

## 5.6 GREENHOUSE GAS EMISSIONS

### INTRODUCTION

This section discusses the Project’s impacts on climate change and greenhouse gas (GHG) emissions, both during construction and operation. Information in this section is primarily drawn from the *Air Quality and Greenhouse Gas Assessment* prepared for the Project (see **Appendix C** of this Draft Environmental Impact Report (EIR)). Additionally, information in this section is based on VMT data prepared by Kittelson & Associates in 2018. VMT data for the Project is available on file with the City of Dublin at 100 Civic Plaza, Dublin, California. Air Quality impacts are covered in **Section 5.2, Air Quality**.

### Scoping Issues Addressed

No public or agency comments related to climate change or GHG emissions were received during the public scoping period for this Draft EIR.

### REGULATORY SETTING

#### Federal

##### *U.S. Environmental Protection Agency Endangerment Finding*

In the Supreme Court decision in *Massachusetts v. U.S. Environmental Protection Agency* (EPA) (2007), the US Supreme Court ruled that GHGs meet the definition of air pollutants under the Clean Air Act. Given this, the Supreme Court ruled that GHGs must be regulated if such gases could be reasonably anticipated to endanger public health or welfare. Following to Court’s ruling, the U.S. EPA finalized an endangerment finding in December 2009. The Endangerment finding stated that the following GHGs constituted a threat to public health: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (NO<sub>x</sub>), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>).

#### State

Agencies at the international, national, State, and local levels are considering strategies to control emissions of gases that contribute to global warming. There is no comprehensive strategy that is being implemented on a global scale that addresses climate change; however, in California a multi-agency “Climate Action Team,” has identified a range of strategies.

##### *Assembly Bill 32*

Assembly Bill 32 (AB 32), also known as the California Global Warming Solutions Act of 2006, was the first program in the county to take a comprehensive, long-term approach to addressing climate change. AB 32 requires the state to reduce its GHG emissions to 1990 levels by 2020 – a reduction of approximately 15 percent below emissions expected under a “business as usual” scenario. Due to the serious threat global warming poses to economic well-being, public health, natural resources, and the environment of California, the California Air Resources Board (CARB) must adopt regulations to achieve the highest and most cost-effective GHG emission reductions feasible.

*Senate Bill 375*

In September 30, 2008, the Governor signed Senate Bill 375 (SB 375) into legislation. SB 375 requires CARB to set regional targets for reducing GHGs. This includes the maintenance of guidelines for travel demand models used in the development of regional transportation plans (RTPs). RTPs are established by metropolitan planning organizations (MPOs). The core provision of the SB 375 requires regional transportation agencies to develop a Sustainable Communities Strategy (SCS) as part of its RTP. The SCS must outline the region's plan for combining transportation resources, such as roads and mass transit, with a realistic land use pattern, in order to meet the state target for reducing GHG emissions.

*Plan Bay Area*

As discussed above, SB 375 requires the Bay Area regional planning agencies to establish a SCS to reduce GHG emissions through land use and transportation planning. The primary GHG reduction called for in the SCS is reduced tailpipe emissions from light-duty vehicles, in other words, reduced emissions from traffic. Plan Bay Area 2040 is the most recent version of the SCS and includes the implementation of transportation projects and a Climate Initiatives Program that together would result in GHG emission reductions from light-duty vehicles that meet the region's GHG reduction targets, per SB 375. The Project, being part of the 2019 Transportation Improvement Program (TIP) is part of the Plan Bay Area 2040 transportation network.

*Executive Order B-30-15 and Senate Bill 350*

In April 2015, the Governor issued Executive Order B-30-15, which established a GHG reduction target of 40 percent below 1990 levels by 2030. SB 350 advanced these goals through two measures. First, the law increases the renewable power goal from 33 percent renewables by 2020 to 50 percent by 2030. Second, the law requires the California Energy Commission (CEC) to establish annual targets to double energy efficiency in buildings by 2030. The law also requires the California Public Utilities Commission (CPUC) to direct electric utilities to establish annual efficiency targets and implement demand-reduction measures to achieve this goal.

