City of Galt
Community Development Department

Climate Action Plan

Initial Study/Negative Declaration

December 2019

Prepared by

RANEY PLANNING & MANAGEMENT, INC. 20 years
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INITIAL STUDY

December 2019

A. BACKGROUND

1.	Project Title:	Climate Action Plan
2.	Lead Agency Name and Address:	City of Galt Community Development Department 495 Industrial Drive Galt, CA 95632
3.	Contact Person and Phone Number:	Chris Erias Community Development Director (209) 366-7230
4.	Project Location:	Galt, CA
5.	Project Applicant's Name and Address:	City of Galt Community Development Department 495 Industrial Drive Galt, CA 95632
6.	Existing and Proposed General Plan Designation:	Citywide (project not changing designations)
7.	Existing and Proposed Zoning Designation:	Citywide (project not changing designations)
8.	Required Approvals from Other Public Agencies:	None

9. Project Description Summary:

The City of Galt is joining an increasing number of California local governments committed to addressing climate change at the local level by creating the City of Galt Draft Climate Action Plan (CAP). The proposed CAP is intended to streamline future environmental review of development projects in the City of Galt by assuring compliance with all relevant statewide regulations related to climate change. The Draft CAP has been designed to effectively address State regulatory requirements by reducing citywide greenhouse gas (GHG) emissions. The Draft CAP includes a baseline inventory of GHG emissions, emission forecasts associated with buildout of the City, and emissions reduction strategies in accordance with State requirements.

10. Status of Native American Consultation Pursuant to Public Resources Code Section 21080.3.1:

The City of Galt's tribal consultation request list, pursuant to Assembly Bill (AB) 52/Public Resources Code Section 21080.3.1, currently includes the Torres Martinez Desert

Cahuilla Indians and Wilton Rancheria. The City provided each of the tribes with notification regarding the proposed project, consistent with Section 21080.3.1 requirements. Consultation letters were distributed to the tribes by the City on August 27, 2019 and requests for consultation on the proposed project were not received.

B. SOURCES

The Draft CAP is available upon request at the City of Galt Community Development Department, located at 495 Industrial Drive, Galt. Office hours are Monday through Thursday, 7:30 AM to 5:30 PM. The following documents are referenced information sources used for the purposes of this Initial Study:

1. California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* November, 2017.
2. California Air Resources Board. *California Greenhouse Gas Emissions Inventory – 2019 Edition*. Available at: https://ww3.arb.ca.gov/cc/inventory/data/data.htm. Accessed September 2019.
3. California Department of Conservation. *California Important Farmland 2016. Accessed* August 2018.
4. California Department of Conservation. *Sacramento County Williamson Act FY 2015/2016.* 2015. Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Sacramento_15_16_WA.pdf. Accessed July 19, 2019.
5. California Department of Conservation. *Alquist-Priolo Fault Zone and Seismic Hazard Zone Maps*. Available at: https://www.conservation.ca.gov/cgs/information-warehouse. 2016. Accessed July 25, 2019.
6. California Department of Forestry and Fire Protection. *Sacramento County Draft Fire Hazard Severity Zones in LRA.* October 2, 2007.
7. City of Galt. *City of Galt Climate Action Plan*. December 2019.
8. City of Galt. *City of Galt Emergency Operations Plan.* March 6, 2012.
9. City of Galt. *Galt General Plan Update: 2030, Draft Environmental Impact Report*. July 2008.
10. City of Galt. *2015 Urban Water Management Plan Update*. June 2016.
11. Cal Fire. *Sacramento County, Draft Fire Hazard Severity Zones in LRA.* October 2, 2007.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is “Potentially Significant Impact” as indicated by the checklist on the following pages.

- ☐ **Aesthetics**
- ☐ **Biological Resources**
- ☐ **Geology and Soils**
- ☐ **Hydrology and Water Quality**
- ☐ **Noise**
- ☐ **Recreation**
- ☐ **Utilities and Service Systems**
- ☐ **Agriculture and Forest Resources**
- ☐ **Cultural Resources**
- ☐ **Greenhouse Gas Emissions**
- ☐ **Land Use and Planning**
- ☐ **Population and Housing**
- ☐ **Transportation**
- ☐ **Wildfire**
- ☐ **Air Quality**
- ☐ **Energy**
- ☐ **Hazards and Hazardous Materials**
- ☐ **Mineral Resources**
- ☐ **Public Services**
- ☐ **Tribal Cultural Resources**
- ☐ **Mandatory Findings of Significance**

D. DETERMINATION

On the basis of this initial study:

☒ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

______________________________	______________________________
Signature	Date
Chris Erias	City of Galt
Printed Name	For

E. BACKGROUND AND INTRODUCTION

The following document is an Initial Study resulting in a Negative Declaration (IS/ND) prepared pursuant to the California Environmental Quality Act (CEQA) for the City of Galt Draft CAP (proposed project). The IS/ND has been prepared in accordance with CEQA, Public Resources Code Sections 21000 et seq., and the State CEQA Guidelines to evaluate the potential environmental impacts of the proposed project. Pursuant to Appendix G of CEQA Guidelines, the IS/ND includes an environmental checklist used to describe the impacts of the proposed project.

F. PROJECT DESCRIPTION

The Project Description section of this IS/ND includes a general overview of the contents of the Draft CAP. Such contents include the project location and setting, regulatory background related to GHG emissions, the purpose of the proposed project, summaries of the emissions inventories conducted for the City, projected GHG emissions, and GHG emission reduction targets and measures.

Project Location and Setting

The City of Galt is located along State Route (SR) 99 in Northern California's Central Valley, between the cities of Sacramento and Stockton (see Figure 1). The City of Galt is approximately 30 minutes away from the Sierra Foothills and the Sacramento Delta. Lake Tahoe, San Francisco, and the California Coast are all within a two-hour drive. Galt is continuously growing and is now home to approximately 25,000 residents. The CAP pertains to all areas of the city included within the City of Galt's General Plan Boundary, as shown in Figure 2 below. Generally, the General Plan Boundary extends from the Sacramento-San Joaquin County line in the south, which is demarcated by Dry Creek, to Laguna and Skunk Creeks in the north, Cherokee Lane in the east, and Sargent/Midway Road in the west.

Regulatory Background

GHG emissions are monitored and regulated through the efforts of various international federal, state, and local government agencies. Agencies work jointly and individually to reduce GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs. The State of California considers GHG emissions to be a serious threat to the wellbeing of California citizens. In response, California has adopted a variety of regulations aimed at reducing GHG emissions. One such regulation is Assembly Bill (AB) 32, adopted in 2006. AB 32 requires the reduction of GHG emissions to 1990 levels by 2020. AB 32 also requires the California Air Resources Board (CARB) to develop a Scoping Plan and regulations to meet the 2020 goal. Based on recent statewide emissions inventories, the CARB determined that the year 2020 emissions reductions goals were achieved four years ahead of the target, in the year 2016, and statewide emissions have continued to decline since 2016.[1] Beyond the initial Scoping Plan, Scoping Plan updates have been adopted in 2008, 2014, and 2017, all setting the path for achievement of California's reduction requirements.

In order to keep GHG emission goals current and move forward with GHG reduction targets, California enacted Senate Bill (SB) 32 on January 1, 2017. SB 32 requires the CARB to develop a plan to ensure GHG emissions are reduced to 40 percent below the 1990 level by 2030.

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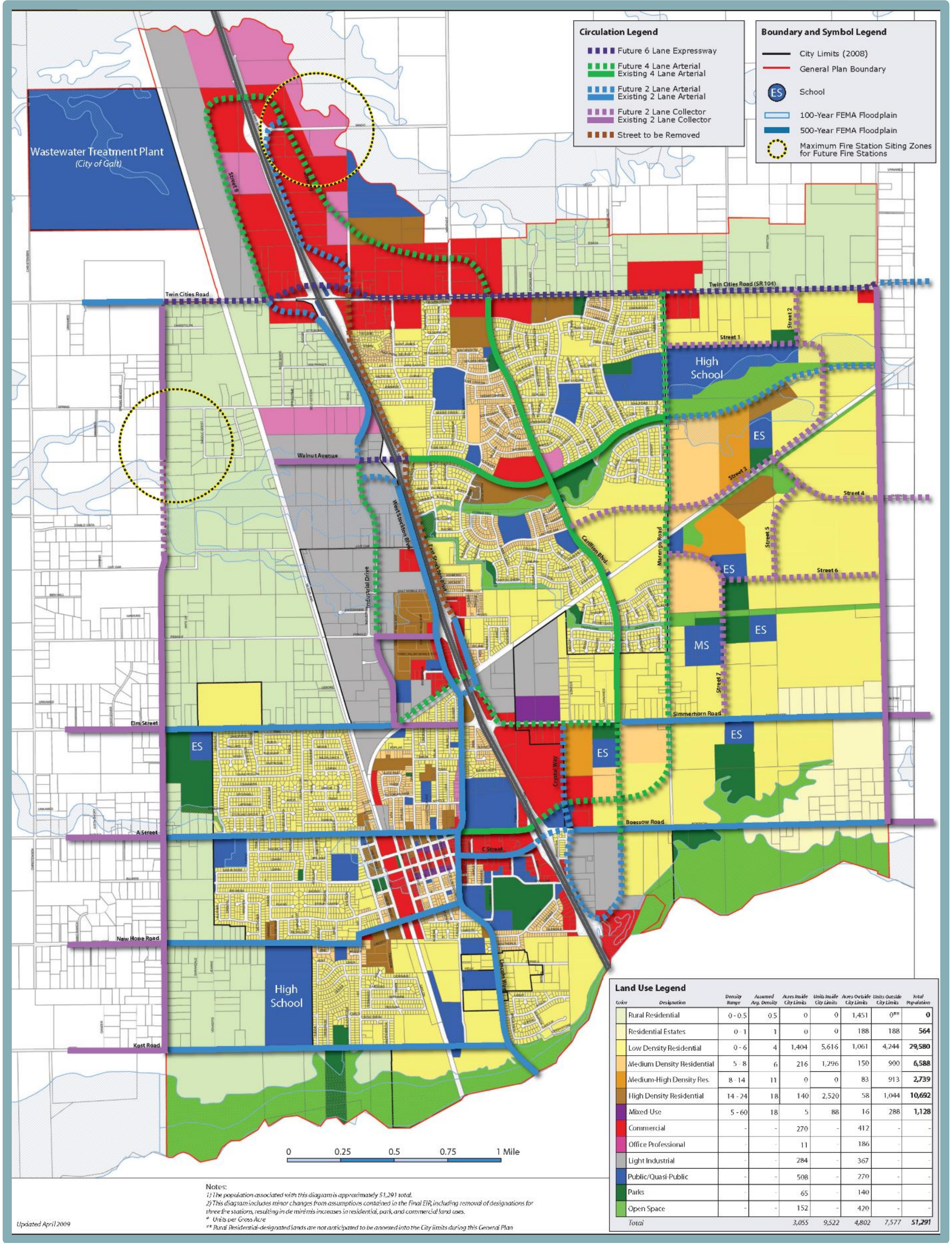
[1] California Air Resources Board. *California Greenhouse Gas Emissions Inventory – 2019 Edition*. Available at: https://ww3.arb.ca.gov/cc/inventory/data/data.htm. Accessed September 2019.

Figure 1
Regional Project Location

Figure 2
City of Galt General Plan Boundaries and Land Use Map



Land Use Legend

Color	Designation	Density Range	Assumed Avg. Density	Acres Inside City Limits	Units Inside City Limits	Acres Outside City Limits	Units Outside City Limits	Total Population
🟩	Rural Residential	0 - 0.5	0.5	0	0	1,451	0**	**0**
🟨	Residential Estates	0 - 1	1	0	0	188	188	**564**
🟨	Low Density Residential	0 - 6	4	1,404	5,616	1,061	4,244	**29,580**
🟧	Medium Density Residential	5 - 8	6	216	1,296	150	900	**6,588**
🟧	Medium-High Density Res.	8 - 14	11	0	0	83	913	**2,739**
🟫	High Density Residential	14 - 24	18	140	2,520	58	1,044	**10,692**
🟪	Mixed Use	5 - 60	18	5	88	16	288	**1,128**
🟥	Commercial	-	-	270	-	412	-	-
🟪	Office Professional	-	-	11	-	186	-	-
⬜	Light Industrial	-	-	284	-	367	-	-
🟦	Public/Quasi-Public	-	-	508	-	270	-	-
🟩	Parks	-	-	65	-	140	-	-
🟩	Open Space	-	-	152	-	420	-	-
	Total			*3,055*	*9,522*	*4,802*	*7,577*	***51,291***

Notes:
1) The population associated with this diagram is approximately 51,291 total.
2) This diagram includes minor changes from assumptions contained in the Final EIR, including removal of designations for three fire stations, resulting in de minimis increases in residential, park, and commercial land uses.
** Units per Gross Acre*
*** Rural Residential-designated lands are not anticipated to be annexed into the City limits during this General Plan*

In addition to SB 32 and AB 32, the State has adopted various pieces of legislation related to climate change and GHG emission reductions. An extensive list of GHG-related legislation can be found at the CARB website (https://www.climatechange.ca.gov/state/mandates.html).

Purpose of the Draft CAP

In recognition of the State's existing regulations regarding GHG emissions reductions, and that climate change poses a risk to the constituents and community of the City of Galt, the City is acting to reduce the GHG emissions, or "carbon footprint," of both its government operations and the general operations of the City through the creation of a Draft CAP. The Draft CAP is included as the appendix to this IS/ND. With the creation of a baseline inventory of GHG emissions, emissions forecasts associated with buildout of the City, and reduction strategies necessary to meet mandatory State requirements, the Draft CAP is intended to significantly reduce GHG emissions, as well as yield economic and other benefits. The benefits would be seen in cleaner air, reduced traffic, less dependence on fossil fuels, improved quality of life, greater resilience to the effects of climate change, and financial savings to the City and residents of Galt. The Draft CAP also identifies how the City would achieve consistency with the statewide emissions limits and the 2017 Scoping Plan Update prepared by the CARB.

As part of the scope for the preparation of the Draft CAP, the City performed public outreach through meetings held with the City of Galt Youth Commission as well as the City of Galt Planning Commission. Both commission meetings allowed staff to obtain direction from the commissioners and the public regarding the community's interests and goals related to emission reduction measures. Based upon the direction received during the commission meetings, the Draft CAP was prepared. It should be noted that the Draft CAP was also reviewed by the Sacramento Metropolitan Air Quality Management District (SMAQMD), and SMAQMD's comments were subsequently incorporated into the Draft CAP.

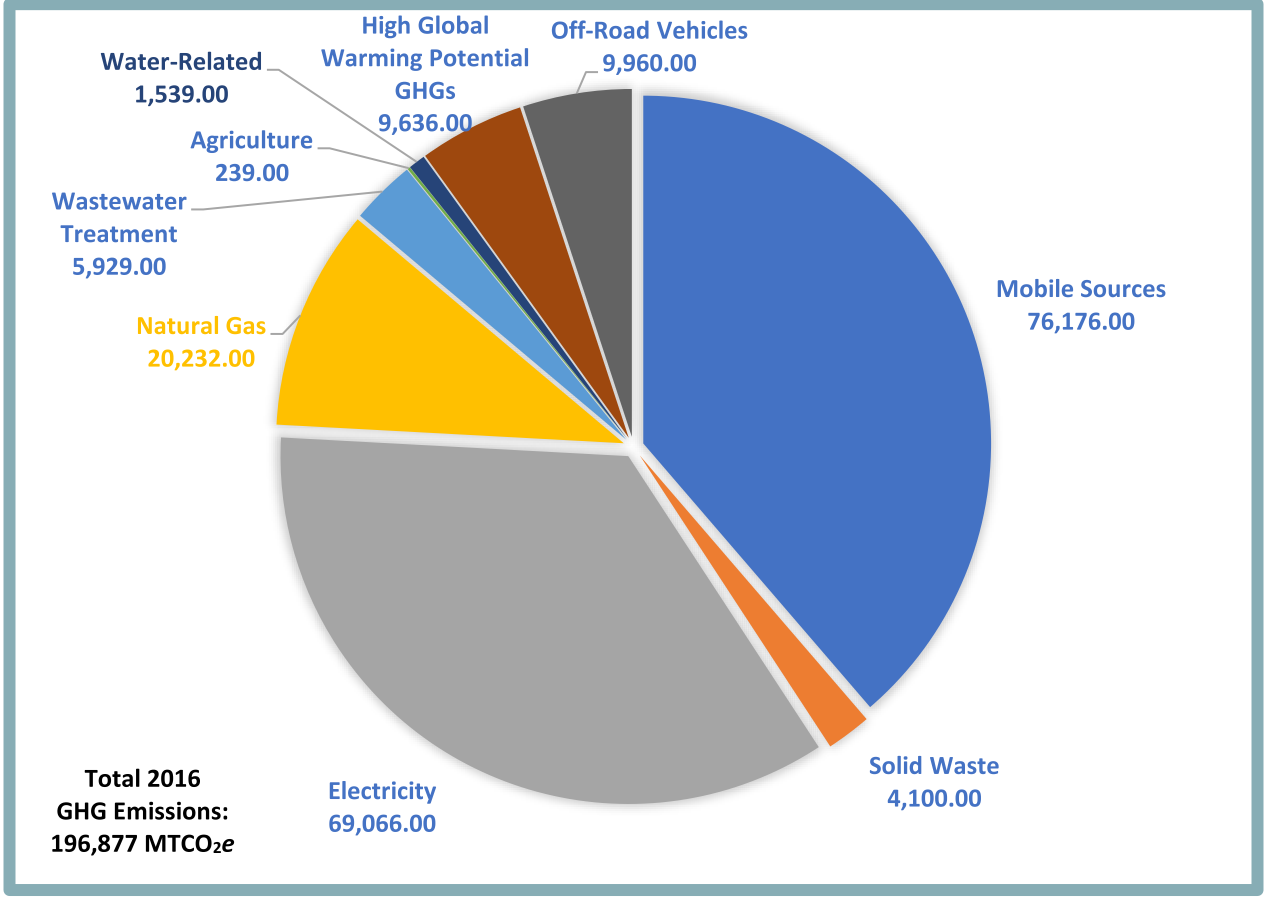
GHG Emissions Inventory

In 2009, the Sacramento County Department of Environmental Review and Assessment prepared a baseline GHG inventory for all unincorporated areas of the County as well as the incorporated cities of Galt, Citrus Heights, Elk Grove, Folsom, Isleton, Rancho Cordova, and Sacramento. The baseline inventory presented estimated emissions for the year 2005, in order to facilitate Countywide compliance with statewide legislation related to reducing GHG emissions. Since the preparation of the 2009 Countywide GHG inventory, which quantified countywide emissions from the baseline year of 2005, the City's estimated population has grown from 23,913 residents in 2005 to 24,848 residents in 2016.

Due to the development within the City between 2005 and 2016, the City of Galt determined that an update to the 2005 inventory was necessary to form the baseline for the analysis within the Draft CAP. As part of the process of updating the inventory of Citywide emissions, the City of Galt undertook an extensive effort to update and expand upon the information used to generate the 2009 Countywide GHG Inventory. To that end, updated information related to Citywide GHG emissions was obtained from SMUD, the City's solid waste provider, Cal-Waste, the California Department of Transportation, and South County Transit. In addition, various departments of the City of Galt provided updated information including, but not limited to, the City's Police Department, the Public Works Department, and the Community Development Department. Updated information was available for the majority of emissions sources within the City of Galt; however, updated information related to some of the emissions sources, including the 2009 Countywide GHG Inventory could not be obtained. For sources that specific updated information was not available, changes in emissions were estimated based on population growth within the

City of Galt between 2005 and 2016 and per capita emissions rates. The estimated Citywide GHG emissions for the year 2016 are presented in Figure 3. The emissions levels in Figure 3 are presented in the common unit of measurement for GHG emissions, which is annual metric tons of carbon dioxide equivalents ($MTCO_2e$). GHG emissions for the year 2016 totaled approximately 196,877 $MTCO_2e$.

Figure 3
City of Galt 2016 GHG Emissions ($MTCO_2e$)



It should be noted that the updated emissions inventory was prepared using the most up-to-date methodology provided by the Statewide Energy Efficiency Collaborative (SEEC). The SEEC's online tool, ClearPath, is recommended for use in measuring and tracking GHG emissions within California communities. Thus, ClearPath was used for the emissions inventory and emissions forecasting prepared for the City of Galt.

GHG Emissions Forecasting

The City's 2030 General Plan established a vision for growth within the City's Planning area. In addition, the Sacramento Area Council of Governments (SACOG), an association of local governments in the six-county Sacramento Region, has also produced growth estimates for the City of Galt. Using both data from the City of Galt as well as SACOG, the City of Galt is anticipated to grow to 32,108 residents by the year 2030, and 56,090 residents by the year 2050.

Based on the existing emissions levels and anticipated growth within the City of Galt, future emissions were forecasted. Emissions forecasts were conducted under two forecasting scenarios. The first emissions forecast scenario, hereinafter referred to as the Business As Usual (BAU) forecast scenario, does not include any statewide or local actions that may reduce GHG emissions. Thus, the BAU forecasts present a worst-case emissions scenario predicting the emissions that could occur, under the growth scenarios discussed above, should the City of Galt and State fail to act sufficiently to control future GHG emissions. However, statewide emissions reductions strategies are in place related to electricity generation and demand, transportation, and various other emissions sources, and such strategies will work to reduce GHG emissions from activities within the City of Galt even in the absence of a City adopted CAP. Therefore, a second emissions forecasting scenario has been prepared that depicts Citywide emissions that would occur in the absence of specific City policies to reduce GHG emissions, but with implementation of statewide programs that would work to reduce emissions from activities in the City. The emissions forecast presented under the second scenario is considered more likely to occur because statewide programs have been legislated and are currently being enacted, but the worst-case emissions forecast provided by the BAU forecast scenario is useful for analysis purposes and required for qualified CAPs.

Under the BAU assumptions that neither the City's CAP nor statewide emissions reductions policies were to be implemented, as shown in Table 1, the communitywide GHG emissions would rise from the inventoried level of 196,877 $MTCO_2e$ per year to 242,216 $MTCO_2e$ per year by 2030 and 438,852 $MTCO_2e$ by the year 2050.

Table 1
City of Galt Community BAU Emissions Estimates

	2005	2016	2030	2050
Population	23,913	24,848	32,108	56,090
Total Community Emissions	172,428	196,877	242,216	438,852
Per Capita Emissions Rate	7.2	7.9	7.54	7.82

Sources: Sacramento County Department of Environmental Review and Assessment. Greenhouse Gas Emissions Inventory for Sacramento County. June 2009; Clearpath, 2019.

