5.3800e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	46.2188	46.2188	1.7100e-003	5.6000e-004	46.4296
Mobile	0.0503	0.1984	0.5483	1.6900e-003	0.1350	2.7100e-003	0.1377	0.0364	2.5600e-003	0.0390	0.0000	154.9092	154.9092	7.2500e-003	0.0000	155.0905
Waste						0.0000	0.0000		0.0000	0.0000	2.2410	0.0000	2.2410	0.1324	0.0000	5.5520
Water						0.0000	0.0000		0.0000	0.0000	0.4961	3.4652	3.9613	0.0511	1.2400e-003	5.6072
Total	0.1679	0.2135	0.7329	1.7800e-003	0.1350	4.7400e-003	0.1398	0.0364	4.5900e-003	0.0410	2.7371	205.3337	208.0708	0.1928	1.8100e-003	213.4297

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/12/2017	4/25/2017	5	10	
2	Site Preparation	Site Preparation	4/26/2017	4/26/2017	5	1	
3	Grading	Grading	4/27/2017	4/28/2017	5	2	
4	Building Construction	Building Construction	4/29/2017	9/15/2017	5	100	
5	Paving	Paving	9/16/2017	9/22/2017	5	5	
6	Architectural Coating	Architectural Coating	9/23/2017	9/29/2017	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 48,600; Residential Outdoor: 16,200; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	17.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.0500e-003	0.0525	0.0396	6.0000e-005		3.6600e-003	3.6600e-003		3.4900e-003	3.4900e-003	0.0000	5.3493	5.3493	1.0500e-003	0.0000	5.3755
Total	6.0500e-003	0.0525	0.0396	6.0000e-005		3.6600e-003	3.6600e-003		3.4900e-003	3.4900e-003	0.0000	5.3493	5.3493	1.0500e-003	0.0000	5.3755

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	2.0000e-004	1.5000e-004	1.5300e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.4123	0.4123	1.0000e-005	0.0000	0.4126
Total	2.0000e-004	1.5000e-004	1.5300e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.4123	0.4123	1.0000e-005	0.0000	0.4126

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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					
Off-Road	6.0500e-003	0.0525	0.0396	6.0000e-005		3.6600e-003	3.6600e-003		3.4900e-003	3.4900e-003	0.0000	5.3492	5.3492	1.0500e-003	0.0000	5.3755
Total	6.0500e-003	0.0525	0.0396	6.0000e-005		3.6600e-003	3.6600e-003		3.4900e-003	3.4900e-003	0.0000	5.3492	5.3492	1.0500e-003	0.0000	5.3755

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	2.0000e-004	1.5000e-004	1.5300e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.4123	0.4123	1.0000e-005	0.0000	0.4126
Total	2.0000e-004	1.5000e-004	1.5300e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.4123	0.4123	1.0000e-005	0.0000	0.4126

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3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	5.2600e-003	2.1800e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569
Total	4.3000e-004	5.2600e-003	2.1800e-003	0.0000	2.7000e-004	2.4000e-004	5.1000e-004	3.0000e-005	2.2000e-004	2.5000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0206	0.0206	0.0000	0.0000	0.0206
Total	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0206	0.0206	0.0000	0.0000	0.0206

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3.3 Site Preparation - 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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	5.2600e-003	2.1800e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569
Total	4.3000e-004	5.2600e-003	2.1800e-003	0.0000	2.7000e-004	2.4000e-004	5.1000e-004	3.0000e-005	2.2000e-004	2.5000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0206	0.0206	0.0000	0.0000	0.0206
Total	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0206	0.0206	0.0000	0.0000	0.0206

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3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	0.0105	7.9200e-003	1.0000e-005		7.3000e-004	7.3000e-004		7.0000e-004	7.0000e-004	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751
Total	1.2100e-003	0.0105	7.9200e-003	1.0000e-005	7.5000e-004	7.3000e-004	1.4800e-003	4.1000e-004	7.0000e-004	1.1100e-003	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751