*Senate Bill 32*

In September 2016, the Governor signed Senate Bill 32 (SB 32) into legislation, which builds on AB 32 and requires the state to cut GHG emissions to 40 percent below 1990 levels by 2030. With SB 32, the Legislature also passed Assembly Bill 197, which provides additional direction for updating the Climate Change Scoping Plan to meet the 2030 GHG reduction target codified in SB 32. CARB published California's 2017 Climate Change Scoping Plan in November 2017 (2017 Scoping Plan). The new Scoping Plan establishes a strategy that will reduce GHG emissions in California to meet the 2030 target. Key features of this plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings;
- Develop fuels with an 18-percent reduction in carbon intensity;

- Develop more high-density, transit oriented housing;
- Develop walkable and bikeable communities;
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce “super pollutants” by reducing methane and hydrofluorocarbons or HFCs by 40 percent.

#### *State Implementation Plan Conformity*

Federal clean air laws require areas with unhealthy levels of air pollutants to develop plans, known as State Implementation Plans (SIPs). SIPs are comprehensive plans that describe how an area will attain National Ambient Air Quality Standards. Transportation projects are typically evaluated on a sector-wide basis for air quality and GHG emission effects, in response to federal requirements. The Federal Clean Air Act outlines requirements for ensuring that federal transportation plans, programs, and projects are consistent with the purpose of the SIP to reduce transportation-related emissions, including GHGs.

The Metropolitan Transportation Commission (MTC) is the transportation agency for the nine-county San Francisco Bay Area, and releases a TIP that lists near-term transportation projects that involve federal funds or agencies, and regionally significant state- and locally-funded projects. The TIP is evaluated for conformity with the SIP; a conformity finding demonstrates that the total emissions projected for the TIP are within the emissions budgets established by the SIP. The Federal Highway Administration and Federal Transit Administration approved the 2019 TIP in December 2018. The Project is listed in the 2019 TIP (Project TIP ID ALA150003).<sup>1</sup>

#### **Regional**

The Bay Area Air Quality Management District (BAAQMD) regulates air quality in the San Francisco Bay Area Air Basin. BAAQMD is responsible for developing and enforcing air quality rules in the air district, and is responsible for planning for the attainment of the state’s ambient air quality standards. BAAQMD inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law. It also reviews analyses prepared for projects under the California Environmental Quality Act (CEQA) and has published the *CEQA Air Quality Guidelines* (BAAQMD Guidelines) for use in evaluation of air quality and GHG impacts.

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<sup>1</sup> Metropolitan Transportation Commission and Association of Bay Area Governments. 2016. Plan Bay Area 2040. Amended March 2018.

## Local

This section contains local regulatory plans, policies, and goals as they pertain to GHG emissions. Refer to **Chapter 5.2, Air Quality**, for local regulatory plans related to air quality.

### *City of Dublin*

#### City of Dublin General Plan

The City of Dublin (Dublin)'s General Plan contains a variety of goals and policies that indirectly support the reduction of GHG emissions. These include transit-focused and multi-modal policies (see **Section 5.14, Transportation and Traffic**) and energy conservation (see **Section 5.16, Energy Conservation**).

#### City of Dublin Climate Action Plan

Dublin adopted its first Climate Action Plan in November 2010. The original Climate Action Plan established a GHG emissions reduction target of 20 percent from the original 2020 GHG emissions forecast. In 2013, Dublin issued an update to the Climate Action Plan. Dublin is currently developing Climate Action Plan 2.0, which, like its predecessors, will install goals and strategies through which the City can achieve its GHG emission reduction targets. Programs, goals, and policies in the current Climate Action Plan that are relevant to the project include:

- A.1.10      Bicycle and Pedestrian Master Plan. The City's Bicycle and Pedestrian Master Plan includes polices that include the continued development of successful bicycle and pedestrian trail corridors, improved bicycle access to parks and open space areas, improved bicycle lanes and/or routes on several key cross-city corridors, bikeways on key freeway crossings, the development of education and enforcement programs, and improvements to the City's Bicycle Parking Ordinance. The project includes bicycle and pedestrian pathways along the entire length of the roadway.
- A.1.12      City Design Strategy. The City's design strategy has been incorporated into the City's General Plan as part of the Community Design and Sustainability Element. The goals that relate to the project include promoting walking and cycling by providing safe, appealing, and comfortable street environments that support public health by reducing pedestrian injuries and encouraging daily physical activity. As previously mentioned, the project includes bicycle and pedestrian pathways along the entire length of the roadway.
- A.2.5      LED Streetlight Specifications for New Projects. The project would be required to meet the City's LED streetlight specification that requires all future development projects to install LED streetlights.

*Alameda County*

Alameda County General Plan, Community Climate Action Plan

The Alameda County General Plan, Community Climate Action Plan contains the following action areas and measures which frame Alameda County (County)'s GHG reduction goals and provide a GHG reduction potential for each respective measure.

Transportation Action Area	Identify ways to reduce automobile emissions, including improving pedestrian and bicycle infrastructure, enhancing public transit service, and supporting reductions in single-occupancy vehicle use.
Measure T-2	Develop appropriate bicycle infrastructure for high traffic intersections and corridors
Measure T-6	Improve pedestrian connectivity and route choice in neighborhoods

*City of Livermore*

City of Livermore General Plan

The City of Livermore (Livermore)'s General Plan contains the following goals, objectives, and policies relating to GHGs:

Goal CLI-1	By 2020, the City of Livermore shall seek to reduce greenhouse gas emissions under the control of the City to a level 15% less than 2008 levels in order to support State implementation of the Global Warming Solution Act of 2006 (AB 32).
Policy P1	Climate Action Plan - The City will prepare and adopt a Climate Action Plan (CAP) by 2011. The CAP shall include an inventory of the 2008 level of GHG emissions within the City. The CAP shall set out specific policies and actions to be undertaken by the City to reduce GHG emissions under the control of the City to a level 15% less than 2008 conditions in order to support State implementation of AB 32. The policies and actions will include incentives, actions, and requirements to reduce the City's GHG emissions, the GHG emissions of the private sector, and actions that the City will take in concert with public agencies, the private sector, and other stakeholders to reduce GHG emissions. Development of the CAP will include a public and stakeholder process.

City of Livermore Climate Action Plan

In November 2012, Livermore adopted its Climate Action Plan, which outlines strategies and activities that would support the reduction of Livermore's GHG emissions. Consistent with applicable AB 32 targets, the Climate Action Plan includes specific incentives, actions, and

requirements to reduce GHGs produced by Livermore agencies, private businesses, and public agencies. The Climate Action Plan aims to reduce GHG emissions to 15 percent below 2008 conditions by 2020. The following actions from the Climate Action Plan are relevant to the project:

- On-Road 4      Traffic Signal Synchronization. Under this measure, the City will improve travel speed by enhanced signal synchronization. This measure would reduce idling time for vehicles traveling on City roads. Traffic signals with the proposed project would be synchronized to meet optimum traffic flow projections.
  
- On-Road 5      Bicycles and Pedestrian Improvements. This measure includes enhancements to the city's bike and pedestrian network that provides facilities for bicycle commuters, encouraging bicycling for short and medium-length trips. The project includes bicycle and pedestrian pathways along the entire length of the roadway.

## EXISTING CONDITIONS

Unlike emissions of air pollutants, which have local or regional impacts, emissions of GHGs have a broader, global impact. Therefore, there is not a defined geographic study area for GHG emissions.

### **Climate Change and Greenhouse Gasses**

This section provides a general discussion of global climate change and focuses on emissions from human activities that alter the chemical composition of the atmosphere. The discussion on global climate change and GHG emissions is based in part upon the California Global Warming Solutions Act of 2006 (AB 32) and research, information, and analysis completed by the International Panel on Climate Change (IPCC), the US EPA, and CARB.