Full implementation of currently adopted statewide policies would result in substantial reductions to existing sources of emissions while also reducing the amount of emissions that would be anticipated from future development. As a result, despite the continued growth of the City of Galt, GHG emissions are anticipated to initially fall from the 2016 inventory level of 196,877 $MTCO_2e$ per year to 172,736 $MTCO_2e$ per year by 2030. However, as growth intensifies within the City of Galt past the year 2030, emissions are anticipated to rise to a buildout level of 225,548 $MTCO_2e$ per year in 2050. Estimated population, emissions level, and per capita emissions rates with inclusion of statewide programs are presented in Table 2.

The emissions reductions between the BAU forecast and the forecast with state programs are due to a number of factors. The most prominent factors are reductions in the GHG emissions intensity of electricity consumed in the City, and the reduction in vehicle emissions per mile, both of which would result from full implementation of existing state legislation.

Table 2
City of Galt Community Emissions Estimates with State Programs

	2005	2016	2030	2050
Population	23,913	24,848	32,108	56,090
Total Community Emissions	172,428	196,877	172,736	225,548
Per Capita Emissions Rate	7.2	7.9	5.38	4.02

***Sources:* *Sacramento County Department of Environmental Review and Assessment. Greenhouse Gas Emissions Inventory for Sacramento County. June 2009; Clearpath, 2019*.**

GHG Emission Reduction Targets

California's 2017 Climate Change Scoping Plan, which was adopted by the CARB on December 14, 2017,[2] establishes goals for local communities that GHG emissions should not exceed 6.0 $MTCO_2e$ per capita by the year 2030, and per capita emissions should not exceed 2.0 $MTCO_2e$ per capita by 2050. The update is consistent with the statewide emission limits established by AB 32, SB 32, and SB 391, and Executive Order S-3-05 and B-30-15.

Considering the implementation of currently adopted statewide emissions reductions measures, as shown in Table 2, activities within the City of Galt are anticipated to result in per capita emissions of 5.38 in the year 2030 and 4.02 in the year 2050. Compared to the Scoping Plan's per capita emissions targets, the City of Galt is on track to achieve the per capita emissions targets by the year 2030. Although per capita emissions are anticipated to continue to decrease, per capita emissions would remain above the Scoping Plan's year 2050 goal. In order for the City of Galt to meet the year 2050 target, the City of Galt must adopt emissions reduction measures to reduce estimated future emissions in the year 2050 by a total of 113,368 $MTCO_2e$, which represents 50 percent of the forecasted emissions in 2050.

GHG Emission Reduction Measures

The Draft CAP includes emission reduction strategies intended to reduce communitywide emissions in-line with the Scoping Plan's per capita emissions target for the year 2050. Emission reduction strategies are separated into five categories: transportation, land use, energy, solid waste, and water. Although the Draft CAP does not demonstrate compliance with the per capita emissions goals for the year 2050, the emissions reduction measures included in the Draft CAP represent the maximum feasible emissions reductions that can be achieved by the City under current conditions. In order to ensure that citywide GHG emissions comply with statewide per capita emissions goals for the year 2050, the Draft CAP requires that the City prepare future updates to the CAP. The reduction strategies associated with each category are briefly described below.

Transportation

Transportation-related GHG emission reduction measures proposed in the Draft CAP include improvements to bicycle and pedestrian infrastructure, increased use of public transit, promotion of safe routes to schools, optimization of City-owned vehicles, support for electric vehicle charging infrastructure, congestion management, and promoting alternative modes of transportation within the City. For example, Transportation Measure 1 directs the City to improve bicycle infrastructure through implementation of the City of Galt Bicycle Transportation Plan, which is available for

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[2] California Air Resources Board. *The 2017 Climate Change Scoping Plan Update*. November, 2017.

public viewing at the City, as well as at the following webpage: http://www.ci.galt.ca.us/home/showdocument?id=5640.

Land Use

The Draft CAP proposes measures that would help the City of Galt reduce GHG emissions related to land uses within the City. If implemented, Land Use Measure 1 of the Draft CAP would encourage reuse of existing buildings for new projects, which can result in increased energy efficiency in existing buildings and reduce the need for new development outside of the City's existing footprint. In addition, Land Use Measure 2 presents a variety of approaches to sustainable growth within the City, namely encouraging mixed use and infill development, as increasing density can lead to increased uses of alternative means of transportation. The Draft CAP also includes Land Use Measure 3, which directs the City to create an Urban Tree Program to include maintenance of existing trees, the planting of new trees, and tree protection guidelines. Increased tree canopy cover reduces energy demand, encourages alternative modes of transportation, sequesters carbon, and reduces municipal government operational costs through benefits related to stormwater reduction and reduced pavement maintenance.

Building Efficiency

The Draft CAP includes several measures related to citywide building efficiency that would contribute to the overall goal of reducing GHG emissions. Building Efficiency Measure 1 establishes a citywide goal for natural gas use reduction, which could be attained through electrification of the City's existing building stock and support for new development to be all-electric. Furthermore, Building Efficiency Measure 2 establishes Citywide goals that new development be zero net energy by the year 2020 for new residential development, as mandated by existing building codes, and 2030 for new commercial development.

Solid Waste

The Draft CAP includes solid waste reduction measures that would reduce emissions related to solid waste disposal within the City. In order to reduce emissions from solid waste disposal in the City, Waste Measure 1 encourages increased recycling within the City, while Waste Measure 2 encourages expanded yard waste and organics collection. In addition, the Waste Measure 3 directs the City to investigate the feasibility of biodigesters in managing waste within the City and producing renewable natural gas.

PUBLIC AGENCIES WHOSE APPROVAL IS OR MAY BE REQUIRED: (e.g., permits, financing approval, or participation agreement.)

The City of Galt has sole approval authority over the Draft CAP. The project does not require the approval of any other public agencies.

G. ENVIRONMENTAL CHECKLIST

The following checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

I. AESTHETICS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☒	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion

a-d. The City of Galt is located in Sacramento County along SR 99. The Draft CAP evaluated in this IS/ND is a policy level document intended to ensure that the City is compliant with applicable regulations and guidelines related to GHG emissions. The Draft CAP would not directly result in new development or redevelopment of existing properties within the City. Because the Draft CAP would not result in any direct construction or physical changes within the City, degradation of the visual character or quality of any sites within the City would not occur. Additionally, the Draft CAP would not result in additional sources of light or glare within the City. While some of the measures presented in the Draft CAP may promote development of features that could result in new sources of light or glare or that could have the potential to affect the visual character of the City, such as new bike paths or solar panels, the Draft CAP would not directly result in the construction of new infrastructure. In addition, future developments within the City would be subject to existing City regulations in addition to the City's CAP. For instance, development within the City is subject to General Plan Policy CC-1.11, Outdoor Lighting, and Policy CC-1.12, Reflective Materials, both of which would reduce the potential for development related to CAP policies to result in impacts related to light or glare. Furthermore, the Draft CAP could improve the aesthetic qualities of the City by adding trees and vegetation to the landscape. Overall, impacts related to aesthetics would be ***less-than-significant.***

II. AGRICULTURE AND FOREST RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	✖
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	✖
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	✖
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	✖
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	✖

Discussion

a. Although the City of Galt includes areas identified on the Sacramento County Important Farmland Map as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, the proposed project would not result in direct development which would result in the conversion of such farmland.[3] The Draft CAP is a policy-level document intended to reduce the City's GHG emissions and would not directly result in new development or the conversion of any agricultural land to non-agricultural land. Furthermore, the Draft CAP specifically encourages infill development and the reuse of existing development, which would reduce the conversion of farmland on the edges of the City, by focusing development within the previously developed portions of the City. For example, the Draft CAP includes Land Use Measure 4 which is intended to preserve high quality farmland in an effort to reduce GHG emissions, as recommended by the American Farmland Trusts as well as the California Strategic Growth Council. By preserving farmland, the Draft CAP estimates that saving one acre of farmland from conversion to residential uses saves 33 MT CO_2e/yr. Although the Draft CAP would encourage sustainable growth and associated infrastructure, because the Draft CAP would not result in the conversion of Farmland to non-agricultural use, ***no impact*** would occur.

b. The City of Galt contains various portions of land zoned for agricultural uses; however, only a few pieces of land throughout the City are under a Williamson Act contract.[4] Nonetheless, the Draft CAP would not involve any changes to zoning, as the Draft CAP is a policy level document. Therefore, the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and ***no impact*** would occur.

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[3] California Department of Conservation. *California Important Farmland Finder.* 2016. Available at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed July 19, 2019.

[4] California Department of Conservation. *Sacramento County Williamson Act FY 2015/2016.* 2015. Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Sacramento_15_16_WA.pdf. Accessed July 19, 2019.

c-e. The City does not contain land that is considered forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), or zoned Timberland Production (as defined by Government Code section 51104[g]). Therefore, the proposed project would have ***no impact*** with regard to conversion of forest land or any potential conflict with forest land, timberland, or Timberland Production zoning.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Discussion

a-d. The City of Galt is within Sacramento County, which is within the boundaries of the Sacramento Valley Air Basin (SVAB) and under the jurisdiction of SMAQMD. California and the federal government have established air quality standards for various pollutants. SMAQMD has adopted thresholds of significance for various pollutants to maintain attainment of federal and State air quality standards. SMAQMD air quality standards are health based and have been adopted to assist in attaining and maintain the ozone and particulate matter standards.

The Draft CAP is a policy-level document that does not propose direct development or other physical changes within the City of Galt. While the proposed measures of the Draft CAP may encourage various development and improvements that may require construction activities, such as improvements to transportation infrastructure, emissions and impacts associated with any future activities would be subject to environmental review and would be required to comply with the General Plan and relevant federal, State, and local air quality goals and plans. The Draft CAP's intention is to propose measures to reduce GHG emissions to target levels set by the State of California. Direct construction or operations that could deteriorate air quality would not occur as a result of implementation of the Draft CAP. In addition, many of the measures proposed by the Draft CAP have the secondary benefit of reducing pollutants in the air. For example, promoting alternative modes of transportation within the City would not only result in GHG emission reductions but criteria pollutants reductions as well.

Typical development projects can involve other emissions, such as dust or those leading to odors. The Draft CAP does not propose direct development and would not directly result in activities that would lead to other emissions such as emissions of dust resulting from land clearing. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative or formulaic methodologies to determine the presence of a significant odor impact do not exist. Typical odor generating land uses include, but are not limited to, wastewater treatment plants, landfills, and composting facilities. The Draft CAP is a policy level document that would not result in such activities and would not include any odor-producing operations. Although the Draft CAP would not directly result in the development of odor producing facilities, the Draft CAP does include measures that would promote the use of composting facilities and other forms of organic waste disposal. For instance, Waste Measure 3 of the Draft CAP encourages the City to investigate the use of biodigesters, while Waste Measure 2 directs the City to expand the collection of organic wastes. Organic wastes collected under Waste Measure 2 would be collected by the City's contracted waste management agency, currently Cal-Waste, and would be composted in accordance with all existing regulations for composting facilities. Waste Measure 3 directs the City to investigate the feasibility of the use of a biodigester, but would not directly result in the installation and operation of a biodigester. Rather, any potential future biodigester would be implemented in compliance with the City's existing land use regulations. In particular, any future biodigester would be subject to the land use regulations contained within the City of Galt's Municipal Code, and development of a biodigester within the City would likely require special review under Section 18.68.090 of the City's Municipal Code. The addition of biodigesters would likely result in the reduction of methane emissions from landfills. Considering that the Draft CAP would not directly result in development of uses that would produce odors or other emissions, and that activities encouraged in the Draft CAP, such as increased composting and future development of a biodigester would be subject to existing City regulations, the Draft CAP would not result in impacts related to the emission of odors.

Consequently, the Draft CAP would result in a long-term beneficial effect related to air quality, and would not result in impacts related to odors or other emissions. Therefore, the Draft CAP would have a ***less-than-significant*** impact related to air quality.

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☒	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	☒	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion

a-e. The Draft CAP is a policy-level document intended to assist the City of Galt in meeting GHG emission reduction targets established by the State of California. The Draft CAP does not include plans for any site-specific developments, designs, or proposals that would result in direct disturbance of wildlife habitat in the area, including any special-status species habitats, riparian habitat, or federally protected wetlands. While the Draft CAP includes measures that, if implemented, could result in development or construction, any such improvements would be subject to additional environmental review and would be required to adhere to all federal, State, and local regulations as they apply to biological resources. Because the Draft CAP would not result in disturbance of any biological resources, the proposed project would result in a ***less-than-significant*** impact.

f. The City of Galt is located within the boundaries of the South Sacramento Habitat Conservation Plan (SSHCP). The SSHCP is intended to ensure the preservation of species, natural communities, and aquatic resources in the Plan Area. The Draft CAP would not result in any direct development, and, thus, would not conflict with policies or provisions set forth in the SSHCP. Therefore, the proposed project would have ***no impact*** related to a conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	✖	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	☐	✖	☐
c. Disturb any human remains, including those interred outside of dedicated cemeteries.	☐	☐	✖	☐

Discussion

a. According to the City's General Plan EIR, Galt contains two buildings listed on the National Register of Historic Resources, one building listed as a State Historic Landmark, two State Historical Points of Interest, and fifty City Historical Landmarks/Sites.[5] The City of Galt Draft CAP is a policy-level document that does not include specific development proposals, nor does the project grant any entitlements for development that would disturb historical resources in the City. Although the Draft CAP encourages reuse of existing developments within the City, such reuse would be required to comply with all existing regulations related to historic resources including the California State Historical Building Code. Compliance with State regulations related to the reuse of historic structures would ensure that should such structures be proposed for reuse, reuses would not diminish the historic nature of such structures, while supporting the goals of the Draft CAP. Therefore, the proposed project would result in a ***less-than-significant*** impact to historical resources.

b,c. The proposed project is intended to set goals and implementation measures to ensure that the City of Galt meets the State of California GHG emission reduction requirements for the years 2030 and 2050. Because direct development or ground disturbing activities would not be included as part of the Draft CAP, the proposed project would not have the potential to result in any adverse changes in the significance of unique archaeological resources or disturbance of any human remains. Implementation of the Draft CAP reduction measures may require future development or improvements, such as solar panels or building improvements; however, each future improvement would be subject to review by the City of Galt to ensure the project is in compliance with the General Plan and Municipal Code, and would be required to adhere to all necessary federal, State, and local regulations relating to cultural resources. Compliance with such would ensure that any impacts associated with future development or improvements related to implementation of the Draft CAP reduction measures would be minimized. Therefore, because the Draft CAP would not involve any direct physical development, a ***less-than-significant*** impact to unique archaeological and human remains would occur.

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[5] City of Galt. *Galt General Plan Update: 2030, Draft Environmental Impact Report.* [pg. 9-4]. July 2008.

VI. ENERGY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	✖
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	✖

Discussion

a,b. The City of Galt Draft CAP is intended to help the City meet GHG emission reduction targets set by the State of California. While the Draft CAP does not propose specific development, implementation of the GHG reduction measures would include a number of energy-efficiency improvements, such as Building Efficiency Measures 1 and 2, which would result in the transition of natural gas appliances to electric appliances and would phase in zero net energy (ZNE) requirements for residential and commercial developments, respectively. Using all electric appliances in existing and new development would reduce reliance on non-renewable energy sources in the City, reducing the consumption of such resources. In order for new development to meet ZNE requirements, new development would be required to meet high standards of energy efficiency, and on-site renewable energy generation would likely be required. Moreover, new development in the City would continue to be required to meet the California Building Standards Code (CBSC) requirements related to energy efficiency and green building standards. The 2019 CBSC, which includes the California Green Building Standards (CAL Green) and the California Building Energy Efficiency Standards, will become effective on January 1, 2020. The purpose of the CAL Green Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts that reduce negative impacts while encouraging sustainability. The CBSC standards regulate the method of use, properties, performance, types of materials used in construction, alteration repair, improvement and rehabilitation of structures or improvements to properties. The 2020 CBSC will ensure that homes and commercial developments built in or after 2020 are highly efficient. For instance, the 2020 CBSC requires that all new residential structures three-stories or less in height be designed with adequate on-site solar energy systems to meet the energy demand of the residence, thus meeting the ZNE standard. Therefore, in combination with the CBSC and other state standards, the Draft CAP would promote energy efficiency, and, thus, would result in ***no impact*** related to wasteful, inefficient, or unnecessary consumption of energy resources, nor would the Draft CAP conflict with a state or local renewable energy or energy efficiency plans.

VII. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	✖	☐
ii. Strong seismic ground shaking?	☐	☐	✖	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	✖	☐
iv. Landslides?	☐	☐	✖	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	✖	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	✖	☐
d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	✖	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	✖	☐
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	✖

Discussion

a. The City of Galt's topography is relatively flat and Galt is not located within an Alquist-Priolo Earthquake Fault Zone, in the immediate vicinity of an active fault, nor within a Landslide and Liquefaction Zone.[6] The nearest mapped fault to the site is the Midland Fault and the nearest active fault is the Clayton-Marsh Creek-Greenville Fault, which is located over 40 miles southwest of the City. According to the Galt 2030 General Plan EIR, ground shaking hazards are considered to be low within the City.[7] The proposed project does not include any site-specific development, as the Draft CAP is a policy-level document intended to help reduce GHG emissions in the City of Galt. While the Draft CAP includes measures that may result in future physical development, such as building and retrofitting bike paths, all relevant improvements would be subject to compliance with the City's General Plan relating to seismic hazards, as well as all other applicable federal and State policies, including the California Building Standards Code. Compliance with such would ensure that any impacts related to rupture of a known earthquake fault, ground shaking, seismic-related ground failure, and landslides associated with future developments would be minimized. Therefore, the Draft CAP, would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death

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[6] California Department of Conservation. *Alquist-Priolo Fault Zone and Seismic Hazard Zone Maps*. Available at: https://www.conservation.ca.gov/cgs/information-warehouse. 2016. Accessed July 25, 2019.

[7] City of Galt. *City of Galt 2030 General Plan EIR* [pg. 8-24]. April 2009.

involving rupture of a known earthquake fault, strong seismic ground shaking, seismic related ground failure, or landslides and a ***less-than-significant*** impact would occur.

b-e. The Draft CAP does not directly include any site-specific development, design, or proposal. Thus, substantial soil erosion or the loss of topsoil would not occur as a result of the proposed project. Similarly, effects related to unstable soils, such as on- or off-site landslides, liquefaction, subsidence, lateral spreading, or expansive soils, would not occur as a direct result of the Draft CAP. Because the Draft CAP is a policy-level document that does not include any specific development, impacts related to soils incapable of adequately supporting the use of septic tanks or other alternative wastewater disposal systems would not occur. Therefore, impacts would be ***less-than-significant.***

f. The proposed project would not include development or ground disturbing activities that would result in the discovery of known or unknown paleontological resources. The Draft CAP is designed to help the City of Galt meet GHG reduction thresholds established by the State. While the GHG reduction measures included in the Draft CAP may recommend improvements throughout the City, the project does not include any specific physical development. Therefore, the proposed project would not result in the direct or indirect destruction of a unique paleontological resource, and ***no impact*** would occur.

VIII. GREENHOUSE GAS EMISSIONS.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	☐	☐	☒	☐

Discussion

a. The City of Galt Draft CAP is a policy-level document that does not include any specific development. Accordingly, the proposed project would not result in generation of GHG emissions. Moreover, the goal of the Draft CAP is to reduce GHG emissions within the City of Galt to meet the State GHG emission reduction targets. For example, the Draft CAP includes policies designed to reduce GHG emissions from future development (Building Efficiency Measure 2, which phases is ZNE requirements for new construction), as well as policies designed to reduce GHG emissions from existing developments (Transportation Measure 3 encourages the expansion of the City's Safe Routes to School Program). Accordingly, the proposed project would have an overall long-term beneficial effect related to GHG emissions and global climate change. Therefore, a ***less-than-significant*** impact would occur.

b. The Draft CAP sets forth strategies to reduce GHG emissions within the City in an effort to comply with State Regulations, particularly the GHG emission reduction goals set forth in AB 32 and SB 32. The Draft CAP is also intended to yield other benefits as the City would be less dependent on fossil fuels, improve citizens quality of life, and increase financial savings. The Draft CAP also identifies how the City would achieve consistency with the statewide emissions limits and the 2017 Scoping Plan Update prepared by the CARB. It should be noted that the emissions limits within the 2017 Scoping Plan are intended to be consistent with the legislative goals of AB 32 and SB 32. As further discussed in the Draft CAP, Citywide emissions are anticipated to comply with statewide reduction goals by the year 2030. Despite, the implementation of the emissions reduction measures, the City's estimated GHG emissions in the year 2050 are anticipated to exceed the statewide per capita emissions goals included in the 2017 Scoping Plan. Although the Draft CAP does not demonstrate compliance with the per capita emissions goals for the year 2050, the emissions reduction measures included in the Draft CAP represent the maximum feasible emissions reductions that can be achieved by the City under current conditions. In order to ensure that citywide GHG emissions comply with statewide per capita emissions goals for the year 2050, the Draft CAP requires that the City prepare future updates to the CAP. Future updates to the Draft CAP would monitor progress made towards emissions reductions and would integrate new or updated emissions reductions strategies. Consequently, the Draft CAP ensures that emissions from the City would be controlled to the extent feasible, which would enable the City to develop further emissions reductions in the future and achieve compliance with emissions targets for the year 2050.

Therefore, the Draft CAP would be considered directly compliant with applicable plans, policies, and regulations adopted for the purpose of reducing the emissions of GHGs. The impact would be ***less than significant***.

IX. HAZARDS AND HAZARDOUS MATERIALS.

Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	✖	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	✖	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	✖	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	✖	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	✖
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	✖
g. Expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires?	☐	☐	✖	☐

Discussion

a-d. The proposed project is a policy-level document and does not involve any physical development. As such, the proposed project would not involve the routine transport, use, or disposal of hazardous materials, and would not create reasonably foreseeable upset and/or accidental conditions resulting in the release of hazardous or toxic materials. Because the City of Galt Draft CAP would not involve construction or operations that involve the transport, use, or disposal of hazardous materials, emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of a school. Furthermore, the proposed project would not directly involve development activity located on any sites that are included on a list of materials sites compiled pursuant to Government Code Section 65962.5. Thus, impacts associated with such would be ***less-than-significant***.

e. The City of Galt is located approximately four miles northwest of the Vetters Sky Ranch Airport. However, the Draft CAP would not involve any new development and, therefore, would not result in any safety hazards for people residing or working in the area related to airports or private air strips. As a result, ***no impact*** would occur.

f. The Draft CAP is a policy-level document that does not include any site-specific development plans or designs. The City of Galt has developed an Emergency Operations Plan (EOP) for operations in times of distress.[8] The EOP was adopted in order to help assist emergency responders and City staff in handling emergency situations. The Draft

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[8] City of Galt. *City of Galt Emergency Operations Plan.* March 6, 2012.