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	4.0000e-005	3.0000e-005	3.1000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0825	0.0825	0.0000	0.0000	0.0825
Total	4.0000e-005	3.0000e-005	3.1000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0825	0.0825	0.0000	0.0000	0.0825

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3.4 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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	0.0105	7.9200e-003	1.0000e-005		7.3000e-004	7.3000e-004		7.0000e-004	7.0000e-004	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751
Total	1.2100e-003	0.0105	7.9200e-003	1.0000e-005	7.5000e-004	7.3000e-004	1.4800e-003	4.1000e-004	7.0000e-004	1.1100e-003	0.0000	1.0699	1.0699	2.1000e-004	0.0000	1.0751

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	4.0000e-005	3.0000e-005	3.1000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0825	0.0825	0.0000	0.0000	0.0825
Total	4.0000e-005	3.0000e-005	3.1000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0825	0.0825	0.0000	0.0000	0.0825

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3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0641	0.6380	0.4035	5.7000e-004		0.0430	0.0430		0.0395	0.0395	0.0000	52.8851	52.8851	0.0162	0.0000	53.2902
Total	0.0641	0.6380	0.4035	5.7000e-004		0.0430	0.0430		0.0395	0.0395	0.0000	52.8851	52.8851	0.0162	0.0000	53.2902

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	9.1000e-004	0.0230	7.6900e-003	4.0000e-005	9.8000e-004	1.9000e-004	1.1700e-003	2.8000e-004	1.8000e-004	4.6000e-004	0.0000	4.2770	4.2770	5.7000e-004	0.0000	4.2912
Worker	3.3400e-003	2.4700e-003	0.0260	8.0000e-005	6.7200e-003	5.0000e-005	6.7700e-003	1.7900e-003	5.0000e-005	1.8300e-003	0.0000	7.0086	7.0086	2.0000e-004	0.0000	7.0136
Total	4.2500e-003	0.0254	0.0336	1.2000e-004	7.7000e-003	2.4000e-004	7.9400e-003	2.0700e-003	2.3000e-004	2.2900e-003	0.0000	11.2856	11.2856	7.7000e-004	0.0000	11.3048

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3.5 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	0.0641	0.6380	0.4035	5.7000e-004		0.0430	0.0430		0.0395	0.0395	0.0000	52.8850	52.8850	0.0162	0.0000	53.2901
Total	0.0641	0.6380	0.4035	5.7000e-004		0.0430	0.0430		0.0395	0.0395	0.0000	52.8850	52.8850	0.0162	0.0000	53.2901

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	9.1000e-004	0.0230	7.6900e-003	4.0000e-005	9.8000e-004	1.9000e-004	1.1700e-003	2.8000e-004	1.8000e-004	4.6000e-004	0.0000	4.2770	4.2770	5.7000e-004	0.0000	4.2912
Worker	3.3400e-003	2.4700e-003	0.0260	8.0000e-005	6.7200e-003	5.0000e-005	6.7700e-003	1.7900e-003	5.0000e-005	1.8300e-003	0.0000	7.0086	7.0086	2.0000e-004	0.0000	7.0136
Total	4.2500e-003	0.0254	0.0336	1.2000e-004	7.7000e-003	2.4000e-004	7.9400e-003	2.0700e-003	2.3000e-004	2.2900e-003	0.0000	11.2856	11.2856	7.7000e-004	0.0000	11.3048

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3.6 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6300e-003	0.0249	0.0184	3.0000e-005		1.5200e-003	1.5200e-003		1.4100e-003	1.4100e-003	0.0000	2.4610	2.4610	6.8000e-004	0.0000	2.4781
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.6300e-003	0.0249	0.0184	3.0000e-005		1.5200e-003	1.5200e-003		1.4100e-003	1.4100e-003	0.0000	2.4610	2.4610	6.8000e-004	0.0000	2.4781

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.3000e-004	1.3700e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3710	0.3710	1.0000e-005	0.0000	0.3713
Total	1.8000e-004	1.3000e-004	1.3700e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3710	0.3710	1.0000e-005	0.0000	0.3713