Global climate change is the observed increase in the average temperature of the earth's atmosphere and oceans. Other substantial changes in climate over time, such as wind patterns, precipitation, and storms are also attributed to climate change. Climate change is triggered by both atmospheric gases such as CO<sub>2</sub>, CH<sub>4</sub>, and NO<sub>x</sub>. These gases allow sunlight into the earth's atmosphere, but prevent heat from escaping from the earth's atmosphere, thus altering the earth's energy balance. This phenomenon is known as the greenhouse effect.

Naturally occurring GHGs include water vapor, CO<sub>2</sub>, CH<sub>4</sub>, NO<sub>x</sub>, and ozone. Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also GHGs, but are for the most part solely a product of industrial activities. GHGs from human activities are primarily generated by the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors.

Impacts to California's climate and environment induced by climate change include shifting precipitation patterns, increasing temperatures, increasing severity and duration of wildfires, earlier melting of snow pack, and effects on habitats and biodiversity. In addition, sea levels along the California coast have risen up to seven inches over the last century, and average annual temperatures are increasing. These and other effects will likely intensify in the coming decades and significantly impact the state's public health, natural and manmade infrastructure, and ecosystems.

## National and Statewide Greenhouse Gas Emissions Inventory

GHG emissions in the US totaled approximately 6,511 million metric tons (MMT) of carbon dioxide equivalent (CO<sub>2</sub>E) in 2016.<sup>2</sup> Overall, total emissions nationwide increased by 2.4 percent from 1999 to 2016. However, national emissions decreased from 2015 to 2016 by 1.9 percent.<sup>3</sup> This decrease is attributed to two factors: 1) the replacement of coal with natural gas and other energy sources that do not contain fossil fuels, and 2) changes in demand for energy.

In 2016, 1,809 MMT of CO<sub>2</sub>E were burned to support the demand for electric power across the country. Electric power is the largest fossil-fuel consuming sector, followed by the transportation sector, which burned 1,783 MMT of CO<sub>2</sub>E in 2016. According to CARB's California Greenhouse Gas Inventory, the state produced a total of 440.4 MMT of CO<sub>2</sub>E in 2015. Within the state, the transportation sector was the largest source of GHG emissions in 2016, accounting for 39 percent of the state's GHG inventory. GHG emissions from the transportation sector are predominantly composed of emissions from combustion of fuels sold in-state that are used by on-road and off-road vehicles, aviation, rail, and water-borne vehicles.<sup>4</sup> Unregulated statewide GHG emissions for the year 2020 will be approximately 500 MMT of CO<sub>2</sub>E. These projections are indicative of the business-as-usual emissions, in the absence of any GHG reduction targets.<sup>5</sup>

## Regional and Local Greenhouse Gas Emissions

As described above, the Federal Highway Administration and Federal Transit Administration approved the 2019 TIP in December 2018, finding that the TIP was in conformity with the SIP. The Project is listed in the 2019 TIP (Project TIP ID ALA150003).<sup>6</sup> Therefore, GHG emissions from the Project have been included in a regional plan (TIP) which was found to be consistent with statewide goals for GHG reduction.

According to Dublin's Climate Action Plan Update, in 2015 roughly 57 percent of total GHG emissions in Dublin are attributed to the transportation sector. Up to 18 percent of GHG emissions are from the commercial and industrial uses, roughly 19 percent from the residential sector, and the remaining 6 percent is attributable to solid waste and water services. Wastewater was not included in the inventory because it is not treated within Dublin's boundaries.

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<sup>2</sup> US EPA. 2019. Overview of Greenhouse Gasses. Available at <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>. Accessed January 2019.

<sup>3</sup> US EPA. 2018. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016. Available at [https://www.epa.gov/sites/production/files/2018-01/documents/2018\\_complete\\_report.pdf](https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf). Accessed January 2019.