CAP would not physically interfere with the adopted EOP. Therefore, the Draft CAP would result in ***no impact*** regarding emergency response or evacuation plans.

g. According to the Sacramento County Draft Fire Hazard Severity Zones in LRA map, the City of Galt primarily consists of moderate fire hazard severity zones (FHSZ) and other urbanized areas of the City that are considered low risk fire areas.[9] In addition, according to the Galt 2030 General Plan EIR, portions of the City of Galt that are urbanized or used for irrigated agricultural practices are not at high risk for wildland fires.[10] Although the Draft CAP includes GHG reduction measures that may affect future development within the City, the Draft CAP would not directly result in any development or improvements that would increase the risk of wildland fires. Therefore, a ***less-than-significant*** impact would occur related to wildland fires.

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[9] California Department of Forestry and Fire Protection. *Sacramento County Draft Fire Hazard Severity Zones in LRA.* October 2, 2007.

[10] City of Galt. *City of Galt 2030 General Plan EIR*. [pg. 10-18]. April 2009.

X. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	✖	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	✖	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site;	☐	☐	✖	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	✖	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	✖	☐
iv. Impede or redirect flood flows?	☐	☐	✖	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	✖	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	✖	☐

Discussion

a,b,e The City of Galt Draft CAP is a policy-level document that would not risk violation of any water quality standards or waste discharge requirements. Additionally, the project would not affect the local groundwater supplies or interfere substantially with groundwater recharge.

The City of Galt Urban Water Management Plan (UWMP) was updated in June 2016, while the City's South Basin Groundwater Management Plan (GWMP) was adopted in October 2011.[11] The purpose of the UWMP is to maintain efficient use of urban water supplies and continue to promote conservation programs and policies. The Draft CAP includes emissions reduction measures intended to reduce GHG emissions within the City. Although some of the emissions reductions measures may affect future development within the City, the Draft CAP would not directly result in new development that would conflict with the City's UWMP or the South Basin GWMP. Moreover, as noted in Chapter 3, Regional Impacts of Climate Change, within the Draft CAP, climate change threatens the continued recharge of groundwater in the region. By implementing GHG reduction measures, the Draft CAP would help sustainable management of the City's existing groundwater resources.

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[11] City of Galt. *2015 Urban Water Management Plan Update*. June 2016.

Consequently, the proposed project would not substantially degrade surface or ground water quality or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Thus, a ***less-than-significant*** impact would occur.

c,d. The Draft CAP is a policy-level document that does not include any site-specific development and, thus, would not result in substantial erosion, affect drainage patterns, or increase runoff. Overall, measures included within the Draft CAP would encourage infill development and an urban tree program which could help reduce erosion and runoff.

While the City of Galt contains various areas subject to flooding, the Draft CAP does not include any new development within the City. Accordingly, implementation of the Draft CAP would not substantially alter the existing drainage patterns within the City, including through the alteration of the course of a stream or river or through the addition of impervious surfaces. Because the project would not alter existing drainage patterns, the project would not result in substantial erosion or siltation, substantially increase the rate or amount of surface runoff, create or contribute runoff water which would exceed the capacity of existing drainage systems, or impede or redirect flood flows.

Although the Draft CAP encourages infill development and development that would reuse existing development sites in the City, such development would be initiated by private entities and development would be subject to project-specific environmental review. Additionally, the City of Galt is not located near a coastline so a tsunami is not likely to occur within the area. Furthermore, the Draft CAP does not include development and would not risk release of pollutants by being located in a seiche zone. Therefore, a ***less-than-significant*** impact related to such would occur.

XI. LAND USE AND PLANNING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	✖
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	✖	☐

Discussion

a. The City of Galt Draft CAP is a policy-level document that does not include any direct development. The Draft CAP is intended to help the City of Galt meet GHG reduction targets. Therefore, the proposed project would have **no impact** related to the physical division of an established community.

b. The Draft CAP includes proposed measures that would help the City of Galt meet GHG emission reduction targets imposed by the State. The State's emissions reduction targets are specifically designed to avoid environmental effects related to climate change; therefore, the Draft CAP's compliance with such reduction targets demonstrates a compliance with Statewide regulations related to avoiding the environmental effects of climate change. The Draft CAP reduction measures would be compliant with, or include direct implementation of, City documents, building code requirements, development standards, design guidelines, and standard practices. Such standards are evaluated on a project-by-project basis and include, but are not limited to, compliance with regulations such as California's Title 24 Building Energy Efficiency Standards, the City's Municipal Code, the State's Water Efficient Landscape Ordinance, and the City's Bicycle Transportation Plan.

To ensure success of the Draft CAP, the City would integrate the goals and strategies of the CAP into other local plans, programs, and activities. As the City moves forward with any future General Plan updates, Municipal Code updates, Housing Element updates, and other planning documents, staff would ensure the updates are consistent with the CAP. Upon approval and adoption, all development within the City of Galt would be required to comply with the CAP, which is intended to reduce GHG emissions to appropriate levels and mitigate the environmental effects of climate change. Therefore, the proposed project would not conflict with any applicable land use plan, policy, or regulations and a ***less-than-significant*** impact would occur.

XII. MINERAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion

a,b. The City of Galt is within Sacramento County's General Plan area, which analyzes mineral resources within the County. According to the Sacramento County General Plan, the mineral resource zone closest to the City of Galt is located near New Hope Road, which is east of the City boundaries. The Draft CAP is intended to reduce GHG emissions and does not include any physical development. Therefore, the proposed project would not result in the loss of availability of a known mineral resource or locally-important mineral resource recovery site, and ***no impact*** would occur.

XIII. NOISE.

Would the project result in:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	✖	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	✖	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	✖

Discussion

a,b. The City of Galt Draft CAP is a policy-level document with the sole purpose of meeting Statewide GHG emission reduction targets. The GHG emission reduction measures included in the Draft CAP do not propose specific development, rather, the measures would aim to reduce overall vehicle use, and, thus, traffic noise would be reduced. For example, the Draft CAP includes measures that encourage the use of alternative modes of transportation, including bike and walking paths, which would reduce the total vehicle miles traveled (VMT) within the City. In addition, the Draft CAP supports installation of electric vehicle charging stations at existing and future commercial developments within the City. Electric vehicle charging stations would promote the use of electric and hybrid vehicles, which are quieter than gasoline-powered vehicles, which could result in reduced street noise. Implementation of the measures set forth in the Draft CAP may require future improvements that would result in temporary increased noise levels; however, the improvements would be subject to project-specific environmental review and would be required to comply the City's General Plan and Municipal Code standards. Because the Draft CAP does include direct development, the proposed project would not increase noise generation or groundborne vibration and a ***less-than-significant*** impact would occur.

c. The City of Galt is located approximately four miles northwest of the Vetters Sky Ranch Airport. However, the Draft CAP would not involve any specific development and, therefore, would not be located within two miles of a public or private airport, or expose people residing or working in the area to excessive noise levels. As a result, ***no impact*** would occur.

XIV. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	☐	☒
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a,b. The Draft CAP is a policy-level document that does not include direct development of new homes or businesses and would not induce substantial population growth. While buildout is expected to occur in the City of Galt through the year 2050, the Draft CAP would not directly or indirectly induce any population growth by proposing new projects in an undeveloped area or extend major infrastructure. Furthermore, the Draft CAP would not directly result in development or land disturbance, and, thus, the proposed project would not displace any existing housing or people and would not necessitate the construction of replacement housing elsewhere. Therefore, ***no impact*** would occur related to population and housing.

XV. PUBLIC SERVICES. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	☐	☒
b. Police protection?	☐	☐	☐	☒
c. Schools?	☐	☐	☐	☒
d. Parks?	☐	☐	☐	☒
e. Other Public Facilities?	☐	☐	☐	☒

Discussion

a-e. The Galt 2030 General Plan EIR determined that buildout of the General Plan would increase the overall demand on fire and police protection services. However, the proposed Draft CAP does not include direct development, and, thus, would not increase the need for fire and police protection beyond what was previously anticipated in the City's General Plan EIR. Furthermore, implementation of the Draft CAP would not increase demand for any schools, parks, or other public facilities, the construction of which could cause significant environmental impacts. Thus, the proposed project would result in ***no impact***.

XVI. RECREATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

a,b. The City of Galt Draft CAP is a policy-level document intended to reduce GHG emissions citywide. The proposed project would not result in direct development and, thus, would not increase the use of existing park facilities or substantially deteriorate existing facilities. Additionally, the Draft CAP would not result in any direct population growth requiring the construction or expansion of any recreational facilities. Therefore, implementation of the Draft CAP would have ***no impact*** regarding recreation.

XVII. TRANSPORTATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d. Result in inadequate emergency access?	☐	☐	☐	☒

Discussion

a,b. The City of Galt Draft CAP is a policy-level document, intended to help the City reduce GHG emissions to meet the State's reduction targets. The GHG emission reduction measures set forth in the Draft CAP would encourage alternative modes of transportation, such as increased use of public transit, bicycling, and pedestrian infrastructure. The Draft CAP would be consistent with the City's General Plan and Municipal Code, requiring any future projects adhere to local and State standards. For example, Transportation Measure 1 ensures compliance with the City of Galt Bicycle Transportation Plan to improve bicycle infrastructure. Additionally, in compliance with General Plan Policy COS-6.4, which focuses on purchasing alternatively-fueled vehicles for City use, Transportation Measure 4 of the Draft CAP directs the City to optimize the municipal vehicle fleet to increase fuel efficiency and investigate the use of alternative fueled vehicles where feasible.

The Draft CAP demonstrates consistency with CEQA Guidelines section 15064.3, subdivision (b) through many of the transportation and land use focused measures. For instance, Transportation Measure 8 promotes local goods and businesses in an effort to reduce VMT related to the movement of goods. Furthermore, Transportation Measures 1, 2, and 3 promote alternative modes of transportation, all of which reduce VMT. Transportation Measure 10 is specifically designed to reduce VMT through participation in the Sac Region 511 or similar programs. Finally, Land Use Measure 1 and 2 would encourage higher density development within the City's existing development footprint; higher density development often allows for a reduction in VMT as more residences are in proximity to varied land uses and public transit.

For the aforementioned reasons and because the Draft CAP would not include any direct development, the proposed project would not conflict with any program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities nor would the Draft CAP be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). Thus, a ***less-than-significant*** impact would occur.

c,d. As discussed above, the City of Galt Draft CAP is a policy-level document that would not include any direct development. While the measures set forth within the Draft CAP are primarily intended to reduce GHG emissions, many of the measures would have a secondary effect of reducing vehicle emissions and improving the transportation/circulation system within the City. Consequently, implementation of the Draft CAP would have a long-term beneficial effect related to transportation and circulation. Therefore, the CAP would not increase hazards due to a design feature or incompatible uses or result in inadequate emergency access, and ***no impact*** would occur.

XVIII. TRIBAL CULTURAL RESOURCES. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	☐	☐	☒	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

Discussion

a,b. As discussed in Section V, Cultural Resources, the City of Galt is known to contain cultural and tribal resources of significance. However, because the City of Galt Draft CAP is a policy-level document that does not include any direct development or physical changes to the environment and would not involve any ground-disturbing activities, the proposed project would not have the potential to directly affect any Tribal Cultural Resources. Therefore, a ***less-than-significant*** impact would result related to Tribal Cultural Resources.

XIX. UTILITIES AND SERVICE SYSTEMS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	✖	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	✖	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	✖	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	✖	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	✖	☐

Discussion

a-c. The City of Galt Draft CAP is a policy level document that would not involve any direct development. Rather, the Draft CAP would require implementation of GHG emission reduction measures to meet the standards set by the State of California. The Draft CAP would not require the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, or natural gas facilities. For example, Building Efficiency Measure 2 of the Draft CAP establishes the goal to achieve zero net energy for new residential and commercial developments. In addition, implementation of the Draft CAP would not induce or increase water usage within the City or impact stormwater drainage. Land Use Measure 3 recommends the establishment of an Urban Tree Management Plan, which is intended to reduce the urban heat island effect and stormwater runoff. Waste Measure 2 could also include the use of a biodigester at the City's wastewater treatment plant in order to collect waste and sludge. Considering the proposed GHG reduction measures within the Draft CAP, and the potential negative impacts that could occur related to water supply and stormwater related flooding due to climate change, the proposed project would have a long-term beneficial effect related to the water supply, waste water treatment, stormwater drainage, electric power or natural gas facilities. Overall, based on the above, impacts would be ***less than significant***.

d,e. The Draft CAP would not directly involve any construction or development within the City. Any improvements that could result from implementation of GHG reduction measures would be required to comply with all applicable federal, State, and City goals, policies, and regulations related to solid waste. The Draft CAP contains GHG emission reduction measures that, if implemented, would help reduce the amount of solid waste generated in the City of Galt. For example, as mentioned above, Waste Measure 2 includes organic diversion goals to reduce the amount of waste produced within the City of Galt. In addition, Waste Measure 3 proposes addition of a biodigester at wastewater treatment plants and landfills to control emissions from organic waste. Due to such measures, the proposed project would have a secondary beneficial effect related to solid waste generation and disposal. For the aforementioned reasons and because the Draft CAP would not result in any direct development, the proposed project would not affect the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals and would comply with federal, State, and local management reduction statutes and regulations. Therefore, a ***less-than-significant*** impact would occur related to solid waste.

XX. WILDFIRE.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	✖
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	✖
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	✖
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	✖

Discussion

a-d. The City of Galt is not located in a State Responsibility Area or a Very High Fire Hazard Severity Zone.[12] The outskirts of the City primarily consist of Moderate Fire Hazard Severity Zones, while the developed areas of the City are not substantially at risk of wildfires. Furthermore, the Draft CAP would not include any direct development and would not exacerbate fire risk. Therefore, the proposed project would result in ***no impact*** related to wildfire.

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[12] California Department of Forestry and Fire Protection. *Sacramento County Draft Fire Hazard Severity Zones in LRA.* October 2, 2007.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

a. The intent of the Draft CAP is to reduce GHG emissions from operations within the City of Galt through the implementation of GHG reduction measures. The proposed Draft CAP is designed to offset the negative impacts of climate change on the environment and establish emissions thresholds that would benefit the environment and humans in the long term. The measures included in the Draft CAP promote alternative modes of transportation, sustainable land use, energy efficiency, and decreased waste, which would all contribute to improving the quality of the environment. As discussed throughout the IS/ND, the Draft CAP would not include any direct development or physical changes to the existing environment. As specifically discussed in the Biological Resources and Cultural Resources sections of this IS/ND, the proposed project would not reduce the habitat of a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate protected plant or animal species, or eliminate important examples of the major periods of California history or prehistory. Therefore, a ***less-than-significant*** impact would occur.

b. Global climate change is, by nature, a cumulative impact. Emissions of GHG cumulatively contribute to the significant adverse environmental impacts of climate change (e.g., sea level rise, impacts to water supply and water quality, public health impacts, impacts to ecosystems, impacts to agriculture, and other environmental impacts). Implementation of the Draft CAP would result in reduction of GHG emissions associated with buildout of the City of Galt, to levels that meet the statewide targets. Reducing the City of Galt's GHG emissions would reduce the cumulative effects of climate change. Thus, the proposed project would have a beneficial effect on the cumulative environment. Based on the above, and the because the proposed project would not include any direct development, a ***less-than-significant*** impact would occur.

c. The City of Galt Draft CAP is a policy-level document that does not involve any direct development, and, thus, would not have substantial adverse effects on human beings. As discussed throughout this IS/ND, the Draft CAP is intended to reduce GHG emissions in compliance with Statewide emissions targets. For example, the Draft CAP would include reduction measures aimed at reducing traffic congestion, improving air quality, and promoting energy efficiency within the City of Galt. Polluted air can have permanent health effects, and, thus, the above factors resulting from the Draft CAP would ultimately benefit human beings in the future. Overall, the Draft CAP would have a ***less-than significant*** impact related to adverse effects on human beings.

APPENDIX

CLIMATE ACTION PLAN

City of Galt Climate Action Plan

Prepared for
the City of Galt

December 2019

Prepared by

RANEY PLANNING & MANAGEMENT, INC. 20 years

1501 Sports Drive, Suite A, Sacramento, CA 95834

Table of Contents

1 INTRODUCTION

California has affirmed the need for action to reduce statewide greenhouse gas (GHG) emissions through the adoption of multiple executive orders under Governors Arnold Schwarzenegger and Jerry Brown as well as legislative actions including Assembly Bill (AB) 32 and Senate Bill (SB) 32. Both AB 32 and SB 32 establish statewide GHG reduction goals. The majority of the reductions mandated by AB 32 and SB 32 would be accomplished through statewide programs; however, implementation of local measures to reduce GHG emissions will likely be needed to achieve the statewide reductions mandated by AB 32 and SB 32. The City of Galt's efforts regarding GHG emissions reductions are intended to work in concert with the efforts being undertaken on a statewide level. Thus, the City of Galt has prepared a Climate Action Plan (CAP), implementation of which would establish consistency between the City of Galt's policies and statewide reduction requirements.

1.1 PURPOSE AND SCOPE OF THE CAP

This CAP is intended to support the sustainable development of the City, and continued economic prosperity of the region by reducing GHG emissions in an attempt to curtail the anticipated impacts resulting from climate change. In doing so, the CAP would streamline future environmental review of development projects in the City of Galt by following the California Environmental Quality Act (CEQA) Guidelines for a Qualified GHG Reduction Strategy. The CAP will also identify how the City will achieve consistency with the statewide emissions limits and the 2017 Scoping Plan Update prepared by the California Air Resources Board (CARB).

The following sections summarize the content included in subsequent chapters of the CAP.

Expected Regional Climate Change Impacts

The City of Galt has identified potential climate change impacts specific to the City and the surrounding region. In general, climate change has begun shifting precipitation patterns and surface temperatures away from the reliable historic patterns that human society has come to rely on. For instance, climate change resulting from human emissions of GHGs may result in increased surface air temperatures throughout the City of Galt and surrounding region. Increased surface air temperatures can result in human health effects such as heat exhaustion and heat stroke, as well as increased rates of respiratory problems related to exacerbated air pollution, and increased costs to businesses related to higher demands for landscaping or agricultural irrigation. Increased surface air temperatures represent only one of many potential regional impacts related to climate change, other potential impacts may include, but are not necessarily limited to, reduced agricultural productivity, increased public health risks, and decreased availability of water resources. An in-depth discussion of such regional impacts is included in Chapter 3 of this CAP.

GHG Baseline Inventory

In 2009, the Sacramento County Department of Environmental Review and Assessment prepared a baseline GHG inventory for all unincorporated areas of the County as well as the incorporated cities of Galt, Citrus Heights, Elk Grove, Folsom, Isleton, Rancho Cordova, and Sacramento. The baseline inventory presented estimated emissions for the year 2005, in order to facilitate Countywide compliance with statewide legislation related to reducing GHG emissions. Results of the baseline GHG inventory prepared by the County in 2009 are presented in Chapter 4, Emissions Quantification, of this CAP. Based on the results of the 2009 emissions inventory, Sacramento County prepared and adopted a CAP Strategy and Framework Document, as well as a County Government Operations CAP document.

Since adoption of the foregoing documents, the County has begun the process of preparing a comprehensive Communitywide CAP that will focus on reducing GHG emissions from the unincorporated areas within the County. Preparation of the County’s Communitywide CAP included updating the 2009 baseline inventory for unincorporated areas within the County. Although the 2009 GHG baseline inventory was updated for unincorporated areas of the County, the baseline inventories for incorporated cities within the County, including the City of Galt, was not updated.

Since the preparation of the County’s 2009 GHG baseline inventory significant progress has been made to refine and improve the methodology for emission estimation. As such, in 2018, Raney Planning & Management, Inc. (Raney) prepared an update to the County’s 2009 GHG baseline inventory specifically for the City of Galt. The updated GHG baseline inventory relied on the most-up-to-date methodology provided by the Statewide Energy Efficiency Collaborative (SEEC). SEEC is an alliance of private companies, public utility companies, and non-governmental organizations that provide information and technical assistance to California cities and counties to aid in the reduction of GHG emissions and increase energy efficiency. To facilitate such goals, the SEEC prepared ClearPath California. ClearPath California is a suite of tools designed to measure and track GHG emissions within communities in California. Based on user-provided data such as community energy use, vehicle use, water consumption, wastewater treatment, and solid waste generation, ClearPath provides GHG inventories for both the operation of municipal governments and the larger community that such municipalities serve. Raney relied on information provided by various departments within the City of Galt, including information regarding the City’s vehicle fleet, information regarding the City’s water and wastewater infrastructure, and information related to the City’s facilities. Further information used in drafting this CAP was provided by Cal-Waste, the solid waste provider for the City, South County Transit, and the Sacramento Municipal Utility District (SMUD).

In addition to allowing for the inventory of GHG emissions, ClearPath provides a centralized platform for forecasting future GHG emissions and planning for the control and reduction of emissions. Further discussions regarding emissions forecasting is provided in Chapter 4 of this CAP, while information regarding the control and reduction of GHG emissions is presented in Chapter 5 of this CAP.

GHG Emissions Forecasting and Reduction Targeting

In addition to allowing for the quantification of current GHG emissions, the ClearPath suite of tools allows for the forecasting of future emissions. Forecasting of future emissions for the City of Galt is based off of buildout of the City's adopted General Plan.[1] Buildout of the City's adopted General Plan will involve growth within the City in the form of new development and population growth. Based on the City's estimated growth rates, future population, and existing GHG emissions, ClearPath can generate emissions estimates for various future dates. In compliance with Statewide reduction targets adopted by AB 32 and SB 32, and in keeping with the methodology for emissions estimations presented in the State's 2017 Scoping Plan Update, emissions estimates for the years 2030 and 2050 were prepared for the City of Galt.

As further discussed in Chapter 4, of this CAP, the State's 2017 Scoping Plan Update recommends that local governments set future emissions goals on a per capita basis. Specifically, the 2017 Scoping Plan Update endorses the use of community-wide goals of per capita emissions not to exceed six metric tons of CO_2e per year (MT CO_2e/yr) by 2030, and per capita emissions not to exceed two MT CO_2e/yr by 2050. Per capita emissions as included in the 2017 Scoping Plan Update are considered consistent with the statewide emissions limits established by AB 32, SB 32, SB 391, and Executive Order S-3-05 and B-30-15.[2] Thus, based on the City's adopted General Plan, the future population of the City of Galt was estimated for the years 2030 and 2050, which, when combined with the maximum per capita emissions rates presented in the 2017 Scoping Plan, allowed for the establishment of maximum emissions rates for the years 2030 and 2050.

The difference between the estimated emissions for the years 2030 and 2050, as forecasted by ClearPath and discussed above, and the maximum emissions rates quantified in compliance with the State's 2017 Scoping Plan Update provides a level of GHG emissions reductions necessary to ensure that growth within the City of Galt occurs in compliance with the State identified emissions reductions goals. Achievement of such emissions reductions goals is a crucial means of protecting the City from the potential negative effects of climate change discussed in Chapter 3 of this CAP.

Details regarding the methodologies, calculations, and results of emissions forecasting and emissions reduction targeting are presented in Chapter 4 of this CAP.