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3.6 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	2.6300e-003	0.0249	0.0184	3.0000e-005		1.5200e-003	1.5200e-003		1.4100e-003	1.4100e-003	0.0000	2.4610	2.4610	6.8000e-004	0.0000	2.4781
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.6300e-003	0.0249	0.0184	3.0000e-005		1.5200e-003	1.5200e-003		1.4100e-003	1.4100e-003	0.0000	2.4610	2.4610	6.8000e-004	0.0000	2.4781

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.3000e-004	1.3700e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3710	0.3710	1.0000e-005	0.0000	0.3713
Total	1.8000e-004	1.3000e-004	1.3700e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3710	0.3710	1.0000e-005	0.0000	0.3713

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3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1690					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-004	5.4600e-003	4.6700e-003	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6400
Total	0.1698	5.4600e-003	4.6700e-003	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6400

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0618	0.0618	0.0000	0.0000	0.0619
Total	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0618	0.0618	0.0000	0.0000	0.0619

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3.7 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	0.1690					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-004	5.4600e-003	4.6700e-003	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6400
Total	0.1698	5.4600e-003	4.6700e-003	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6400

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0618	0.0618	0.0000	0.0000	0.0619
Total	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0618	0.0618	0.0000	0.0000	0.0619

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0503	0.1984	0.5483	1.6900e-003	0.1350	2.7100e-003	0.1377	0.0364	2.5600e-003	0.0390	0.0000	154.9092	154.9092	7.2500e-003	0.0000	155.0905
Unmitigated	0.0503	0.1984	0.5483	1.6900e-003	0.1350	2.7100e-003	0.1377	0.0364	2.5600e-003	0.0390	0.0000	154.9092	154.9092	7.2500e-003	0.0000	155.0905

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	159.60	153.36	140.64	360,299	360,299
Total	159.60	153.36	140.64	360,299	360,299

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.607141	0.042057	0.190386	0.086590	0.015934	0.004793	0.026379	0.008601	0.004262	0.005315	0.007178	0.000921	0.000443

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	31.5678	31.5678	1.4300e-003	3.0000e-004	31.6915
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	31.5678	31.5678	1.4300e-003	3.0000e-004	31.6915
NaturalGas Mitigated	1.4800e-003	0.0127	5.3800e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6510	14.6510	2.8000e-004	2.7000e-004	14.7381
NaturalGas Unmitigated	1.4800e-003	0.0127	5.3800e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6510	14.6510	2.8000e-004	2.7000e-004	14.7381

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	274550	1.4800e-003	0.0127	5.3800e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6510	14.6510	2.8000e-004	2.7000e-004	14.7381
Total		1.4800e-003	0.0127	5.3800e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6510	14.6510	2.8000e-004	2.7000e-004	14.7381

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	274550	1.4800e-003	0.0127	5.3800e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6510	14.6510	2.8000e-004	2.7000e-004	14.7381
Total		1.4800e-003	0.0127	5.3800e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6510	14.6510	2.8000e-004	2.7000e-004	14.7381

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	108513	31.5678	1.4300e-003	3.0000e-004	31.6915
Total		31.5678	1.4300e-003	3.0000e-004	31.6915

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	108513	31.5678	1.4300e-003	3.0000e-004	31.6915
Total		31.5678	1.4300e-003	3.0000e-004	31.6915

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1162	2.4600e-003	0.1793	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	0.7405	0.7405	2.9000e-004	1.0000e-005	0.7503
Unmitigated	0.1162	2.4600e-003	0.1793	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	0.7405	0.7405	2.9000e-004	1.0000e-005	0.7503

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	0.0169					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0937					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.0000e-005	3.9000e-004	1.7000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4494	0.4494	1.0000e-005	1.0000e-005	0.4521
Landscaping	5.4800e-003	2.0700e-003	0.1791	1.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	0.2911	0.2911	2.9000e-004	0.0000	0.2982
Total	0.1162	2.4600e-003	0.1793	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	0.7405	0.7405	3.0000e-004	1.0000e-005	0.7503