<sup>4</sup> CARB. 2018. California Greenhouse Gas Emissions for 2000 to 2016. Available at [https://www.arb.ca.gov/cc/inventory/pubs/reports/2000\\_2016/ghg\\_inventory\\_trends\\_00-16.pdf](https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf). Accessed January 2019.

<sup>5</sup> CARB. 2019. 2020 Business-as-Usual (BAU) Emissions Projection. Available at <https://www.arb.ca.gov/cc/inventory/data/bau.htm>. Accessed January 2019.

<sup>6</sup> Metropolitan Transportation Commission and Association of Bay Area Governments. 2016. Plan Bay Area 2040. Amended March 2018.

The County's Community Climate Action Plan for Unincorporated Areas established baseline GHG emission levels in 2005, and projected how emissions would change by 2020. The Climate Action Plan anticipated that in 2020 over 59 percent of GHG emissions would come from the transportation sector, and approximately 19 percent would be generated from residential energy consumption. Commercial and industrial uses were projected to comprise approximately 14 percent of GHG emissions in the County, and the remainder would be generated by water services and solid waste.

Based on information provided in Livermore's Climate Action Plan, it was estimated that in 2008 the transportation sector would be responsible for 35 percent of GHGs, followed by residential energy consumption (30 percent of all GHGs). Commercial and industrial uses were anticipated to comprise 25 percent of GHG emissions, and the remaining 10 percent of emissions would be attributable to solid waste, water services, and wastewater treatment. The Climate Action Plan also projected that by 2020, these percentages would shift to: transportation – 37 percent, residential energy – 28 percent, commercial and industrial uses – 26 percent, and the remaining 10 percent would remain the same between 2008 and 2020.

## IMPACTS AND MITIGATION MEASURES

### Significance Criteria

The following significant criteria for air quality were derived from the Environmental Checklist in the State CEQA Guidelines Appendix G. The Project would have a significant impacts if it would:

- A. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment

and/or

- B. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were most recently updated in 2017.

BAAQMD does not have an adopted significance thresholds for construction-related GHG emissions. However, BAAQMD recommends the Lead Agency should quantify and disclose GHG emissions that would occur during construction, and make a determination on the significance of these construction-generated GHG emissions in relation to meeting AB 32 GHG reduction goals. Lead agencies are encouraged to incorporate best management practices to reduce GHG emissions during construction, as feasible and applicable.



BAAQMD’s approach to developing thresholds of significance for operational GHG emissions is based on identifying the emissions level for which a project would not be expected to substantially conflict with a qualified GHG reduction plan. BAAQMD provides two avenues for making this determination: analysis to determine if a project would be consistent with a qualified GHG reduction strategy, and/or comparison against a quantitative threshold (often referred to as a “bright line threshold”).

When using the consistency approach, a project must be compared to a qualified plan that addresses the project, such as a local Climate Action Plan. If the project is consistent, it can be presumed that the project would not have significant GHG emission impacts. When using the quantitative threshold, if a project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact and would be considered significant at a project level. The quantitative thresholds discussed below are recommended for use with land use projects. However, as BAAQMD has not established GHG emission thresholds for project-level analysis of transportation projects, these quantitative thresholds are employed as one of the significance criteria used in this analysis, as the threshold provides a basis by which to contextualize project-specific GHG emissions from the Project.

The quantitative (bright line) thresholds established by BAAQMD are as follows:

- 1,100 metric tons of CO<sub>2</sub>E per year; or
- 4.6 metric tons of CO<sub>2</sub>E per service population per year (residents and employees)

BAAQMD’s threshold of 1,100 metric tons was developed based on meeting the 2020 GHG targets set in AB 32. As operation of the Project would begin beyond 2020, a threshold that addresses a future GHG reduction target is appropriate. Although BAAQMD has not yet published a quantified threshold to meet the statewide 2030 GHG reduction target, this EIR uses a “Substantial Progress” adjustment. This adjustment assumes that 2020 statewide emissions will be equivalent to or lower than 1990 levels. The adjusted threshold should also account for the state’s goal to reduce GHG emissions in 2030 by 40 percent. Therefore, an appropriate quantitative threshold would be 40 percent below the 1,100 metric tons:

- 660 metric tons of CO<sub>2</sub>E per year

This reduced threshold was developed specifically for this Project and is not intended to be a significance threshold that would be applied to other development projects locally and regionally. Additionally, Dublin, Livermore, the County of Alameda, nor BAAQMD have adopted GHG significance thresholds that apply to construction-period GHG emissions.