GHG Emissions Reduction Measures and Implementation

This CAP includes measures to reduce GHG emissions that could otherwise result from local government and community-wide activities within the City of Galt. The measures are organized into focus areas, each of which address the major sources of emissions associated with the City.

Emissions reduction measures included in this CAP will be implemented through actions undertaken by the municipal government of the City of Galt, or by private land owners and developers within the City. Requirements for future development to adhere to this CAP will be

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[1] City of Galt. *2030 Galt General Plan*. April 2009.

[2] California Air Resources Board. *The 2017 Climate Change Scoping Plan Update*. January 20, 2017.

identified in a Sustainability Checklist prepared in compliance with this CAP. The Sustainability Checklist will be included within the City's project review process.

1.2 PLAN AREA AND LOCAL SETTING

The City of Galt is located along State Route (SR) 99 in Northern California's Central Valley, between the cities of Sacramento and Stockton. From the City's nineteenth century agrarian roots to the diverse community of today, Galt residents have valued its friendly, small-town atmosphere. The City's rich history continues to be evident in some of the City's older buildings and the compact urban form of the City's Downtown area.

Currently, the center of Galt's commercial activity is located at the intersection of C Street and Lincoln Way, with the C Street corridor between Lincoln Way and SR 99 providing the majority of commercial space for the Downtown area. The City is well-known in Northern California for its Galt Market, one of Northern California's largest outdoor retail and wholesale markets with room for 500 vendors in over 850 spaces. The Galt Market offers free admission and free parking and attracts an estimated 750,000 visitors each year.

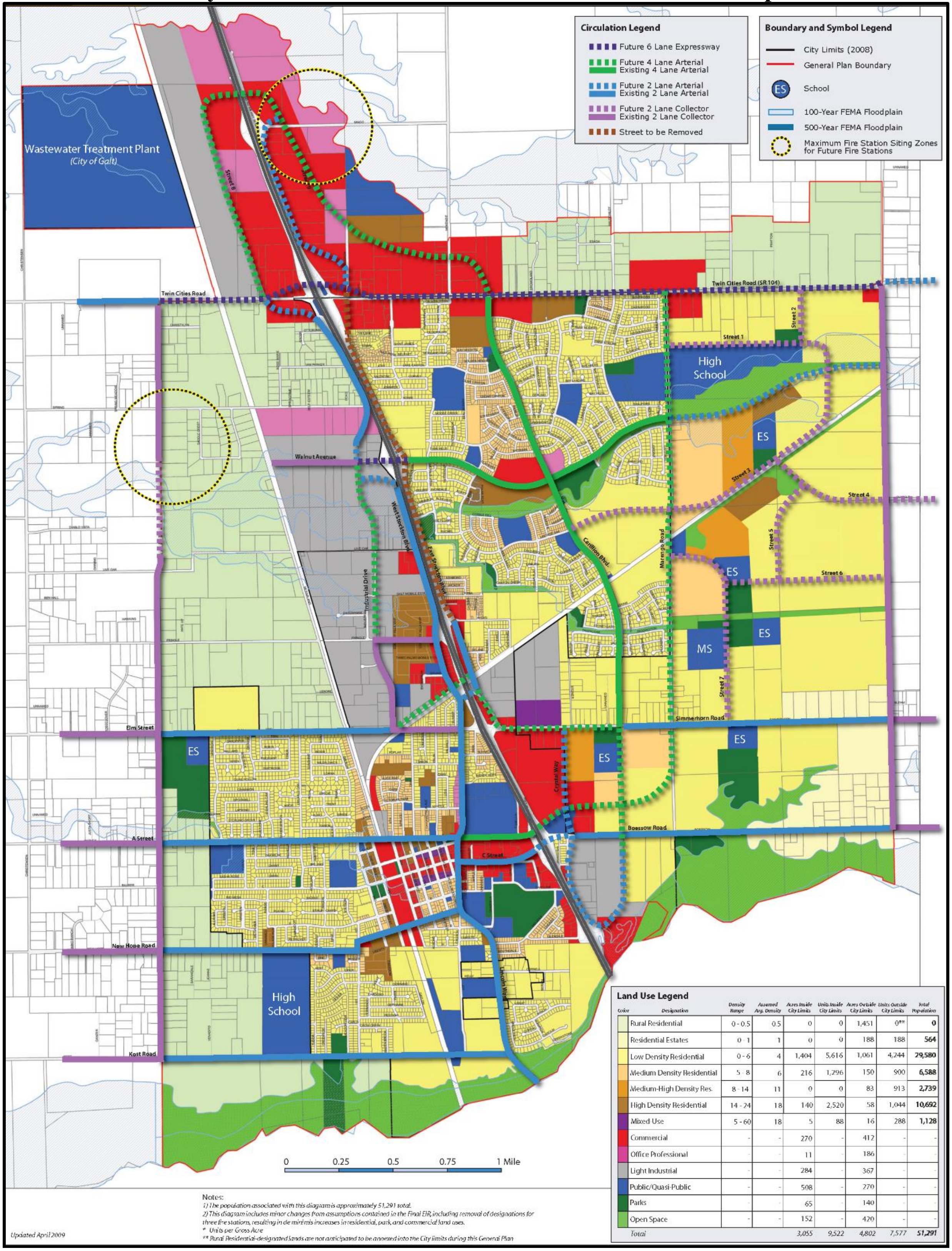
This CAP pertains to all areas of the City included within the City of Galt's General Plan Boundary, as shown in Figure 1 below, which is coterminous with the City's Sphere of Influence. Generally, the General Plan Boundary extends from the Sacramento-San Joaquin County line in the south, which is demarcated by Dry Creek, to Laguna and Skunk Creeks in the north, Cherokee Lane in the east, and Sargent/Midway Road in the west.

1.3 LOCAL AND REGIONAL PLANNING

New development and redevelopment within the City of Galt must adhere to a number of City policy documents, building code requirements, development standards, design guidelines, and standard practices that collectively further the goals and actions included in the CAP. Below is a list of those measures which are applied on a project-by-project basis, and which aid in implementing the CAP:

- Compliance with California's Title 24 Building Energy Efficiency Standards for Residential and Non-Residential Buildings;
- Compliance with Section 18.52.060 of the City's Municipal Code and General Plan Policy COS-3.2 related to tree preservation;
- Incorporation of street trees and landscaping consistent with the City's Municipal Code;
- Consistency with the State's Water Efficient Landscape Ordinance (AB 1881); and
- Provision of bicycle facilities and infrastructure as may be required by the City's 2011 Bicycle Transportation Plan.

Figure 1
City of Galt General Plan Boundaries and Land Use Map



Land Use Legend

Color	Designation	Density Range	Assumed Avg. Density	Acres Inside City Limits	Units Inside City Limits	Acres Outside City Limits	Units Outside City Limits	Total Population
	Rural Residential	0 - 0.5	0.5	0	0	1,451	0**	**0**
	Residential Estates	0 - 1	1	0	0	188	188	**564**
	Low Density Residential	0 - 6	4	1,404	5,616	1,061	4,244	**29,580**
	Medium Density Residential	5 - 8	6	216	1,296	150	900	**6,588**
	Medium-High Density Res.	8 - 14	11	0	0	83	913	**2,739**
	High Density Residential	14 - 24	18	140	2,520	58	1,044	**10,692**
	Mixed Use	5 - 60	18	5	88	16	288	**1,128**
	Commercial	-	-	270	-	412	-	-
	Office Professional	-	-	11	-	186	-	-
	Light Industrial	-	-	284	-	367	-	-
	Public/Quasi-Public	-	-	508	-	270	-	-
	Parks	-	-	65	-	140	-	-
	Open Space	-	-	152	-	420	-	-
	Total			*3,055*	*9,522*	*4,802*	*7,577*	***51,291***

Notes:
1) The population associated with this diagram is approximately 51,291 total.
2) This diagram includes minor changes from assumptions contained in the Final EIR, including removal of designations for three fire stations, resulting in de minimis increases in residential, park, and commercial land uses.
** Units per Gross Acre*
*** Rural Residential-designated lands are not anticipated to be annexed into the City limits during this General Plan*

Within the broader region, Sacramento County is currently working on a *Climate Action Plan – Communitywide Greenhouse Gas Reduction and Climate Change Adaptation* (Communitywide CAP) project which will complete the second phase of the County's multi-phase CAP process.[3]

In addition to the City and County, various other local agencies provide guidance and regulations pertaining to air quality and greenhouse gasses. The City of Galt is within the boundaries of the Sacramento Valley Air Basin (SVAB) and under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). SMAQMD is responsible for monitoring air pollution within the SVAB and for developing and administering programs to reduce air pollution levels below the health-based standards established by the State and federal governments. As part of SMAQMD's efforts to reduce GHG emissions within the district in compliance with AB 32 and SB 32, SMAQMD has adopted thresholds of significance for GHG emissions from new projects. SMAQMD's threshold for land development and construction projects is 1,100 metric tons of CO_2 equivalents ($MTCO_2e$/yr), the common unit of measurement for GHG emissions. If a proposed project results in emissions in excess of 1,100 $MTCO_2e$/yr during either construction or operation, the project would be anticipated to result in a significant impact related to GHG emissions.

Development in the City of Galt is also subject to the regulations of the Sacramento Area Council of Governments (SACOG). SACOG is an association of local governments in the six-county Sacramento Region. Its members include the counties of El Dorado, Placer, Sacramento, Sutter, Yolo, Yuba and the 22 cities within. As the designated metropolitan planning organization for the region, SACOG is responsible for ensuring that transportation projects and plans do not impede the region's clean air goals. As part of the region's overall effort to meet clean air standards and achieve conformity with transportation plans, SACOG partners with the air districts to promote clean-fuel vehicles and develop mobile source control measures through the Sacramento Emergency Clean Air and Transportation (SECAT) program. In addition, SACOG is responsible for publishing and regularly updating the Sacramento region's Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). Consistent with SB 375, the MTP/SCS is intended to integrate land use and transportation planning to ensure that new and existing development is able to meet the GHG reduction goals established in relevant State legislation, including AB 32 and SB 32. Projects that are consistent with the adopted MTP/SCS are eligible for CEQA streamlining. The environmental analysis for projects that are consistent with adopted MTP/SCS need not analyze GHG emissions from cars and light duty truck trips related to the project.

1.4 USING THE CAP

To ensure the success of this CAP, the City will integrate the goals and strategies of this Plan into other local and regional plans, programs, and activities. As the City moves forward with updates to the Municipal Code, various specific plans, updates to the City's Housing Element, and other planning documents, staff will ensure that such documents support and are consistent with the CAP. CAP implementation will also require City leadership to execute strategies and report on the

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[3] Sacramento County. *Communitywide Greenhouse Gas Reduction and Climate Change Adaptation (Communitywide CAP) Project*. Available at: http://www.per.saccounty.net/PlansandProjectsIn-Progress/Pages/CAP.aspx. Accessed June 2018.

progress of implementation. The City shall designate a sustainability coordinator who will be responsible for coordinating GHG reduction efforts between departments and will designate staff to monitor and report on the progress of the CAP. The sustainability coordinator is anticipated to be an existing member of the City of Galt staff who will aide in monitoring and reporting the progress of the implementation of this CAP. For measures to be implemented by the municipal government, this CAP identifies the responsible department for each measure and offers time frames for implementing each strategy. Lastly, successful implementation requires regular monitoring and reporting. As noted previously, City staff will rely on ClearPath's long-term implementation monitoring tools to track implementation progress and report to the City Council. Details regarding future updates to this CAP, as well as the incorporation of CAP consistency analyses in future development projects are presented in Chapter 6, Implementation, of this CAP.

2 CLIMATE CHANGE SCIENCE AND BACKGROUND

2.1 PRINCIPLES OF THE EARTH'S CLIMATE

The following chapter will provide a brief overview of the scientific understanding of the earth's climate system, with specific focus on the principles of climate change.

Climate vs. Weather

Although sometimes used interchangeably, the terms "climate" and "weather" represent two related, but different concepts. Weather refers to the immediate state of the atmosphere. Questions such as, is it hot or cold outside right now; what is the humidity today; and how cloudy will it be this afternoon, are all concerned with the day-to-day conditions of the atmosphere. Climate, on the other hand, is the average of a given location's weather over time. Because climate information is considered on a longer temporal time scale than weather, climate is often discussed in statistical terms and can be used to answer such questions as what is the average temperature in the City of Galt during the month of June; how many inches of rain does the City of Galt receive each year; and what month is usually the coldest month of the year in the City of Galt. Because climate is the pattern of weather over a given time, questions regarding climate can be spatially and temporally broad. For instance, discussions on climate can focus on the City of Galt, California, North America, or the entire globe, and can concern periods of weeks, years, decades, millennia, and beyond.[4]

Understanding a region's climate provides important insights into a regions average weather, as well as a region's likelihood of experiencing extreme weather events such as heat waves, storms, floods and droughts.[5] Extreme weather events are often the most attention-grabbing features of a region's climate, consider drought in California or hurricanes in Florida; however, average climactic conditions can also greatly impact a region's suitability for agriculture, forestry, and general human habitation. For instance, California's Mediterranean type climate, with mild wet winters and dry summers, makes the State uniquely suited for agricultural activities.

Factors Controlling Earth's Climate

Considering the importance of the region's climate to our society, we must understand the factors that affect climate. The City of Galt's climate is interconnected with the climate of the State, continent, and globe in what is called a climate system. The main driver of the earth's climate system, and thus the continent's, state's and City's climate, is energy radiated by the sun hitting

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[4] National Snow & Ice Data Center. *All About Climatology and Meteorology*. Accessible at https://nsidc.org/cryosphere/arctic-meteorology/climate_vs_weather.html. Accessed on January 20, 2017.

[5] U.S. Global Change Research Program. *GlobalChange.gov*. Accessible at http://www.globalchange.gov/. Accessed January 2017.

the earth.[6] Several factors can alter the amount of solar energy hitting the earth such as: the distance of the earth from the sun, the intensity of solar activity, and the tilt of the earth on the earth's axis. However, these factors are generally stable, and act on what is known as a geologic timescale, often discussed in hundreds of thousands, to millions and billions of years. Because such factors are stable and predictable, the amount of solar energy hitting the earth is known and has been relatively constant over much of human history.[7]

Although humans cannot change the amount of solar energy reaching the Earth, humans can alter how much of this incoming heat remains. The Earth's atmosphere functions as a natural heat regulation system by balancing incoming solar energy from the sun and outgoing thermal radiation, which is first absorbed from the sun and then reemitted by the land, oceans, and atmosphere. This naturally occurring phenomenon, known as the greenhouse effect, enables the Earth to have equilibrium temperatures supportive of life.

Certain gases intensify the greenhouse gas effect, however, by trapping thermal radiation and not emitting them out into space again – like a blanket or the walls of a greenhouse. These greenhouse gases (GHGs) include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and fluorinated gases (such as hydrofluorocarbons or HFCs). The higher the concentration of greenhouse gases in the atmosphere, the thicker the glass walls of the greenhouse, and the more heat is trapped on Earth. This is illustrated in Figure 2 below.

On a geologic timescale, over hundreds of thousands of years, the Earth has cycled between cooler periods of glaciation (ice ages) and warmer interglacial periods. Natural changes in the atmospheric concentration of carbon dioxide and other GHGs contributed to these gradual changes in the Earth's average temperatures and climate conditions, with higher levels of GHGs associated with warmer, tropical periods and lower levels linked to ice ages.[8]

While the amount of GHGs in the atmosphere has fluctuated naturally in the Earth's past, they are now rising at unprecedented rates due to human activities such as the burning of fossil fuels (coal, gasoline, and natural gas), land conversion, industrial processes (e.g., cement production and artificial nitrogen fixation for fertilizer), food production, and many other daily activities.[9]

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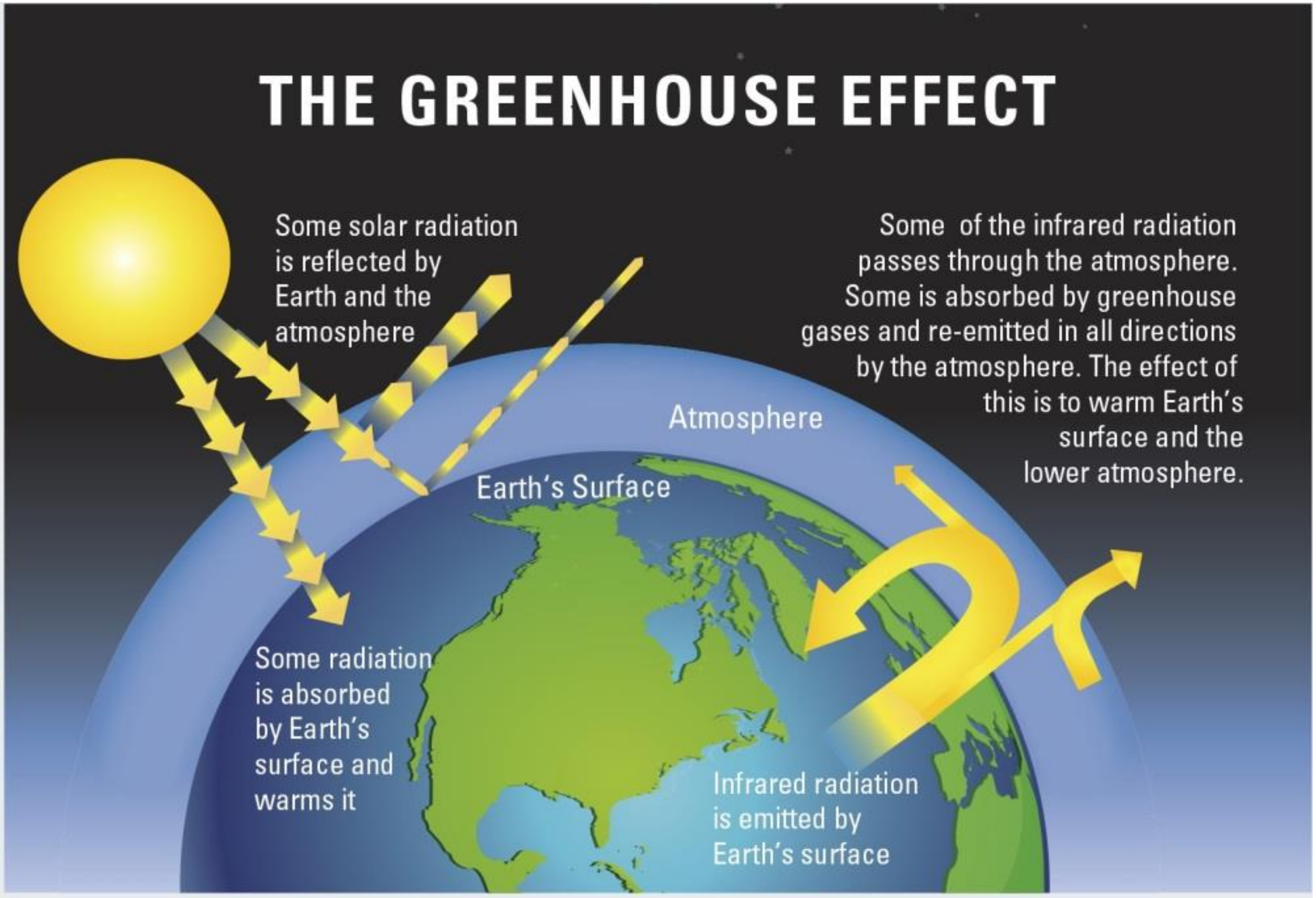
[6] Masson-Delmotte, V., M. Schulz, A. Abe-Ouchi, J. Beer, A. Ganopolski, J.F. González Rouco, E. Jansen, K. Lambeck, J. Luterbacher, T. Naish, T. Osborn, B. Otto-Bliesner, T. Quinn, R. Ramesh, M. Rojas, X. Shao and A. Timmermann, 2013: *Information from Paleoclimate Archives. In: Climate Change 2013: The Physical Science Basis.* Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[7] National Aeronautics and Space Administration. *Paleoclimatology: Explaining the Evidence*. Available at http://earthobservatory.nasa.gov/Features/Paleoclimatology_Evidence/. Accessed on March 10, 2017.

[8] Masson-Delmotte, V., M. Schulz, A. Abe-Ouchi, J. Beer, A. Ganopolski, J.F. González Rouco, E. Jansen, K. Lambeck, J. Luterbacher, T. Naish, T. Osborn, B. Otto-Bliesner, T. Quinn, R. Ramesh, M. Rojas, X. Shao and A. Timmermann, 2013: *Information from Paleoclimate Archives. In: Climate Change 2013: The Physical Science Basis.* Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[9] *Ibid*.

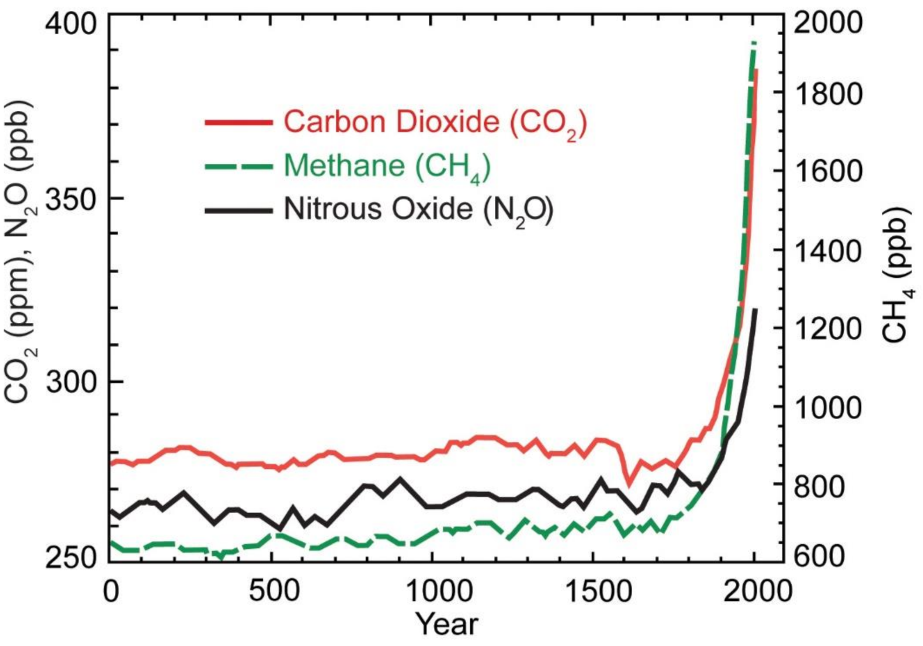
Figure 2
The Greenhouse Effect



Source: The Royal Society. The Basics of Climate Change. Available at https://royalsociety.org/topics-policy/projects/climate-change-evidence-causes/basics-of-climate-change/. Accessed July, 2018.