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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	0.0169					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0937					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.0000e-005	3.9000e-004	1.7000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4494	0.4494	1.0000e-005	1.0000e-005	0.4521
Landscaping	5.4800e-003	2.0700e-003	0.1791	1.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	0.2911	0.2911	2.9000e-004	0.0000	0.2982
Total	0.1162	2.4600e-003	0.1793	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	0.7405	0.7405	3.0000e-004	1.0000e-005	0.7503

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.9613	0.0511	1.2400e-003	5.6072
Unmitigated	3.9613	0.0511	1.2400e-003	5.6072

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.5637 / 0.985809	3.9613	0.0511	1.2400e-003	5.6072
Total		3.9613	0.0511	1.2400e-003	5.6072

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.5637 / 0.985809	3.9613	0.0511	1.2400e-003	5.6072
Total		3.9613	0.0511	1.2400e-003	5.6072

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.2410	0.1324	0.0000	5.5520
Unmitigated	2.2410	0.1324	0.0000	5.5520

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	11.04	2.2410	0.1324	0.0000	5.5520
Total		2.2410	0.1324	0.0000	5.5520

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	11.04	2.2410	0.1324	0.0000	5.5520
Total		2.2410	0.1324	0.0000	5.5520

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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TransBay Block 7 - Operation Only - San Francisco County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Appendix B

Transbay Block 7 HUD DNL Calculator

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DNL Calculator

The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the [Day/Night Noise Level Calculator Electronic Assessment Tool Overview \(/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/\)](#).

Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

DNL Calculator

Site ID	Trans Bay Block 7
Record Date	04/18/2017
User's Name	Stan Armstrong

Road # 1 Name:	Fremont Street
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Road #1

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	55	55	55
Distance to Stop Sign	150	150	150
Average Speed	25	25	25
Average Daily Trips (ADT)	40369	1700	425
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	61.9	58.2	73
Calculate Road #1 DNL	73.4	Reset	

Road # 2 Name:	Beale Street
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Road #2

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	55	55	55
Distance to Stop Sign	150	150	150
Average Speed	25	25	25
Average Daily Trips (ADT)	14144	506	140

Average Daily Trips (ADT)	14144	330	143
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	57.4	53.6	68.4
Calculate Road #2 DNL	68.9	Reset	

Road # 3 Name:

Road #3

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	215	215	215
Distance to Stop Sign	150	150	150
Average Speed	25	25	25
Average Daily Trips (ADT)	7944	334	84
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	46	42.2	57
Calculate Road #3 DNL	57.5	Reset	

Road # 4 Name:

Road #4

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	215	215	215
Distance to Stop Sign	150	150	150
Average Speed	25	25	25
Average Daily Trips (ADT)	13693	577	144
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	48.4	44.6	59.4
Calculate Road #4 DNL	59.9	Reset	

Airport Noise Level

Loud Impulse Sounds? Yes No

Combined DNL for all Road and Rail sources	74.9
Combined DNL including Airport	N/A
Site DNL with Loud Impulse Sound	

Calculate

Mitigation Options

If your site DNL is in Excess of 65 decibels, your options are:

- **No Action Alternative:** Cancel the project at this location
- **Other Reasonable Alternatives:** Choose an alternate site
- **Mitigation**
 - Contact your Field or Regional Environmental Officer (</programs/environmental-review/hud-environmental-staff-contacts/>)
 - Increase mitigation in the building walls (only effective if no outdoor, noise sensitive areas)
 - Reconfigure the site plan to increase the distance between the noise source and noise-sensitive uses
 - Incorporate natural or man-made barriers. See *The Noise Guidebook* (</resource/313/hud-noise-guidebook/>)
 - Construct noise barrier. See the **Barrier Performance Module** (</programs/environmental-review/bpm-calculator/>)

Tools and Guidance

[Day/Night Noise Level Assessment Tool User Guide \(/resource/3822/day-night-noise-level-assessment-tool-user-guide/\)](/resource/3822/day-night-noise-level-assessment-tool-user-guide/)

[Day/Night Noise Level Assessment Tool Flowcharts \(/resource/3823/day-night-noise-level-assessment-tool-flowcharts/\)](/resource/3823/day-night-noise-level-assessment-tool-flowcharts/)