### **Methodology**

The Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model (RoadMod), Version 8.1.0, was used to calculate GHG emissions during Project construction. BAAQMD recommends the use of RoadMod to analyze construction emissions for transportation projects. To determine operational GHG emissions, vehicle miles traveled (VMT) calculations for the

Project provided by Kittelson and Associates were used in conjunction with CARB's EMFAC2014 on-road emissions model. VMT estimates were calculated both regionally and localized to the project, and both of these estimates were used to determine operational Project GHG emissions (available on file with the City of Dublin).

### **Impact Analysis**

#### *No Impact Summary*

There are no "no impact" determinations for this topic.

#### *Impacts of the Project*

- A. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment

GHG emissions for transportation projects consist of short-term emissions associated with construction activities and long-term emissions once the project is operational. Construction-period emissions for the Project would consist primarily of emissions from equipment exhaust, and construction-period vehicle trips. Operational GHG emissions would be associated with vehicular traffic along the new roadway.

#### Construction-Period GHG Emissions

GHG emissions generated during construction would represent a temporary impact. Based on RoadMod modeling conducted for the project, construction-period emissions would equate to 930 metric tons of CO<sub>2</sub>E, based on 18 months of construction. As BAAQMD has not established a threshold for analyzing construction-period GHG emissions, but advises that they be quantified, disclosed, and evaluated for consistency with AB 32, the construction-period GHG emissions for the Project have been prorated over the life of the project (assumed to be 30 years) and added to the operational GHG emissions discussion below. This ensures that construction GHGs are included in the overall analysis of the Project's potential to result in GHG emissions impacts. When prorated, the construction emissions equate to 31 metric tons per year.

#### Operational GHG Emissions

During Project operation, existing traffic will shift from other routes to the new roadway as drivers take advantage of the more efficient route. This will increase the overall effectiveness of the transportation system. The Project is not anticipated to generate new vehicle trips (see **Section 5.14, Transportation and Traffic**, and **Chapter 7.0, Other CEQA Considerations** for a detailed discussion). Therefore, the Project is not anticipated to directly generate operational GHG emissions. Rather, the project would indirectly redistribute existing vehicle travel, slightly changing the location of GHG emission generation in the region.

#### *Regional Conformity*

As described above, there are no local or regionally established thresholds for evaluating project-level GHG emissions from transportation projects. As discussed in Regulatory Setting and Existing Conditions, there is a process by which transportation projects are evaluated for air quality and GHG conformity by looking at the entire sector of emissions. This is done through the SIP conformity process. The SIP conformity process considers air quality impacts and GHG emissions

associated with transportation projects at the regional level. The Project is included in the 2019 TIP, and in turn, is also a part of the 2040 Plan Bay Area that includes the region's SCS. Therefore, the Project is consistent with the GHG reduction targets established by MTC and the Association of Bay Area Governments (ABAG), as included in the SCS.

#### Project-Level GHG Emissions

In order to analyze operational GHG emissions induced by the Project, emissions were measured in two ways: (1) using the projected vehicle miles traveled (VMT) for the region and (2) a focused analysis using the VMT local to the Project based on information prepared by Kittelson & Associates in August 2018 (available on file with the City of Dublin).

Over time, GHGs from VMT are anticipated to decrease with or without the project, as vehicle emissions standards improve and tailpipe exhaust is reduced. In order to identify changes in GHG emissions attributable to the Project, the change in GHGs from VMT between the Plus Project and No Project scenarios must be isolated. **Table 5.6-1** shows the projected metric tons of GHG emissions from the regional roadway system with and without the Project, and GHG emissions in a localized area near the Project where the majority of changes to vehicle travel patterns are anticipated to occur.