These activities have been releasing vast quantities of GHGs into the atmosphere continuously since the Industrial Revolution (Figure 3 and Figure 4). The increases of GHGs in the atmosphere can be thought of as thickening the glass walls of the Earth's greenhouse, causing more and more heat to be trapped within the Earth's system. This leads to warmer global average temperatures (see Figure 4 and Figure 5), which in turn contributes to rising sea levels, more droughts, and more extreme weather conditions due to the added energy in global climate systems (Figure 4). Current GHG levels are at their highest in the past 800,000 years – before modern humans appeared on Earth – and continue to increase at unprecedented rates.

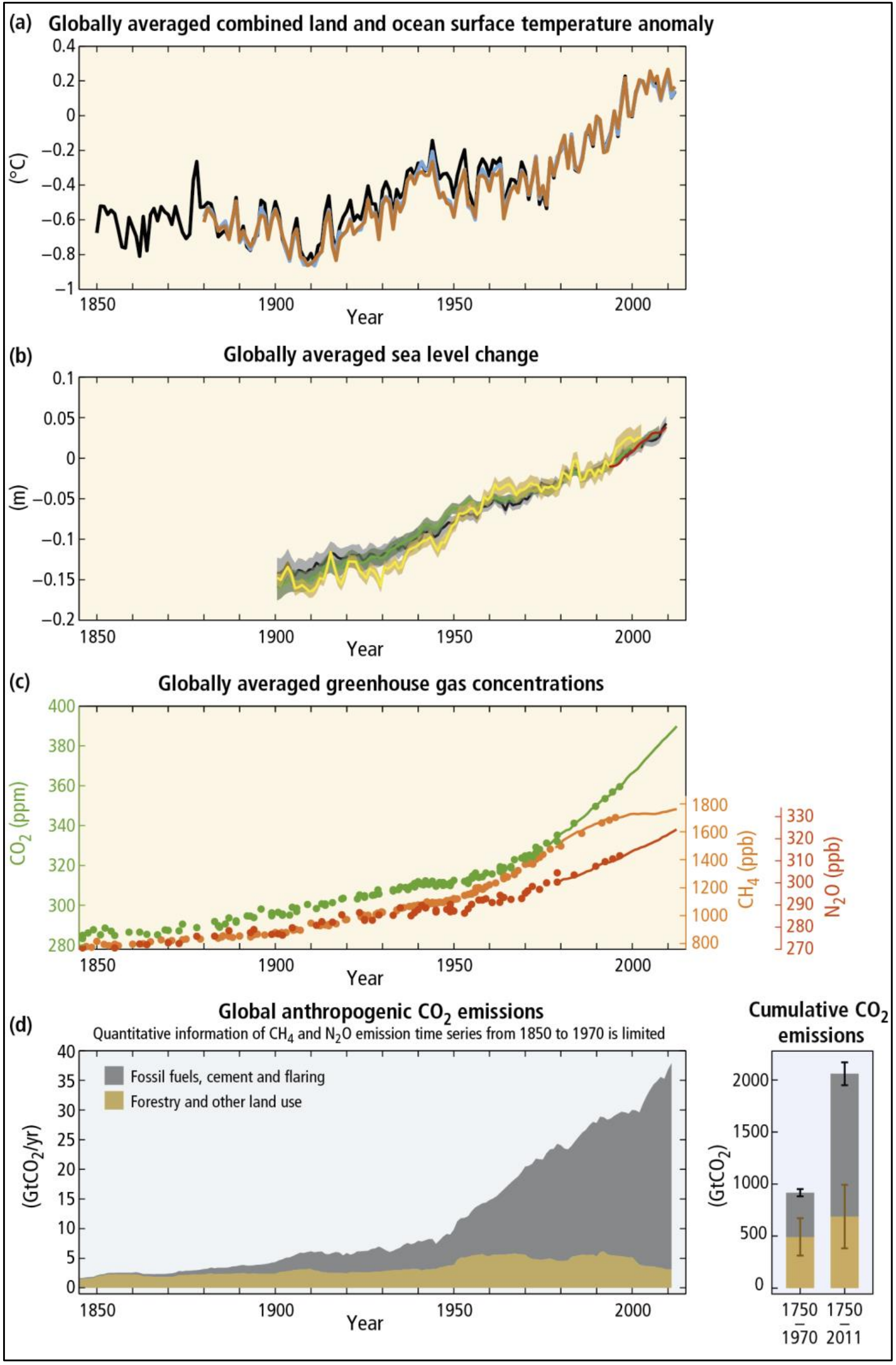
Figure 3
Atmospheric Concentrations of Common GHGs In Common Era



Increases in concentrations of these gases since 1750 are due to human activities in the industrial era. Concentration units are parts per million (ppm) or parts per billion (ppb), indicating the number of molecules of the greenhouse gas per million or billion molecules of air.

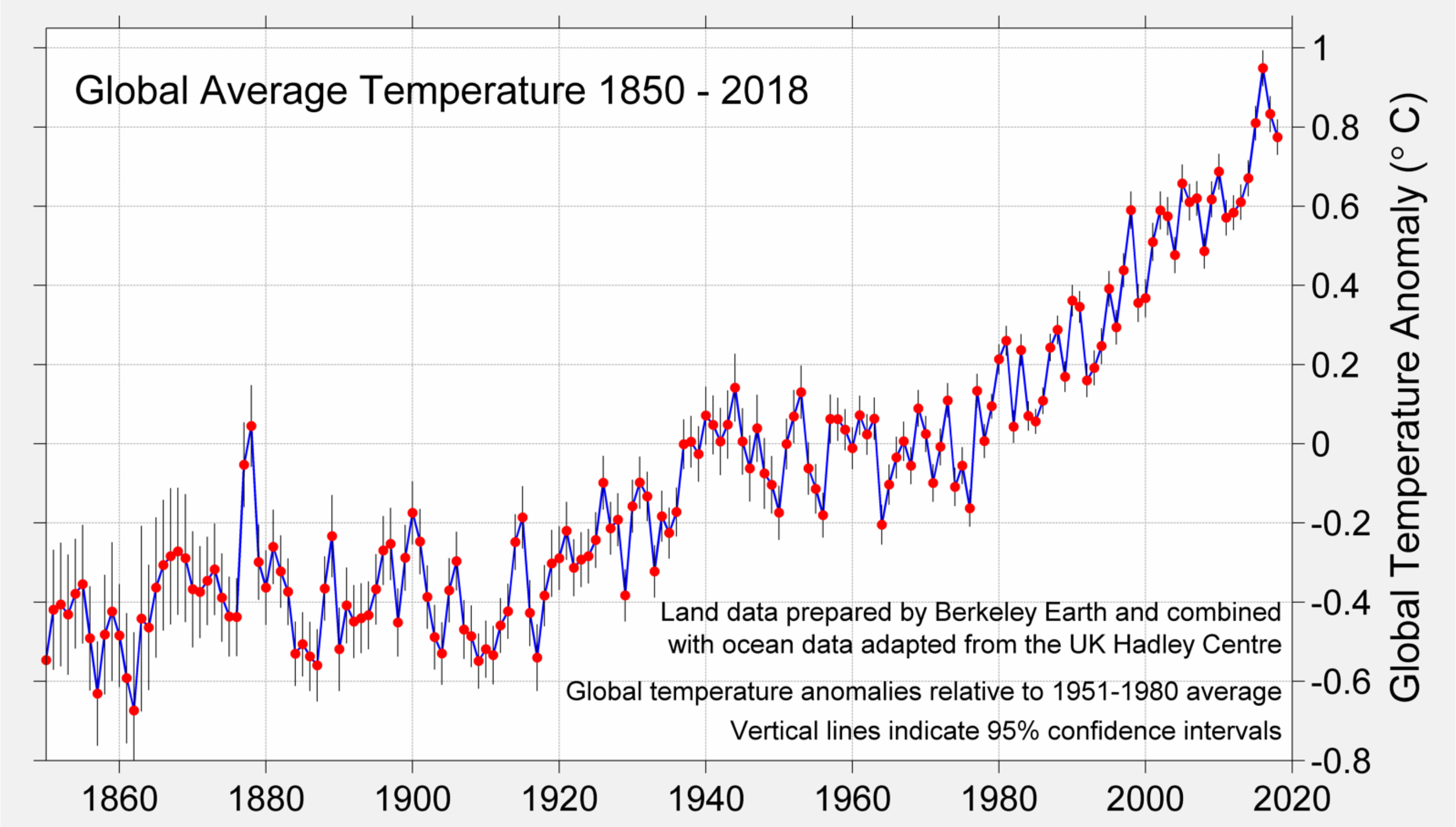
Sources: Forster, P., V. Ramaswamy, P. Artaxo, T. Berntsen, R. A. Betts, D. W. Fahey, J. Haywood, J. Lean, D. C. Lowe, G. Myhre et al. Changes in Atmospheric Constituents and in Radiative Forcing. In Climate Change 2007: The Physical Basis, edited by S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor and H. L. Miller, 129-234. Vol. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, UK and New York, NY: Cambridge University Press, 2007.
Blasing, T. J. Recent Greenhouse Gas Concentrations. 2008.

Figure 4
Temperature, Sea Level and atmospheric GHGs Since the Industrial Revolution



Source: IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

Figure 5
Global Temperature Anomalies relative to 1951-1980 average



Source: Berkeley Earth. Global Temperature Report for 2018. Available at: http://berkeleyearth.org/2018-temperatures/. Accessed July 2019.

In conclusion, human society depends on stable, predictable climate patterns. At lower concentrations, GHGs retain heat within the atmosphere to provide the stable climate that humans rely on. However, human activities across the globe are drastically altering the Earth's atmospheric composition by causing large increases in GHG concentrations, mainly CO_2 but also methane, nitrous oxide, and fluorinated gases. Such human-induced changes to atmospheric GHG concentrations are increasing average land and ocean temperatures, contributing to rising sea levels (Figure 4), and threaten to alter the earth's climate system.[10]

The City's CAP will chart a course forward for the City of Galt, which will focus on measures that will encourage growth, and economic opportunity, while also encouraging climate change protection throughout the community. In balancing the economic needs of today with the safety and prosperity of future generations, the actions of the City of Galt, combined with statewide and global initiatives to reduce GHG emissions, will allow for on-going prosperity without diminishing the ability of future generations to enjoy the same standard of living.

2.2 REGULATORY SETTING

GHG emissions are monitored and regulated through the efforts of various international, federal, State, and local government agencies. Agencies work jointly and individually to reduce GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for regulating GHG emissions within the City of Galt's Planning Area are discussed below.

Federal Regulations

The most prominent federal regulation related to GHG emissions is the Federal Clean Air Act (FCAA), which is implemented and enforced by the United States Environmental Protection Agency (USEPA).

FCAA and USEPA

On December 7, 2009, USEPA issued findings under Section 202(a) of the CAA concluding that GHGs are pollutants that could endanger public health. Under the so-called Endangerment Finding, USEPA found that the current and projected concentrations of the six key, well-mixed GHGs – CO_2, CH_4, N_2O, PFCs, SF_6, and HFCs – in the atmosphere threaten the public health and welfare of current and future generations. These findings do not, by themselves, impose any requirements on industry or other entities.

The USEPA has been directed to develop regulations to address the GHG emissions of cars and trucks. The Mandatory Reporting of Greenhouse Gases Rule requires reporting of GHG emissions from large sources and suppliers in the U.S., and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or

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[10] IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

industrial GHG, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the USEPA. To track the national trend in emissions and removals of GHG since 1990, USEPA develops the official U.S. GHG inventory each year.

State Regulations

California has adopted a variety of regulations aimed at reducing GHG emissions. The adoption and implementation of the key State legislation described in further detail below demonstrates California's leadership in addressing global climate change. Only the most prominent and applicable California GHG-related legislation are included below; however, an exhaustive list and extensive details of California air quality legislation can be found at the California Air Resources Board (CARB) website.[11]

Assembly Bill (AB) 1007

AB 1007, State Alternative Fuels Plan (Pavley, Chapter 371, Statutes of 2005), required development and adoption of a State plan to increase the use of alternative fuels. The final *State Alternative Fuels Plan* was adopted on December 5, 2007 and presented strategies and actions California must take to increase the use of alternative, non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. Examples of such strategies include establishment of government incentive programs for alternative fuels, creation of a Low Carbon Fuel Standard to reduce the carbon intensity of transportation fuels, and the allowance of GHG emissions credits to entities using alternatively fueled vehicles. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality. The Plan recommended goals for alternative fuel use as well as reductions in the carbon intensities of fuels such as gasoline and diesel, and lays a foundation for building a multi-fuel transportation energy future for California by 2050. As of 2017, decreases in the carbon intensity of conventional fuels have met or exceeded the compliance targets, and the use of alternative fuels has increased by approximately 800 million gallons of gas equivalence units.[12]

AB 1493

California AB 1493 (Stats. 2002, ch. 200) (Health & Safety Code, §42823, 43018.5), known as Pavley I, was enacted on July 22, 2002. AB 1493 requires that the CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by the CARB to be vehicles whose primary use is noncommercial personal transportation in the state." On June 30, 2009, the USEPA granted a waiver of CAA preemption to California for the State's GHG emission standards for motor

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[11] California Air Resources Board. *Laws and Regulations*. Available at: http://www.arb.ca.gov/html/lawsregs.htm. Accessed February 2018.

[12] California Air Resources Board. *Low Carbon Fuel Standard Data Dashboard*. Available at: https://www.arb.ca.gov/fuels/lcfs/dashboard/dashboard.htm. Accessed May 2019.

vehicles, beginning with the 2009 model year. Pursuant to the CAA, the waiver allows for the State to have special authority to enact stricter air pollution standards for motor vehicles than the federal government's. On September 24, 2009, the CARB adopted amendments to the Pavley regulations (Pavley I) that reduce GHG emissions in new passenger vehicles from 2009 through 2016. The second phase of the Pavley regulations (Pavley II) is expected to affect model year vehicles from 2016 through 2020. The CARB estimates that the regulation would reduce GHG emissions from the light-duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030.

Renewable Portfolio Standard (RPS) and SB 100

Established in 2002 under SB 1078, accelerated in 2006 under SB 107, and expanded in 2011 under SB 2, California's RPS is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020.

Since the inception of the RPS program, the program has been extended and enhanced multiple times. In 2015, SB 350 extended the State's RPS program by requiring that publicly owned utilities procure 50 percent of their electricity from renewable energy sources by 2030. The requirements of SB 350 were expanded and intensified in 2018 through the adoption of SB 100, which mandated that all electricity generated within the State by publicly owned utilities be generated through carbon-free sources by 2045. In addition, SB 100 increased the previous renewable energy requirement for the year 2030 by 10 percent; thus requiring that 60 percent of electricity generated by publicly owned utilities originate from renewable sources by 2030.

Executive Order S-03-05

On June 1, 2005, then-Governor Schwarzenegger signed Executive Order S-03-05, which established total GHG emission goals. Specifically, emissions are to be reduced to year 2000 levels by 2010, 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. The Executive Order directed the Secretary of the California Environmental Protection Agency (Cal-EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary is also directed to submit biannual reports to the governor and state legislature describing: (1) progress made toward reaching the emission goals; (2) impacts of global warming on California's resources; and (3) mitigation and adaptation plans to combat these impacts.

To comply with the Executive Order, the Secretary of the Cal-EPA created a Climate Act Team (CAT) made up of members from various State agencies and commissions. In March 2006, CAT released their first report. In addition, the CAT has released several "white papers" addressing issues pertaining to the potential impacts of climate change on California.

AB 32

In September 2006, AB 32, the California Climate Solutions Act of 2006, was enacted (Stats. 2006, ch. 488) (Health & Saf. Code, §38500 et seq.). AB 32 delegated the authority for its implementation to the CARB and directs CARB to enforce the State-wide cap. Among other requirements, AB 32 required CARB to (1) identify the State-wide level of GHG emissions in 1990 to serve as the emissions limit to be achieved by 2020, and (2) develop and implement a Scoping Plan. Accordingly, the CARB has prepared the *Climate Change Scoping Plan* (Scoping Plan) for California, which was approved in 2008 and updated in 2014 and 2017.[13] The following sections present further information regarding plans and programs that have been introduced in order to meet the statutory requirements of AB 32.

California Scoping Plan

The 2008 Scoping Plan identified GHG reduction measures that would be necessary to reduce statewide emissions as required by AB 32. Many of the GHG reduction measures identified in the 2008 Scoping Plan have been adopted, such as the Low Carbon Fuel Standard, Pavley, Advanced Clean Car standards, RPS, and the State's Cap-and-Trade system.

Building upon the 2008 Scoping Plan, the 2014 and 2017 Scoping Plan Updates introduced new strategies and recommendations to continue GHG emissions reductions. The 2013 Scoping Plan Update created a framework for achievement of 2020 GHG reduction goals and identified actions that may be built upon to continue GHG reductions past 2020, as required by AB 32. Following the trajectory of the first update to the Scoping Plan, the 2017 Scoping Plan sets a path for the achievement of California's year 2030 GHG reduction goals.

California GHG Cap-and-Trade Program

California's GHG Cap-and-Trade Program was originally envisioned in the 2008 Scoping Plan as a key strategy to achieve GHG emissions reductions mandated by AB 32. The Cap-and-Trade Program is intended to put California on the path to meet the GHG emission reduction goal of 1990 levels by the year 2020, and ultimately achieving an 80 percent reduction from 1990 levels by 2050. Under cap-and-trade, an overall limit on GHG emissions from capped sectors has been established and facilities or industries subject to the cap are able to trade permits (allowances) to emit GHGs. The CARB designed the California Cap-and-Trade Program to be enforceable and to meet the requirements of AB 32.[14] The Program started on January 1, 2012, with an enforceable compliance obligation beginning with the 2013 GHG emissions. In recognition of the global scope of climate change and the need for international cooperation to curb GHG emissions, on January 1, 2014 California linked the state's cap-and-trade plan with Quebec's,[15] and on January 1, 2015 the program expanded to include transportation and natural gas fuel suppliers.[16] AB 398 was adopted by the State's legislature in July 2017, which reauthorized the Cap-and-Trade program through December 31, 2030. The reauthorization and continued operation of the Cap-and-Trade

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[13] California Air Resources Board. *AB 32 Scoping Plan*. Accessible at: https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm. Accessed February 2018.

[14] California Air Resources Board. *Overview of ARB Emissions Trading Program*. Available at: https://www.arb.ca.gov/cc/capandtrade/guidance/cap_trade_overview.pdf. Accessed February 2018.

[15] California Air Resources Board. *Linkage*. Available at: https://www.arb.ca.gov/cc/capandtrade/linkage/linkage.htm. Accessed May 2019.

[16] California Air Resources Board. *Overview of ARB Emissions Trading Program*. Available at: https://www.arb.ca.gov/cc/capandtrade/guidance/cap_trade_overview.pdf. Accessed February 2018.

program represents a key strategy within the State's 2017 Scoping Plan Update for the achievement of California's year 2030 GHG reduction goals.

Executive Order S-01-07

On January 18, 2007, then-Governor Schwarzenegger signed Executive Order S-01-07, which mandates that a State-wide goal be established to reduce carbon intensity of California's transportation fuels by at least 10 percent by 2020. The Order also requires that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California.

SB 375

In September 2008, SB 375, known as the Sustainable Communities and Climate Protection Act of 2008, was enacted, which is intended to build on AB 32 by attempting to control GHG emissions by curbing sprawl. SB 375 enhances CARB's ability to reach goals set by AB 32 by directing CARB to develop regional GHG emission reduction goals to be achieved by the State's 18 metropolitan planning organizations (MPOs), including the SACOG. Under SB 375, MPOs must align regional transportation, housing, and land-use plans and prepare a "Sustainable Communities Strategy" (SCS) to reduce the amount of vehicle miles traveled in their respective regions and demonstrate the region's ability to attain its greenhouse gas reduction goals. SB 375 provides incentives for creating walkable and sustainable communities and revitalizing existing communities, and allows home builders to get relief from certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Furthermore, SB 375 encourages the development of alternative transportation options, which will reduce traffic congestion.

Executive Order S-13-08

Then-Governor Arnold Schwarzenegger issued Executive Order S-13-08 on November 14, 2008. The Executive Order is intended to hasten California's response to the impacts of global climate change, particularly sea level rise, and directs state agencies to take specified actions to assess and plan for such impacts, including requesting the National Academy of Sciences to prepare a Sea Level Rise Assessment Report, directing the Business, Transportation, and Housing Agency to assess the vulnerability of the State's transportation systems to sea level rise, and requiring the Office of Planning and Research and the Natural Resources Agency to provide land use planning guidance related to sea level rise and other climate change impacts.

The order also required State agencies to develop adaptation strategies to respond to the impacts of global climate change that are predicted to occur over the next 50 to 100 years. The adaption strategies report summarizes key climate change impacts to the State for the following areas: public health; ocean and coastal resources; water supply and flood protection; agriculture; forestry; biodiversity and habitat; and transportation and energy infrastructure. The report recommends strategies and specific responsibilities related to water supply, planning and land use, public health, fire protection, and energy conservation.

AB 197 and SB 32

On September 8, 2016, AB 197 and SB 32 were enacted with the goal of providing further control over GHG emissions in the State. SB 32 built on previous GHG reduction goals by requiring that the CARB ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by the year 2030. Additionally, SB 32 emphasized the critical role that reducing GHG emissions would play in protecting disadvantaged communities and the public health from adverse impacts of climate change. Enactment of SB 32 was predicated on the enactment of AB 197, which seeks to make the achievement of SB 32's mandated GHG emission reductions more transparent to the public and responsive to the Legislature. Transparency to the public is achieved by AB 197 through the publication of an online inventory of GHG and toxic air contaminants emissions from facilities required to report such emissions pursuant to Section 38530 of California's Health and Safety Code. AB 197 further established a six-member Joint Legislative Committee on Climate Change Policies, which is intended to provide oversight and accountability of the CARB, while also adding two new legislatively-appointed, non-voting members to the CARB. Additionally, AB 197 directs the CARB to consider the "social costs" of emission reduction rules and regulations, with particular focus on how such measures may impact disadvantaged communities.

Executive Order B-55-18

On September 10, 2018, then-Governor Brown established a statewide goal of carbon neutrality as soon as possible, and no later than 2045. Following achievement of carbon neutrality, net negative emissions should be pursued as the new emissions goal. The executive order directed the CARB to work with relevant state agencies to develop frameworks for implementation and tracking of the new goal, and further directed the CARB to support the carbon neutrality goal through future updates to the State Scoping Plan. The implementation of carbon sequestration targets and projects for natural and working lands is identified as a necessary measure to achieve carbon neutrality and net negative emissions.

SB 1383

Enacts the strictest regulations on short-lived but high GWP in the U.S. The high GWP of the gases targeted by SB 1383 means that the release of such gases can have global warming impacts hundreds of times greater than that of carbon dioxide. Because high GWP gases have a shorter lifetime in the atmosphere, however, reducing their emissions can have an immediate and significant contribution to reducing climate change. SB 1383 requires a 50 percent reduction in black carbon, a 40 percent reduction in methane, and 40 percent reduction in hydrofluorocarbons from 2013 levels by 2030. Sources of these emissions include landfills, especially the decomposition of organic wastes (including food), agriculture, and refrigeration, air-conditioning, and aerosol products.

California Building Standards Code

California's building codes (California Code of Regulations [CCR], Title 24) are published on a triennial basis, and contain standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvement to real property. The California Building Standards Code (CBSC) is responsible for the administration and implementation of each code cycle, which includes the proposal, review, and adoption process. Supplements and errata are issued throughout the cycle to make necessary mid-term corrections. The 2019 code has been prepared and will become effective January 1, 2020. The California building code standards apply State-wide; however, a local jurisdiction may amend a building code standard if the jurisdiction makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

California Green Building Standards Code

The 2019 California Green Building Standards Code, otherwise known as the CALGreen Code (CCR Title 24, Part 11), is a portion of the CBSC, which will become effective with the rest of the CBSC on January 1, 2020. The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California.

The CALGreen Code encourages local governments to adopt more stringent voluntary provisions, known as Tier 1 and Tier 2 provisions, to further reduce emissions, improve energy efficiency, and conserve natural resources. If a local government adopts one of the tiers, the provisions become mandates for all new construction within that jurisdiction.

Building Energy Efficiency Standards

The 2019 Building Energy Efficiency Standards is a portion of the CBSC (CCR Title 24, Parts 6 and 11) that expands upon energy efficiency measures from the 2016 Building Energy Efficiency Standards. As compared to standards structures built under the 2016 Standards, operation of residential structures built under the 2019 Standards would consume seven percent less energy, while commercial structures would consume 30 percent less energy. Energy reductions relative to previous Building Energy Efficiency Standards would be achieved through various regulations including requirements for the use of high efficacy lighting, improved water heating system efficiency, and high-performance attics and walls.

One of the improvements included within the 2019 Building Energy Efficiency Standards will be the requirement that certain residential developments, including some single-family and low-rise residential developments, include on-site solar energy systems capable of producing 100 percent of the electricity demanded by the residences. Certain residential developments, including developments that are subject to substantial shading, rendering the use of on-site solar photovoltaic systems infeasible, are exempted from the foregoing requirement; however, such developments would continue to be subject to all other applicable portions of the 2019 Building Energy Efficiency Standards.

Fleet Rule for Transit Agencies

On December 14, 2018, the CARB unanimously approved the Innovative Clean Transit regulation. The Innovative Clean Transit regulation requires transit agencies to begin transitioning existing fleets to zero-emission vehicles, and requires that future vehicle purchases be zero-emission vehicles. The result of the Innovative Clean Transit regulation will be that by 2040, all transit vehicles within California will be zero-emissions vehicles.

Local Regulations

The following are the regulatory agencies and regulations pertinent to the proposed project on a local level.

Sacramento Metropolitan Air Quality Management District

Various local, regional, State and federal agencies share the responsibility for air quality management in Sacramento County. The Sacramento Metropolitan Air Quality Management District (SMAQMD) operates at the local level with primary responsibility for attaining and maintaining the federal and State Ambient Air Quality Standards (AAQS) in Sacramento County. The SMAQMD is tasked with implementing programs and regulations required by the FCAA and the California Clean Air Act (CCAA), including preparing plans to attain federal and State AAQS. The SMAQMD works jointly with the USEPA, CARB, SACOG, other air districts in the Sacramento region, county and city transportation and planning departments, and various non-governmental organizations to improve air quality through a variety of programs. Programs include the adoption of regulations, policies and guidance, extensive education and public outreach programs, as well as emission reducing incentive programs.

Nearly all development projects in the Sacramento region have the potential to generate air pollutants and GHG emissions. Therefore, for most projects, evaluation of air quality and GHG emissions impacts is required to comply with CEQA. In order to help public agencies evaluate air quality impacts, the SMAQMD has developed the *Guide to Air Quality Assessment in Sacramento County*.[17] The SMAQMD's guide includes recommended thresholds of significance, including mass emission thresholds for construction-related and operational GHG emissions as well as GHG emissions from stationary sources. Projects resulting in emissions in excess of the SMAQMD's mass emissions thresholds are required to implement all feasible mitigation to reduce GHG emissions.

Sacramento Area Council of Governments

Under SB 375, SACOG adopted the 2016 MTP/SCS.[18] The MTP/SCS applies the goals of SB 375, and is intended to reduce GHG emissions through coordination between transportation and land use planning. One of the key goals of the MTP/SCS, is the reduction of GHG emissions from

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[17] Sacramento Metropolitan Air Quality Management District. *Guide to Air Quality Assessment in Sacramento County*. Adopted December 2009. Updated September 2018.

[18] Sacramento Area Council of Governments. *2016 Metropolitan Transportation Plan/Sustainable Communities Strategy*. February 18, 2016.

passenger vehicles. To accomplish such reductions, the MTP/SCS seeks to improve connections between the housing stock and employment centers within the planning area through compact and mixed-use developments. Should development within the SACOG region advance in a manner consistent with the MTP/SCS forecasts, SACOG anticipates that the region would meet the GHG emissions reductions goals for the region while simultaneously reducing the emissions of certain criteria pollutants. Additionally, SACOG uses the MTP/SCS as a means of prioritizing infrastructure investment within SACOG's jurisdictions. Investment in infrastructure is split between large regional projects, such as highway interchange improvements and high occupancy vehicle lanes, as well as focused local projects such as investments in bicycle, pedestrian, and transit infrastructure.

MTP/SCS Update

The MTP/SCS is on a four-year update and adoption cycle. Consequently, SACOG has prepared various staff reports, research documents, and draft preferred scenarios as part of the process of preparing the 2020 MTP/SCS. On April 25, 2019 SACOG released a Notice of Preparation notifying the public that an Environmental Impact Report would be prepared to analyze potential impacts from implementation of the 2020 MTP/SCS. SACOG anticipates that environmental review of the 2020 MTP/SCS will be completed by January of 2020, and, following public input, the updated 2020 MTP/SCS would be adopted in early 2020.

3

REGIONAL IMPACTS OF CLIMATE CHANGE

3.1 AREAS OF POTENTIAL IMPACT

Executive Order S-13-08 directed the Natural Resources Agency to prepare a climate adaptation strategy identifying the potential risks to California posed by climate change.[19] The initial climate adaptation strategy was prepared in 2009, with updates published in 2014 and 2018. The 2018 publication from the Natural Resources Agency titled *Safeguarding California Plan: 2018 Update*, known as the Safeguarding California Plan, is the most recent climate adaptation strategy.[20]

The Safeguarding California Plan focuses on the increasingly visible effects of climate change, with specific focus on how climate change is currently impacting, and will continue to impact, some of California's most valuable assets. While many of the climate change impacts identified in the Safeguarding California Plan act on a statewide or global scale, this section of the CAP will focus on those impacts that would directly impact the City of Galt and the surrounding region. In particular, the topics of agriculture, public health, and water resources will be further discussed in the context of the City of Galt and the surrounding region.

Agriculture

In 2016, agricultural production generated commodities valued at $507,064,000 in Sacramento County.[21] The City of Galt's history as an agriculturally focused community within Sacramento County is well established, and much of the historic and future development of the City has been, and is likely to continue to be, tied to agriculture. The City and County's agricultural prosperity can be attributed in large part to California's unique Mediterranean climate; mild winters allow for a wide diversity of commodities to be cultivated year-round.

Farmers and ranchers within Sacramento County are intimately familiar with natural variability in weather from year to year; however, climate change has the potential to overwhelm existing climate trends that farmers and ranchers rely on throughout the County. For example, changing weather patterns throughout the State, including drought, loss of chill hours, and increased intensity, duration, and frequency of heat waves or extreme hot weather days all have the potential to directly affect agricultural activities.[22]

California's recent historic drought, between 2011 and 2015, provides an example of what could lie in the State's agricultural future if climate change impacts increase. A recent economic analysis conducted by researchers at the University of California, Davis, determined that in the year 2015

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[19] State of California, Office of Governor Edmund G. Brown Jr. *Executive Order S-3-08*. Available at https://www.gov.ca.gov/news.php?id=11036. Accessed May 3,2017.

[20] State of California, Natural Resources Agency. *Safeguarding California Plan: 2018 Update*. January 2018.

[21] County of Sacramento. *The 2016 Crop & Livestock Report: Sacramento County*. 2017.

[22] State of California, Natural Resources Agency. *Safeguarding California Plan: 2018 Update*. January 2018.

alone, the state suffered a total agricultural economic loss of $2.7 billion with approximately 21,000 agricultural jobs lost throughout the State, due to the drought. Economic impacts to agriculture were anticipated to become increasingly severe with the persistence of the drought.[23] Undoubtedly, Sacramento County and the City of Galt shared a portion of this revenue and job loss, and increased prevalence of droughts would continue to threaten the agricultural livelihoods of many residents of the City of Galt.

Impacts of drought and severe weather events, such as flooding, create easily identifiable threats to agriculture; however, some impacts to agriculture in the region and City of Galt will be more nuanced, yet similarly impactful. For instance, climate change is anticipated to change the patterns of temperature fluctuations between day and night and between seasons, with impacts differing by region. One potential outcome of temperature pattern changes in the area of the City of Galt is the loss of chill hours. Evening chill hours signal many of California’s most profitable fruit and nut crops to bloom. For instance, grapes, almonds, walnuts, peaches, cherries, apricots, and other tree and vine crops require between 100 and 1,800 chill hours to signal blooming. Irregular blooming caused by decreased chill hours could lead to irregular and depressed yields of some or all of the foregoing crops. Such changes to yields would impact agricultural revenues from crops, threatening agricultural livelihoods within the region.

Irregular blooming patterns caused by the loss of chill hours represents one side of the spectrum of impacts due to increasing average temperatures. The reverse side of the spectrum related to increasing average temperatures is the increased prevalence of extreme hot weather days, and the overall increase in hot weather days. Persistent and extreme hot weather has the potential to cause significant health problems for livestock and humans alike. Increased air temperatures can decrease livestock yields, pregnancy rates, and milk production, thus threatening revenues for City of Galt residents involved in livestock production. Finally, the human toll of a changing climate in the City of Galt would be felt by employees working outdoors during extreme heat events. Heat stress in workers reduces productivity, and can lead to extreme outcomes such as illness, disability, and, in the most serious cases, death.[24]

The combined effect of lost chill hours as well as increased average temperatures may further hamper agricultural productivity by increasing the prevalence of pests and weeds. Changing temperature patterns could allow for new pest species to enter the region, while warmer temperatures may favor the life cycle of weeds.

Given the State’s recent experience with severe drought, the potential economic damage to the agricultural industry from changing precipitation patterns is evident. Moreover, the agricultural activity within and surrounding the City of Galt would not suffer from changing precipitation patterns alone; indeed, the community could be hit with the concurrent impacts of irregular blooming patterns, decreased livestock production, decreased worker productivity, extreme wet and dry conditions, and the increased prevalence of pests and weeds. All of which would contribute to decreased agricultural revenues. Considering the City of Galt’s prominence as a community

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[23] Howitt, Richard; MacEwan, Duncan; Medellín-Acuara, Josué; Lund, Jay; Sumner, Daniel. *Economic Analysis of the 2015 Drought for California Agriculture*. August 17, 2015.

[24] State of California, Natural Resources Agency. *Safeguarding California Plan: 2018 Update*. January 2018.

surrounded by agricultural activities within Sacramento County, the economic and human impacts of climate change present a serious, imminent danger to the way of life of many residents of the community.

Water Resources

Water is of crucial importance to everyday life within the City of Galt and the on-going prosperity of the City. Potential impacts on groundwater patterns and flooding due to changes in precipitation and sea-level rise are discussed in further depth below.

The City of Galt relies upon groundwater from the Cosumnes Subbasin (DWR Groundwater Basin Number 5-22.16) of the San Joaquin Valley Groundwater Basin as the sole source of domestic potable water for current and future water demand. Groundwater in Cosumnes Subbasin is recharged by seepage from surface waters flowing from the Sierra Nevada, such as the Cosumnes River, the Mokelume River, Dry Creek, and Skunk Creek. In turn, the foregoing waterways rely predominantly on precipitation and snowmelt within their respective watersheds for flow. In areas outside of the direct influence of the Cosumnes River, historic groundwater pumping has led to declining groundwater levels within the subbasin; however, the basin has experienced certain periods of significant recovery of groundwater levels. Fluctuations between groundwater decline and recovery have occurred in response to precipitation patterns within the Central Valley. For instance, during the drought of 1987-1992, water levels declined within the subbasin by 10 to 15 feet, before recovering by 15 to 20 feet during the non-drought years of 1993 through 2000.[25] Thus, the amount of groundwater recharge within the Cosumnes Subbasin can be seen to respond to fluctuations in surface water seepage, which is affected by the amount of precipitation within the region. Considering the link between precipitation and groundwater levels, and the City of Galt’s current reliance solely on groundwater to meet potable water demand, the City’s drinking water supply is dependent on climactic trends and precipitation patterns within the State. It should be noted that water supplies derived from surface water resources in the state are similarly dependent on climactic trends and precipitation patterns.

Although uncertainty exists regarding the specific outcomes of climate change on precipitation patterns within the State, scientists agree that climate change will alter the hydrologic patterns within the State. In particular, climate change is anticipated to affect the frequency, magnitude, and duration of extreme weather events, and result in declining snowpack, as well as more frequent, and longer droughts.[26] Furthermore, an increased proportion of winter precipitation is anticipated to fall as rain, rather than snow, and the snow that does accumulate is anticipated to begin melting sooner. The combined effect of less overall snowfall and earlier melting will be a change in the timing and volume of snowmelt, which will alter streamflow. Such changes to precipitation regimes could result in reduced or irregular groundwater recharge within the Cosumnes Subbasin. Should groundwater recharge be altered, the portion of the Cosumnes Subbasin underlying the City of Galt could experience declines in groundwater levels, which

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[25] California Department of Water Resources. *San Joaquin Valley Groundwater Basin Cosumnes Subbasin; Bulletin 118*. Updated February 03, 2006.

[26] State of California, Natural Resources Agency. *Safeguarding California Plan: 2018 Update*. January 2018.

would have the potential to result in changing groundwater quality and availability of water supplies for the City of Galt.

In addition to altering groundwater recharge, changes in precipitation patterns could affect the risk of flooding within the City. Extreme weather events such as heavy precipitation events can stress existing flood control infrastructure resulting in both localized and regional flooding. Localized flooding could result from stormwater drainage systems being overwhelmed by extreme rainfall events, and can result in routine disruptions to City life as streets, businesses, and/or homes can be damaged. Regional flooding issues can be caused when stormwater overwhelms larger infrastructure such as levees or dams. Major regional flood control infrastructure within California was designed based on historic precipitation patterns within the State. Climate change induced changes to precipitation patterns within the State could pose threats to such infrastructure. For instance, when rain falls on previously accumulated snow, the runoff from such precipitation events can overwhelm the storage capacity of dams requiring large amounts of water discharge. High discharge rates can lead to levee overtopping or degradation and rivers overtopping natural banks.[27] Regional flooding poses a risk to many communities within California, including the City of Galt and other nearby Central Valley cities.

In order to prepare for extreme precipitation events, dam managers often pre-emptively release storm water to make room for the new precipitation runoff. Water stored in reservoirs is often used to supply drinking water or for agricultural irrigation. If not replenished, releasing too much water can result in water shortages during the dry season. Thus, dam managers must balance the need for continued water supply with flood protection. Striking the right balance is predicated on an understanding of precipitation patterns; thus, climate change induced changes to regional precipitation patterns could curtail the ability of dam managers to satisfy the dual roles of flood protection and water supply.

Despite the City of Galt's location within the interior of the State, rising sea levels caused by climate change represents a potential threat to the City of Galt. While not threatened by impacts such as coastal erosion or saltwater intrusion into groundwater supplies, changes in sea level could result in changes to flood patterns, within the region.

The confluence of the Sacramento and San Joaquin Rivers is a tidally influenced network known as the California Delta. Sea level rise could result in changes to the Delta including an increase in the base water levels. Should base water levels increase within the Delta, flood waters interacting with the higher base water levels would affect increasingly larger areas of the State. Such inundation would extend throughout the Delta and surrounding areas, including up the Cosumnes River. Elevated flood levels within the Cosumnes River would lead to elevated flood levels in tributaries to the Cosumnes River. As such, when the frequency of flooding in areas such as the Cosumnes River Preserve increases due to sea level rise, flood waters would extend into adjacent farmland and out along tributaries, including Deadman Gulch.

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[27] State of California Department of Justice. *Climate Change Impacts in California*. Available at: https://oag.ca.gov/environment/impact. Accessed August 2019.

Thus, although the City of Galt is separated from the California Coast, sea level rise could pose a threat to the City of Galt through increased base flood levels along tributaries to the Cosumnes River. Flooding in the areas surrounding Deadman Gulch could impact residents of the City of Galt and residents in the nearby unincorporated areas of the County; however, flooding in the areas surrounding Deadman Gulch may ultimately represent mild regional impacts as other Delta communities such as Thornton, Brentwood, and Stockton would experience severe sea level rise related flooding.[28]

Public Health

Climate change poses multiple threats to public health in the City of Galt including risks related to extreme heat events, declining air quality, and infectious diseases.

As discussed above, agricultural workers and other outdoor workers would be increasingly vulnerable to extreme heat, as well as wildfire smoke. This would likely lead to reduced productivity from likely reductions in work hours during heat waves and wildfire smoke events.. However, agricultural workers are not the only group of City of Galt residents who would be vulnerable to heat stress. Increases in average and maximum air temperatures would contribute to increased risk of dehydration, heat exhaustion, heat stroke, and other heat related illnesses throughout the City of Galt's entire population. While all residents of the City of Galt would be potentially vulnerable to heat related impacts, children, elderly residents, residents without access to air conditioning or medical assistance, and residents that work outside would be especially impacted by increased heat stress.[29]

The California Energy Commission and UC Berkeley have developed Cal-Adapt to help local agencies and the public identify and understand the potential impacts of climate change on a local scale.[30] A useful way of understanding potential impacts resulting from climate change is by comparing anticipated conditions with conditions from a baseline period in the past. For instance, Cal-Adapt allows for the comparison of extreme heat events during the period of 1961 to 1990 with anticipated extreme heat events from the years 2045 to 2055. According to Cal-Adapt, the City of Galt experienced an average of four days per year with temperatures above 101.6 degrees Fahrenheit. However, due to climate change induced increases in extreme heat events, between the years 2045 and 2055, the City of Galt is anticipated to experience an average of 24 days above 101.6 degrees Fahrenheit per year, which is a six-fold increase. In addition to experiencing a greater number of extreme heat days, the projected length of heat waves is anticipated to increase, from a longest heat wave length of 2.2 days between 1961 and 1990, to a longest heat wave length of 7.7 days between 2045 and 2055.[31]

Increased prevalence of extreme heat days as well as longer heat waves would contribute to the prevalence of heat related illnesses and loss of productivity. However, from a public health stand point, the loss of cold hours at night may be more damaging. Cooler nighttime temperatures

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[28] California Energy Commission. *Cal-Adapt: Sea Level Rise*. Available at: http://cal-adapt.org/tools/slr-calflod-3d/. Accessed May 2018.

[29] State of California, Natural Resources Agency. *Safeguarding California Plan: 2018 Update*. January 2018.

[30] California Energy Commission. *Cal-Adapt*. Available at https://cal-adapt.org/. Accessed July 2019.

[31] California Energy Commission. *Cal-Adapt*. Available at https://cal-adapt.org/. Accessed July 2019.

provide critical respite from daytime high temperatures and heat waves; especially for segments of the population that lack access to air-conditioning, for instance low-income residents that reduce the use of air-conditioning due to financial constraints. During the baseline period of 1961 through 1990, the City of Galt experienced just four nights per year with nighttime low temperatures in excess of 64.3 degrees Fahrenheit. However, between the years 2045 and 2055, the region is anticipated to experience an eight-fold increase in such warm nights, where 32 nights per year will have low temperatures in excess of 64.3 degrees Fahrenheit. Such changes pose serious risks to the health and safety of residents of the City of Galt.[32]

In addition to the direct physical impacts that can occur due to excessive heat exposure, higher temperatures have the potential to degrade air quality, which can affect the respiratory health of residents. Higher temperatures increase the formation of unhealthy air pollutants such as ozone and particulate matter; thus, while the emission of pollutants may remain constant, the quality of the air is still degraded due to the increased formation of harmful air pollutants. Not only could climate change increase the formation of harmful air pollution from air pollutants already in the atmosphere, but climate change also has the potential to increase the release of air pollutants into the atmosphere. Increased release of air pollutants would occur due to increased frequency and severity of wildfires throughout the State. Wildfires emit smoke and smoke related particulate matter which pollutes the air. Ozone and particulate matter contribute to a variety of health problems such as asthma, acute respiratory diseases, cardiovascular diseases, and decreased lung capacity. In regard to potential air quality impacts related to climate change, children and elderly residents of the City of Galt again find themselves as a particularly vulnerable segment of the City's population.[33] Additional groups of vulnerable residents would include people exercising or recreating outdoors, and student athletes. Student athletes may prove to be especially vulnerable, as young adults typically perceive themselves to be healthier and more resilient, and because negative impacts of poor air quality may not express themselves immediately, athletes may wrongly assume that poor air quality is not affecting their health. In reality, impacts of poor air quality can increase with long-term exposure, and may not manifest immediately upon initial exposure. Consequently, any resident that works, recreates, or spends any substantial amount of time outside would be impacted by decreased air quality.

Finally, warmer temperatures could allow for greater dispersal of infectious diseases.[34] Warmer temperatures are likely to expand the range and increase reproduction rates of mosquitos, rodents, ticks, and other vectors, which carry infectious diseases such as West Nile Virus, Lyme disease, and human hantavirus cardiopulmonary syndrome. Recently, the spread of Valley Fever has been linked to climate change because hotter, more arid weather increases dust formation and dust storms. Dust spreads the fungal spores that cause the disease; thus, increased temperatures due to climate change may increase the prevalence of the disease.[35] It should also be noted that certain food-borne diseases, such as Salmonella and Camplyobacter show seasonal patterns that respond to climate variability. Because these foodborne illnesses respond to climate patterns, climate

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[32] California Energy Commission. *Cal-Adapt*. Available at https://cal-adapt.org/. Accessed July 2019.

[33] State of California, Natural Resources Agency. *Safeguarding California Plan: 2018 Update*. January 2018.

[34] *Ibid*.

[35] American Lung Association. *How Climate Change Has Led to an Increase in Valley Fever*. Available at: https://www.lung.org/about-us/blog/2017/07/how-climate-change-has-led-to-an-increase-in-valley-fever.html. Accessed August 2019.

change may alter the frequency of food-borne diseases from agricultural production and consumer prevalence perspectives.[36] By altering the prevalence of the foregoing diseases, climate change has the potential to increase the threat posed by certain diseases within the City.