In comparing the 2025 No Project and 2025 Plus Project scenarios, regional GHG emissions would slightly reduce with implementation of the Project: operational GHG emissions in 2025 would be reduced by 19 tons or 0.004 percent in the 2025 Plus Project scenario. However, when prorated construction GHG emissions are added, there is a slight increase in GHG emissions between the 2025 No Project and 2025 Plus Project scenario.

In comparing the 2040 No Project and 2040 Plus Project scenarios, regional GHG emissions would slightly increase with implementation of the Project: operational GHG emissions would increase by 123 metric tons or 0.029 percent in the 2040 Plus Project scenario. With the addition of prorated construction GHG emissions, the total increase in GHG emissions in the 2040 Plus Project scenario would be 154 metric tons.

Based on the above, the Project would result in minimal change to GHGs at a regional level. Given the relatively small size of the Project within the overall transportation network (1.5 miles) and the type of project (a local roadway), it is understandable that the Project would not result in notable changes to regional GHGs. It is worth noting that the above calculations of estimated changes in GHG emissions are based on modeled VMT for the Project, which relied on the Countywide model and expert professional judgement. As discussed in more detail in **Chapter 7.0, Other CEQA Considerations**, VMT reductions and increases of 0.0-0.1 percent are generally held to be negligible and are more likely representative of the model's margin of error than actual changes in VMT. Therefore, the Project-level GHG emission estimates based on regional VMT analysis are conservatively high, and actual increases in operational GHG emissions may be lower.

**Table 5.6-1 Project GHG Emissions**

Measure	2017 Existing (Metric Tons per Year)	2025 No-Build (Metric Tons per Year)	2025 Build (Metric Tons per Year)	2040 No-Build (Metric Tons per Year)	2040 Build (Metric Tons per Year)
<b>Regional VMT Analysis</b>					
Estimated Regional GHG emissions from VMT	505,694	438,124	438,105	424,803	424,926
Prorated Construction Emissions	N/A	N/A	31	N/A	31
Difference between Build and No Build*	N/A	N/A	+12 metric tons	N/A	+154 metric tons
Does the Project exceed the Bright-Line Threshold of Significance - <b>660 Metric tons per year</b>			<b>No</b>		<b>No</b>
<b>Focused VMT Analysis (2040 only)</b>					
Estimated Localized GHG emissions from VMT	N/A	N/A	N/A	35	31
Difference between Build and No Build*	N/A	N/A	N/A	N/A	-4 metric tons
Does the Project exceed the Bright-Line Threshold of Significance - <b>660 Metric tons per year</b>			--	--	<b>No</b>

\*Includes prorated construction emissions  
Source: Illingworth & Rodkin, 2019; Kittelson & Associates, 2018

The focused VMT analysis indicates a slight reduction in GHG emissions in the 2040 Plus Project scenario. As a result of the Project, daily VMT in the Project vicinity would be reduced by 328 miles when comparing the 2040 No Project and 2040 Plus Project scenarios. This would result in an annual reduction of approximately 35 metric tons per year of GHG emissions. However, when prorated construction emissions are added to this figure, the overall reduction in GHG emissions in the 2040 Plus Project scenario is limited to a change of 4 metric tons.

As shown in **Table 5.6-1**, the Project would not increase emissions above the significance threshold of 660 metric tons per year in any scenario, whether regional or focused VMT projections are used. As Project emissions would be below the significance thresholds, and the Project is consistent with regional conformity for GHG emissions reductions through the TIP, the Project would not generate greenhouse gas emissions that may have a significant impact on the environment, and this impact would be **less than significant**.

B. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

On a regional scale the Project is included in the MTC's RTP, Plan Bay Area, and the TIP. At the local level, the Project would not conflict with the Dublin, County, or Livermore Climate Action Plans. The Project is consistent with the applicable emission reduction measures identified in the Climate Action Plans for all three jurisdictions, including the expansion of multimodal transportation networks, support of bicycle and pedestrian modes of transportation, and improving transit access. The extension of Dublin Boulevard to North Canyons Parkway, as proposed, is included as part of the adopted roadway networks in Dublin, the County, and Livermore's General Plans.