Considering the above, climate change would have the potential to impact public health within the City of Galt by increasing extreme weather events, contributing to degraded air quality, and potentially altering the distribution and frequency of infectious diseases.

Conclusion

Many members of the community rely on agriculture for economic productivity, and the municipality of the City of Galt is tasked with protecting the health and prosperity of the citizens of the community. Considering the potential impacts of climate change on agriculture, public health, water resources, and other resources of public interest, the State has enacted various laws in an attempt to curb such impacts of climate change. Laws including AB 32, SB 97, SB 375, and SB 32 establish statewide efforts to reduce GHG emissions in order to avoid the anticipated effects of climate change. In compliance with the foregoing state laws and various executive orders signed by Governors Arnold Schwarzenegger and Jerry Brown, the City of Galt is taking action to protect the way of life of citizens within the City. Such actions, taken on a community level, will work in concert with the actions taken by the County, the State, and the vast majority of countries on earth, to reduce the threat of climate change.

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[36] State of California, Natural Resources Agency. *Safeguarding California: Reducing Climate Risk*. July 2014.

4 EMISSIONS QUANTIFICATION

4.1 EMISSIONS FORECASTING AND TARGETING REDUCTIONS

As discussed in the Regulatory Setting section of this CAP, California's GHG emissions reduction goals were established by various executive orders and legislated in AB 32 and SB 32. Such reduction goals were further articulated in *California's 2017 Climate Change Scoping Plan* which was adopted by the CARB on December 14, 2017.[37] Although earlier Scoping Plans had advised that emissions reduction goals be based on estimated baseline emissions for the year 1990, the 2017 Scoping Plan included new recommendations regarding emissions reduction goals. The 2017 Scoping Plan Update recommends that local governments set future emissions goals on a per capita basis. As shown in Table 1 below, the 2017 Scoping Plan Update endorses the use of community-wide goals of per capita emissions not to exceed six MT CO_2e/yr by 2030, and per capita emissions not to exceed two MT CO_2e/yr by 2050. Per capita emissions as included in the 2017 Scoping Plan Update are considered consistent with the statewide emissions limits established by AB 32, SB 32, SB 391, and Executive Order S-3-05 and B-30-15.[38]

Table 1
2017 Scoping Plan Recommended Emissions Goals

Year 2030	Year 2050
6 MT CO_2e/yr/capita	2 MT CO_2e/yr/capita

Source: California Air Resources Board. The 2017 Climate Change Scoping Plan Update. November, 2017.

In order for the City to meet the per capita emissions goals presented in Table 1, the City must estimate both future emissions related to citywide operations in the years 2030 and 2050, and the population of the City of Galt in each year. Thus, buildout potential for the City must be estimated for both years. Buildout potential for the City must include both public and private development such as residential development, expanded government facilities, and increased employment type development.

The following sections of this chapter will present the methodology used to estimate emissions. In particular, to estimate future emissions within the City, emissions from existing activities within the City must be inventoried and emissions quantified. Following the inventory of existing Citywide emissions, growth estimated based on existing planning documents for the City may then be used to estimate future emissions levels.

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[37] California Air Resources Board. *The 2017 Climate Change Scoping Plan Update*. November, 2017.
[38] California Air Resources Board. *The 2017 Climate Change Scoping Plan Update*. November, 2017.

Quantifying Citywide Emissions

The following sections summarize previous efforts to quantify and inventory the City's GHG emissions in 2009 and results from an update of the 2009 GHG emissions inventory.

Previous Emissions Quantification

In 2009, the Sacramento County Department of Environmental Review and Assessment prepared a baseline GHG inventory for all unincorporated areas of the County as well as the incorporated cities of Galt, Citrus Heights, Elk Grove, Folsom, Isleton, Rancho Cordova, and Sacramento. The baseline inventory presented estimated emissions for the year 2005, in order to facilitate Countywide compliance with statewide legislation related to reducing GHG emissions.

The 2009 Countywide GHG inventory was completed using the International Council for Local Environmental Initiative's (ICLEI's) Clean Air and Climate Protection (CACP) software. The CACP software was designed to inventory GHG emissions from all City operations while allowing for the separate attribution of emissions to the operations of a City's government and the wider community. Therefore, the 2009 GHG inventory presents both Citywide total emissions as well as emissions specifically attributable to operations of the municipal government of the City of Galt, the latter of which represents a subset of the City of Galt's total emissions. Due to information constraints at the time of inventory preparation, the 2009 Countywide GHG Inventory selected the year 2005 for the emissions quantification baseline. Emissions from various sources were considered including emissions resulting from the generation of energy for residential, commercial, industrial, and municipal uses, emissions related to the use of on-road vehicles, and emissions related to solid waste management among others. It should be noted that the 2009 emissions inventory included an estimation of the emission of gases with high global warming potential (GWP). High GWP gases have a larger effect on the earth's greenhouse effect by trapping more heat either directly or through interactions with other gases within earth's atmosphere. Gases with a high GWP include, but are not limited to methane, nitrous oxide, and gases such as chlorofluorocarbons (CFCs), and hydrofluorocarbons (HFCs), among others.

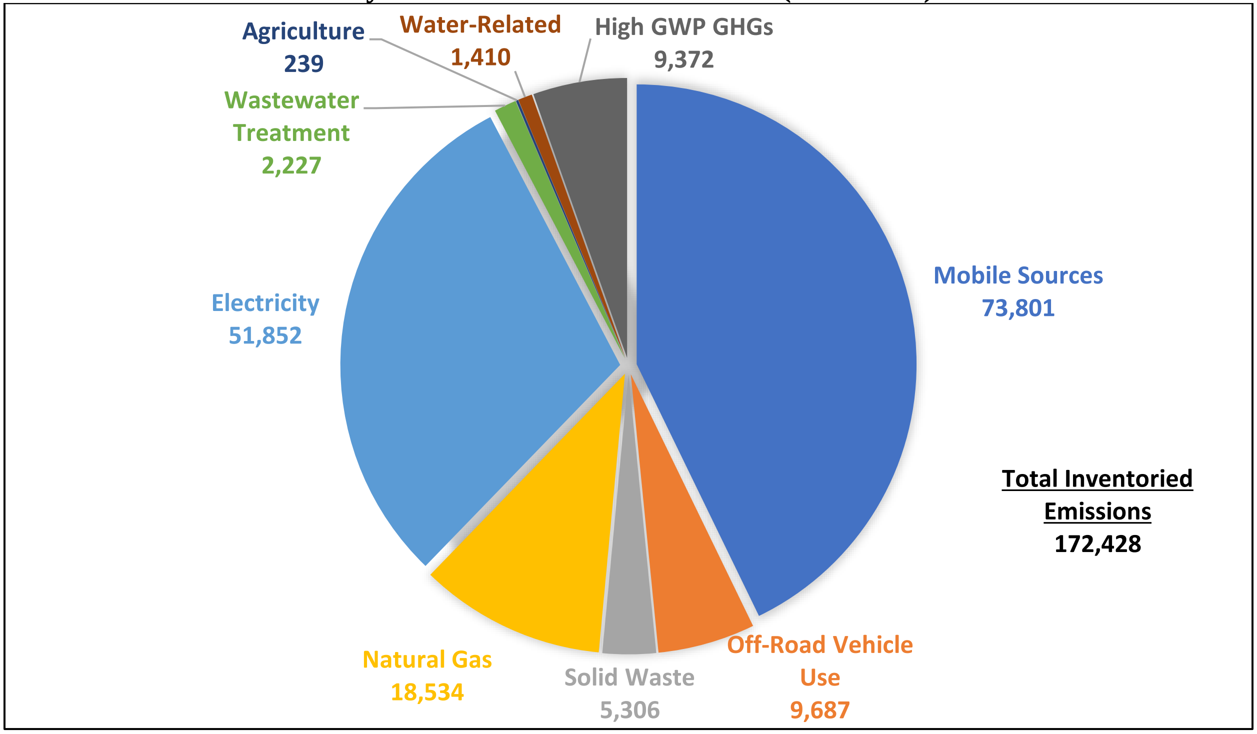
In some cases, data limitation existed that curtailed the County's ability to estimate GHG emissions on a jurisdictional basis. For sources with such data limitation, the County instead chose to quantify such emissions based on countywide or statewide data as available. Use of countywide or statewide data allowed for the quantification of emissions from sources such as off-road recreational vehicles, high GWP gases, and agricultural activities on a countywide basis. The estimated countywide or statewide emissions were subsequently converted into per capita emissions rates and apportioned to each jurisdiction within the County based on each jurisdiction's total population. For instance, at the time of the 2005 GHG analysis, approximately 23,913 residents lived within the City of Galt; thus, the per capita emissions rate for high GWP gases was used in combination with the City of Galt's 2005 population level to estimate the amount of high GWP gases being released by activity within the City of Galt.

Results of the 2009 Countywide GHG Inventory

As discussed above, while the Countywide GHG Inventory was prepared in 2009, emissions for activities within the City of Galt were quantified for the year 2005 due to data availability. Citywide emissions in the year 2005 are presented for various emissions sectors in Figure 6 below.

As shown in Figure 6, emissions from on-road transportation, such as passenger automobiles, heavy duty trucks and service vehicles constitute the largest sector of emissions within the City. Residential, commercial, and industrial developments within the City consume energy in the form of electricity and natural gas. Although the majority of electricity, and all of the natural gas, consumed within the City of Galt is not produced within the City limits, because such resources are consumed within the City, the emissions related to the production of electricity and the burning of natural gas are attributed to the City of Galt. Residential, commercial, and industrial electricity consumption as well as natural gas use represent the second and third largest sources of emissions, respectively, and, when combined, equate to approximately the same amount of total emissions as all on-road transportation sources within the City. Emissions related to other activities within the City such as water extraction and transportation, agriculture, wastewater treatment, solid waste disposal, and off-road vehicle use are presented in Figure 6 as well.[39]

Figure 6
City of Galt 2005 GHG Emission (MT CO_2e)



Source: Sacramento County Department of Environmental Review and Assessment. Greenhouse Gas Emissions Inventory for Sacramento County. June 2009.

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[39] Sacramento County Department of Environmental Review and Assessment. *Greenhouse Gas Emissions Inventory for Sacramento County*. June 2009.

With the City of Galt's total emissions of 172,428 MT CO_2e, the 2009 Countywide GHG Inventory concluded that emissions from the City of Galt represent 1.2 percent of the total countywide emissions. Furthermore, distributed across the City's 2005 population of 23,913, the Citywide emissions from the City of Galt result in a per capita emissions rate of 7.2 MT CO_2e/yr/capita. Such per capita emissions are higher than the per capita emissions for residents in Citrus Heights and Elk Grove, but are lower than the per capita emissions for all other communities within the County, including individuals living in unincorporated parts of the County. The 2009 Countywide GHG Inventory noted that in order to meet the State's emissions reductions goals established in AB 32, for the year 2020, the countywide per capita emissions would need to be approximately 9.7 MT CO_2e/yr/capita. Thus, based on the methodology used in the 2009 Countywide GHG Inventory, in 2005, Citywide emissions within the City of Galt resulted in per capita emissions rate below the level deemed necessary to achieve the emissions reductions goals established by AB 32.

As discussed previously, the CARB has recently adopted updated per capita emissions standards in compliance with AB 32 and SB 32. Thus, while the 2009 Countywide GHG Inventory concluded that a per capita emissions rate of 7.2 MT CO_2e/yr/capita would be sufficient to meet the requirements of AB 32, with the subsequent adoption of SB 32 and the release of the 2017 Scoping Plan, the CARB has determined that per capita emissions must be reduced to 6 MT CO_2e/yr/capita by the year 2030 and 2 MT CO_2e/yr/capita by the year 2050. Therefore, the City of Galt's previously calculated per capita emissions for the year 2005 would be considered to exceed the CARB's per capita emissions goals.

Updated Emissions Quantification

Since the preparation of the 2009 Countywide GHG Inventory, which quantified countywide emissions from the baseline year of 2005, the City's estimated population has grown from 23,913 residents in 2005 to 24,848 residents in 2016.[40] Therefore, an updated emissions estimate has been prepared for the City for the baseline year of 2016. In addition to the growth that has occurred within the City of Galt since the preparation of the 2009 Countywide GHG Inventory, ICLEI has partnered with several organizations in the Statewide Energy Efficiency Collaborative (SEEC). The SEEC has released ClearPath, which is an online tool that can be used to measure and track GHG emissions within California communities. ClearPath replaces the CACP software used during the Countywide GHG Inventory, and includes improvements to GHG emissions inventory methodologies. Considering the growth that has occurred since the preparation of the 2009 Countywide GHG Inventory and the release of the ClearPath software, an update to the 2009 Countywide GHG Inventory was needed.

As part of the process of updating the 2009 Countywide GHG Inventory, the City of Galt undertook an extensive effort to update and expand upon the information used to generate the 2009 Countywide GHG Inventory. To that end, updated information related to Citywide GHG emissions was obtained from the SMUD, the City's solid waste provider, Cal-Waste, the California Department of Transportation, and South County Transit. In addition, various departments of the

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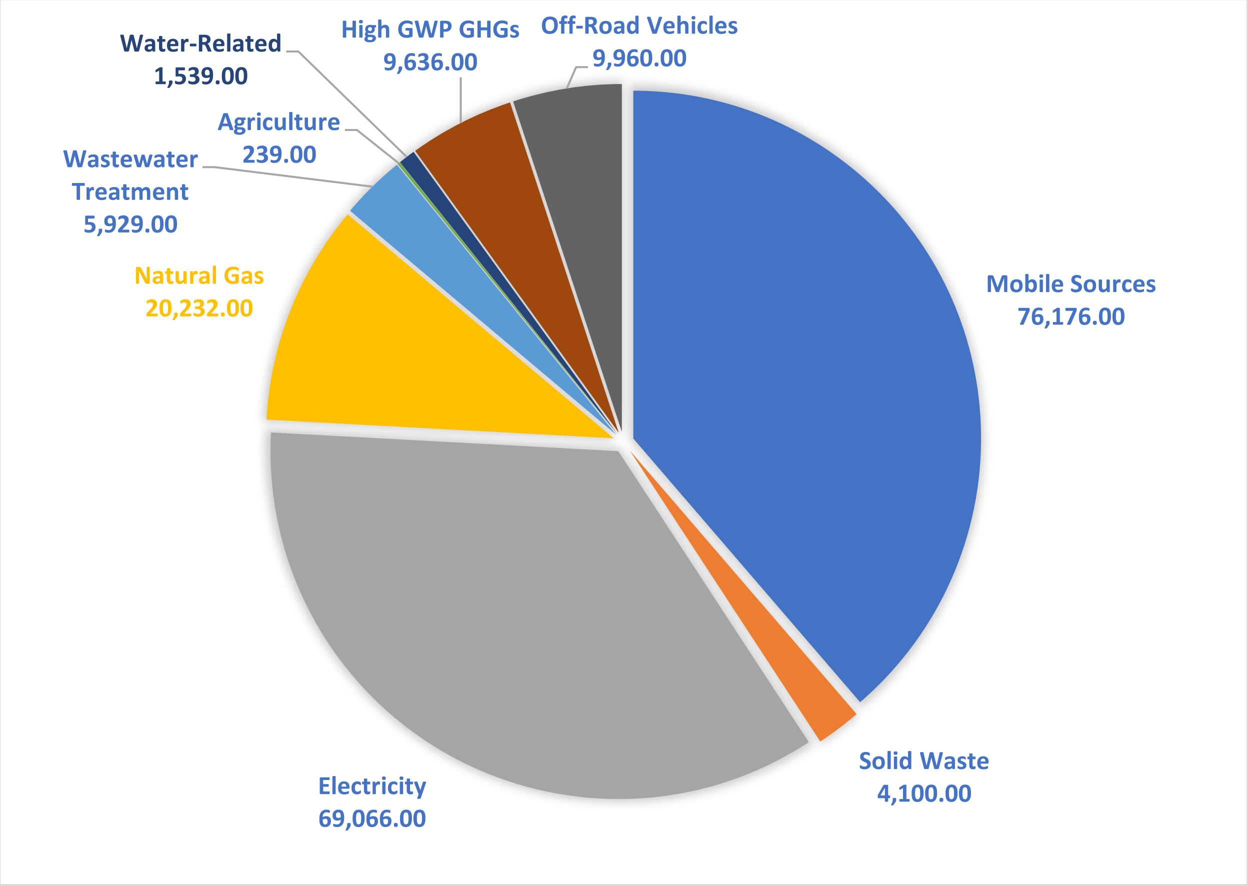
[40] United States Census Bureau. *American Fact Finder*. Available at: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk. Accessed November 2018.

City of Galt provided updated information including, but not limited to, the City's Police Department, the Public Works Department, and the Community Development Department.

Updated information was available for the majority of emissions sources within the City of Galt. However, updated information related to some of the emissions sources included in the 2009 Countywide GHG Inventory could not be obtained by the City. For instance, some sources of emissions, such as emissions from off-road mobile sources, high GWP gases, and natural gas consumption were based on countywide or statewide emissions data and attributed to the City of Galt based on the City's share of the countywide population. For such sources that specific updated information was not available, ClearPath was used to estimate changes in emissions based on population growth experienced within the City of Galt between 2005 and 2016.

The estimated Citywide GHG emissions for the year 2016 are presented in Figure 7 below.

Figure 7
City of Galt 2016 GHG Emission (MT CO_2e)



Source: Clearpath, 2018.

The total Citywide emissions in 2016 equaled to 196,877.0 MT CO_2e, which represents an increase in emissions of 24,449.0 MT CO_2e since 2005. The increase in total Citywide emission is likely a result of continued development within the City. However, some portion of the growth in GHG emissions may have resulted from differing methodologies, assumptions, emissions factors, or GWPs of the GHGs inventoried in the 2009 Countywide inventory and the 2016 inventory.

While the City's overall emissions have increased, so too has the City's population. Nevertheless, the growth in the City's emissions has heretofore outpaced the growth in the City's population, and, as a result the City's per capita emissions rate has increased from the estimated 2005 level of 7.2 MT CO_2e/yr/capita to a 2016 level of 7.9 MT CO_2e/yr/capita.

Emissions Forecasts and Reduction Targeting

As discussed above, AB 32 and SB 32 mandate statewide GHG reductions by the years 2030 and 2050, and the CARB's 2017 Scoping Plan Updated includes per capita emissions goals for local governments to use when establishing consistency with AB 32 and SB 32. In order for this CAP to demonstrate the City of Galt's consistency with applicable statewide legislation, future GHG emissions resulting from development within the City must be forecasted for the target years of 2030 and 2050.

Emissions Forecasts

The City's 2030 General Plan established a vision for growth within the City's Planning area. Using the City's adopted General Plan in combination with the current and anticipated regional economic conditions, the SACOG has produced growth estimates for the number of households that will be developed within the City of Galt. Based on SACOG's growth projections estimates for the number of households within the City by the year 2030, the City of Galt's population is anticipated to increase to 32,108 residents, which would be an increase of 5,175 residents from 2016 population levels. It should be noted that the City of Galt's 2030 General Plan, adopted in 2009, identifies the buildout year for the General Plan as the year 2030. However, as a result of slowed economic activity during the Great Recession of 2008, development in the City of Galt has progressed at a slower rate than previously anticipated. Owing to the slower than anticipated rate of growth within the City, SACOG's population estimates for the year 2030 are lower than the buildout population estimates for the City. While the City's General Plan anticipates that the General Plan will be built out by the year 2030, SACOG provides interim population estimates for the year 2035, and assumes that build out of the City would not occur until after 2035. Considering the rate of achieved growth within the City, and the land uses anticipated in the City's General Plan, the City has concluded that build out of the General Plan is not anticipated to occur by the General Plan target year of 2030.

Based on the City's realized growth rates, as well as SACOG's growth estimates for the region, for the purposes of this CAP, full buildout of the City of Galt is anticipated to occur by the year 2050. Using SACOG's estimated number of households within the City of Galt at buildout the City's population is anticipated to grow to approximately 56,090 residents, which would represent a further growth of 26,059 residents. The residential growth anticipated for the City of Galt would be complimented by increased employment opportunities within areas planned for commercial, industrial, and office/professional uses.

Growth of residential and employment type development within the City of Galt will increase GHG emitting activities such as the use of fossil fueled vehicles, the consumption of electricity, the consumption of water, the generation and treatment of wastewater, and the disposal of solid waste. Additionally, as the City of Galt's residential, commercial, and industrial sectors grow, the size and activity of the municipal government is anticipated to grow as well. Such growth in the municipal government is anticipated to include increased electricity consumption related to new or expanded government facilities, installation and operation of new streetlights, expansion of the City's vehicle fleet, and increased wastewater treatment volumes at the City's wastewater treatment plant.

Based on the growth anticipated within the City of Galt for the community and municipal government, future emissions within the City were estimated for the years 2030 and 2050. It should be noted that in the absence of the City of Galt's adoption of a CAP, certain statewide actions are anticipated to lower emissions from common sources such as electricity generation and vehicle use. Such statewide actions include, but are not limited to, the RPS program that reduces the carbon intensity of electricity generations, programs related to AB 1007, which include the LCFS to reduce the carbon intensity of transportation fuels and promote alternatively fueled vehicles. To illustrate the efficacy of such statewide actions, two separate emissions forecasts have been prepared for the years 2030 and 2050. The first emissions forecast, hereinafter referred to as the Business As Usual (BAU) forecast scenario, does not include any statewide actions that may reduce GHG emissions. Thus, the BAU forecasts present a worst-case emissions scenario predicting the emissions that could occur, under the growth scenarios discussed above, should the City of Galt and State fail to act sufficiently to control future GHG emissions.

However, as previously stated, statewide emissions reductions strategies are in place related to electricity generation and demand, transportation, and various other emissions sources, and such strategies will work to reduce GHG emissions from activities within the City of Galt even in the absence of a City adopted CAP. Therefore, a second emissions forecasting scenario has been prepared that depicts Citywide emissions that would occur in the absence of specific City policies to reduce GHG emissions, but with implementation of statewide programs that would work to reduce emissions from activities in the City. The emissions forecast presented under the second scenario is considered more likely to occur because statewide programs have been legislated and are currently being enacted, but the worst-case emissions forecast provided by the BAU forecast scenario is useful for analysis purposes and required for qualified CAPs.

Year 2030 and 2050 BAU Emissions Forecast

In the absence of statewide emissions reductions programs and City adoption of this CAP, Citywide emissions are anticipated to grow in proportion to the population growth within the City. The anticipated growth in emissions is presented below in Figure 8 through Figure 10.

The emissions forecasts presented in Figure 8 and Figure 9 are broken down between those emissions originating from activities in the larger community, such as emissions from residential energy use, and emissions resulting from municipal government operations, such as emissions from the City of Galt's vehicle fleet.