The Project is part of the 2019 TIP and therefore conforms to the region's air quality planning efforts to meet statewide GHG reduction targets from light-duty vehicles. Given this, the Project does not conflict with an applicable GHG reduction plan, policy, or regulation, and this impact is considered to be **less than significant**.

### CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects. As discussed in **Chapter 4.0, Introduction to Environmental Analysis**, the cumulative analysis considers future land use changes within the region and future roadway improvements expected to occur by the year 2040. These projections are based on the TIP, Plan Bay Area, General Plans, and individual projects which are considered reasonably foreseeable by the agency with jurisdiction.

As discussed above, GHG emissions associated with transportation projects are assessed on a sector-wide basis at the state and regional level. Because the Project and all other major transportation projects with federal funding (and major local projects) are included in the 2019 TIP, which was determined to be in conformity with the SIP, a cumulative impact related to transportation GHG emissions would not occur.

The Project would support planned growth in eastern Dublin, as described in Dublin's General Plan, the Eastern Dublin Specific Plan (EDSP), and the Fallon Village SEIR. Future individual development projects would be required to complete project-level GHG emissions analysis under CEQA, including the evaluation of GHG impacts and identification of mitigation measures if potentially significant impacts would occur. Further, future development projects would be subject to prior environmental documents including the General Plan EIR, EDSP EIR, and the Fallon Village SEIR. Through this process, GHG emissions from future projects would be addressed in accordance with statewide legislation, statewide GHG reduction plans (2017 Scoping Plan), and consistency with local Climate Action Plans. Therefore, a cumulative impact would not occur. The Project would result in a less than cumulatively considerable contribution to any significant cumulative impact.

## REFERENCES

- California Legislative Information. 2015-2016. SB-32 California Global Warming Solutions Act of 2006. Available:  
[https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201520160SB32](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32).  
Accessed: January 2, 2019.
- California Legislative Information. 2018. AB-375. Available:  
[https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180AB375](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB375).  
Accessed: January 2, 2019.
- CARB. 2018. California Greenhouse Gas Emissions for 2000 to 2016. Available:  
[https://www.arb.ca.gov/cc/inventory/pubs/reports/2000\\_2016/ghg\\_inventory\\_trends\\_00-16.pdf](https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf). Accessed: January 2, 2019.
- CARB. 2019. Assembly Bill 32 Overview. Available: <https://www.arb.ca.gov/cc/ab32/ab32.htm>.  
Accessed: January 2, 2019.
- CARB. 2019. 2020 Business-as-Usual (BAU) Emissions Projection. Available:  
<https://www.arb.ca.gov/cc/inventory/data/bau.htm>. Accessed: January 2, 2019.
- U.S. EPA. 2019. Overview of Greenhouse Gasses. Available:  
<https://www.epa.gov/ghgemissions/overview-greenhouse-gases>. Accessed: January 2, 2019.
- U.S.EPA.2018. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016. Available:  
[https://www.epa.gov/sites/production/files/2018-01/documents/2018\\_complete\\_report.pdf](https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf). Accessed: January 2, 2019.
- Dublin 2010. Dublin Climate Action Plan. Available:  
<https://dublin.ca.gov/DocumentCenter/View/1049/Dublin-Climate-Action-Plan?bidId>.  
Accessed: January 2, 2019.
- Dublin 2013. Dublin Climate Action Plan Update 2013. Available:  
<https://dublin.ca.gov/DocumentCenter/View/5799/Dublin-Climate-Action-Plan-Update-2013?bidId>. Accessed: January 2, 2019.
- Livermore. 2012. Livermore Climate Action Plan. Available:  
<http://www.cityoflivermore.net/civicax/filebank/documents/9789/>. Accessed: January 2, 2019.