Figure 8
City of Galt Community BAU Emissions Forecast

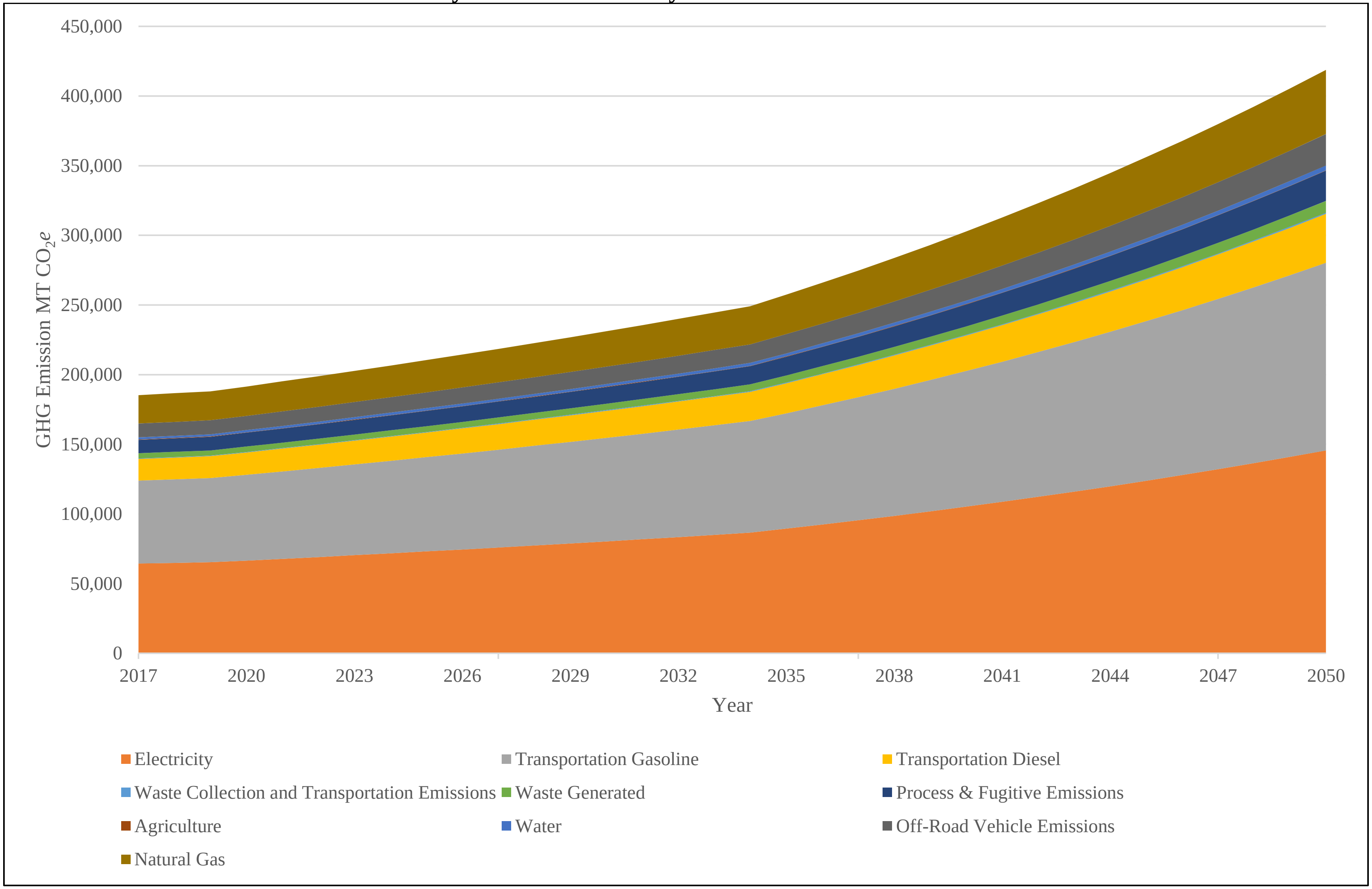


Figure 9
City of Galt Municipal BAU Emissions Forecast

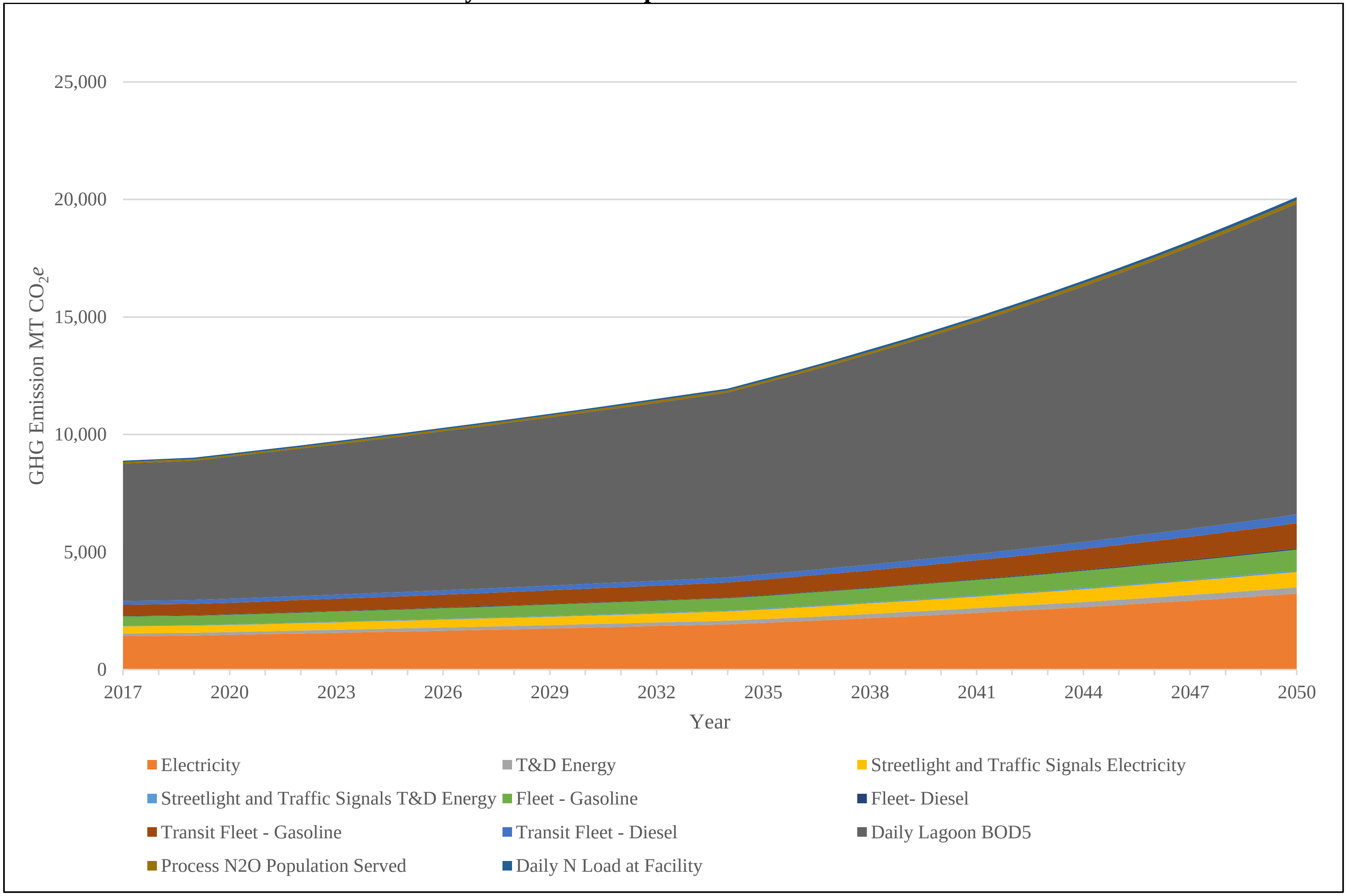
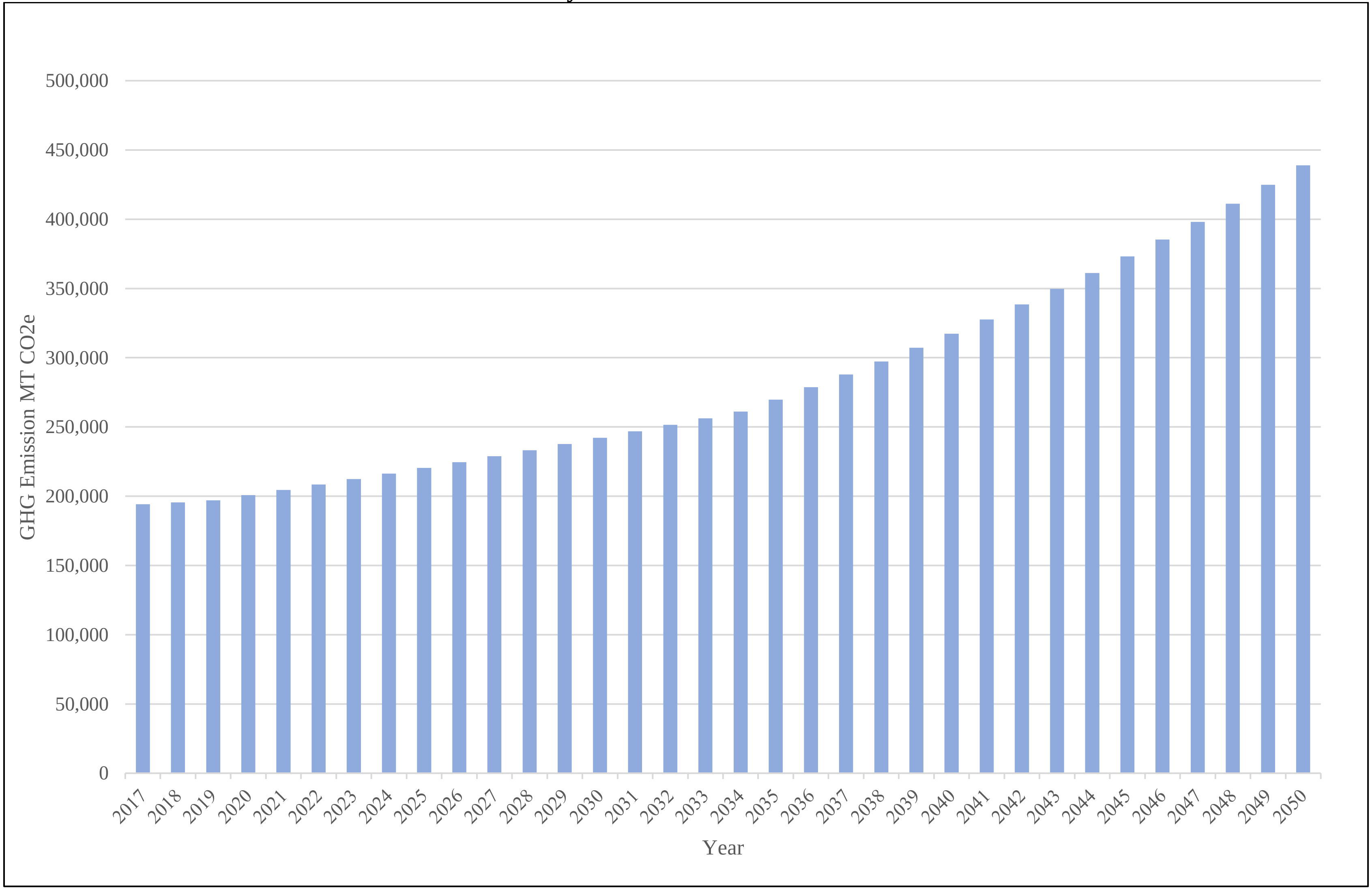


Figure 10
Total City of Galt BAU Emissions Forecast



Under the assumption that neither the City's CAP nor statewide emissions reductions policies were to be implemented, as shown in Table 2, the communitywide GHG emissions would rise from the inventoried level of 196,877 MT CO_2*e* per year to 242,216 MT CO_2*e* per year by 2030 and 438,852 MT CO_2*e* by the year 2050.

Table 2
City of Galt Community BAU Emissions Forecast

	2005	2016	2030	2050
Population	23,913	24,848	32,108	56,090
Total Community Emissions	172,428	196,877	242,216	438,852
Per Capita Emissions Rate	7.2	7.9	7.54	7.82

Sources: Sacramento County Department of Environmental Review and Assessment. Greenhouse Gas Emissions Inventory for Sacramento County. June 2009; Clearpath, 2019.

The foregoing increases in total GHG emissions would occur in concert with, and in a large part because of, concurrent growth in the population of the City of Galt. Therefore, despite the total increase in GHG emissions, per capita emissions rates would fall from 7.9 MT CO_2*e*/yr/capita in 2016 to 7.54 MT CO_2*e*/yr/capita in 2030 before rising to 7.82 MT CO_2*e* per capita per year in 2050. Notwithstanding the slight decrease in per capita emissions rates between 2016 and 2030, the City of Galt's anticipated per capita emission rates under the BAU scenario would exceed the CARB's recommended thresholds presented in Table 1 above.

Year 2030 and 2050 Emissions Forecasts with Statewide Programs

As discussed throughout this document, the State of California has initiated numerous programs that act to reduce GHG emissions from a variety of sources throughout the State. Such programs have been enacted irrespective of the adoption of a CAP by the City of Galt, and would act to reduce GHG emissions from existing and future development within the City.

Actions initiated as part of existing statewide programs would include, but are not limited to, the RPS for electric utilities, low carbon fuel standards, building energy efficiency standards, water use efficiency standards, and solid waste reduction measures.

Although initiated at a statewide level, the foregoing statewide programs would result in demonstrable emissions reductions at a local level. For instance, the State's recently updated RPS program now requires that all electricity provided to customers by public utilities within the state be sourced solely from renewable sources by the year 2045. Because SMUD is subject to the State's RPS requirements, electricity consumption within the City of Galt in the years 2045 and beyond will not result in GHG emissions. Considering that electricity consumption represents one of the largest existing sources of GHG emissions from City activities, the elimination of such emissions due to implementation of the RPS program will result in the avoidance of a significant amount of GHG emissions. Similarly, statewide requirements for low carbon fuel standards, zero emissions transit fleets, and vehicle efficiency standards will reduce the rate of emissions from vehicle use within the City of Galt, irrespective of the City's adoption of this CAP.

Considering that full implementation of the State's existing programs would reduce GHG emissions from existing and future development within the State, including within the City of Galt, future emissions within the City of Galt will likely be lower than the emissions presented under the BAU development scenario above. Consequently, a second emissions forecast scenario has been prepared to account for such statewide programs. It should be noted that other than the inclusion of statewide programs, all other assumptions related to future development within the City and emissions sources remained constant between the BAU emissions forecast and the emissions forecast with statewide programs.

The results of the emissions forecast scenario that included consideration of adopted statewide programs are presented in Figure 11 through Figure 13 below.

Full implementation of currently adopted statewide policies would result in substantial reductions to existing sources of emissions while also reducing the amount of emissions that would be anticipated from future development. As a result, and as shown in the Figure 11 through Figure 13 below, despite the continued growth of the City of Galt, GHG emissions are anticipated to initially fall from the 2016 inventory level of 196,877 MT CO_2e per year to 172,736 MT CO_2e per year by 2030. However, as growth intensifies within the City of Galt past the year 2030, emissions are anticipated to rise to a buildout level of 225,548 MT CO_2e per year in 2050. Estimated population, emissions level, and per capita emissions rates with inclusion of statewide programs are presented in Table 3.

Table 3
City of Galt Community Emissions Forecast with State Programs

	2005	2016	2030	2050
Population	23,913	24,848	32,108	56,090
Total Community Emissions	172,428	196,877	172,736	225,548
Per Capita Emissions Rate	7.2	7.9	5.38	4.02

Sources: Sacramento County Department of Environmental Review and Assessment. Greenhouse Gas Emissions Inventory for Sacramento County. June 2009; Clearpath, 2019.

The inclusion of the adopted RPS requirements for energy generation results in large reductions in electricity related GHG emissions from municipal and communitywide activities. Specifically, under the BAU scenario electricity related emissions are anticipated to equal 82,663 MT CO_2e in 2030 and 149,836 MT CO_2e in 2050. However, implementation of RPS requirements reduces electricity related emissions to 39,765 MT CO_2e in 2030 and eliminates such emissions by the year 2050.

With the reduction and eventual elimination of emissions related to electricity consumption, mobile emissions sources (such as on-road vehicles as well as off-road equipment) represent the majority of emissions on a communitywide basis. As discussed previously, various statewide programs have been enacted to reduce the GHG emissions intensity from mobile sources. The ultimate effect of existing statewide programs is that the average vehicle driven in the years 2030 or 2050 will result in less intense GHG emissions per mile than vehicles driven today. Despite the reduction in emissions intensity per mile driven, the estimated growth in City population and resultant increases in Citywide vehicle miles travelled (VMT) is anticipated to result in an overall increase in mobile-sourced emissions through the year 2050. Such increases result in mobile sourced emissions representing 47 percent of total emissions within the City of Galt by 2030, and 60 percent of total emissions within the City of Galt by 2050.

In regard to sources of GHG related to municipal operations, the treatment of wastewater contributes the greatest amount of GHG emissions related to municipal government operations. It should be noted that wastewater being treated within the City's wastewater treatment plant is generated by development within the community at large; however, for GHG reporting purposes, such emissions have been attributed to the City because the emissions occur at the City owned wastewater treatment plant. As such, treatment of wastewater is anticipated to result in 7,446 MT CO_2e in 2030 and 13,498 MT CO_2e in 2050, which equates to 83 percent of total estimated municipal emissions in 2030 and 95 percent of total estimated municipal emissions in 2050.

Per Capita Emissions Rate

Despite the anticipated growth in overall GHG emissions, the anticipated increase in the population of the City of Galt would result in a declining per capita emissions rate for Citywide emissions. When statewide programs are considered, citywide emissions would result in a per capita emissions rate of 5.38 MT CO_2e/yr/capita in 2030 and 4.02 MT CO_2e/yr/capita in 2050. Thus, with consideration of existing statewide emissions reductions policies, per capita emissions within the City are anticipated to be below the CARB's 2030 per capita emissions goal of 6 MT CO_2e/yr/capita, but would exceed the CARB's 2050 per capita emissions goal of 2 MT CO_2e/yr/capita.

A comparison of the forecasted per capita emissions rates with the CARB's standards are presented in Figure 14 below. As shown in Figure 14, without the implementation of statewide programs to reduce GHG emissions, forecasted BAU GHG emissions from the City of Galt would result in per capita emissions rates that exceed the CARB's recommended thresholds in the years 2030 and 2050.

Consideration of adopted statewide programs intended to reduce GHG emissions demonstrates that GHG emissions within the City of Galt would result in a per capita emissions rate below the CARB's recommended threshold for the year 2030. Despite a continued reduction in per capita emissions between the year 2030 and 2050 due to implementation of statewide reduction strategies, the per capita emission rate within the City of Galt during the year 2050 would exceed the CARB's recommended threshold for the year 2050. Consequently, in order to comply with the CARB's recommended per capita emissions thresholds, and thus AB 32 and SB 32, the City of Galt must take further action to reduce GHG emissions in the year 2050.

Figure 11
City of Galt Community Emissions Forecast with Statewide Programs

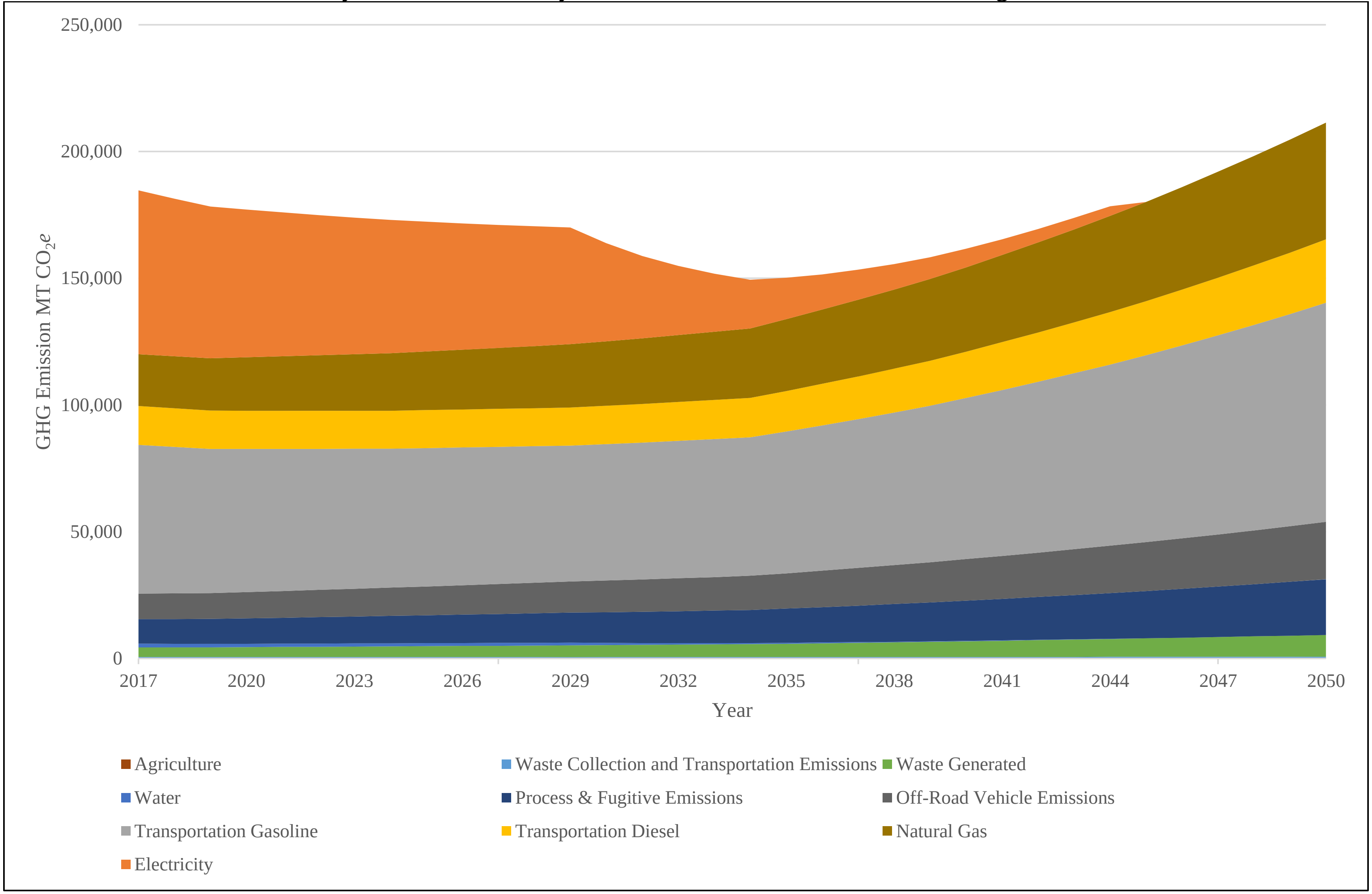


Figure 12
City of Galt Municipal Emissions Forecast with Statewide Programs

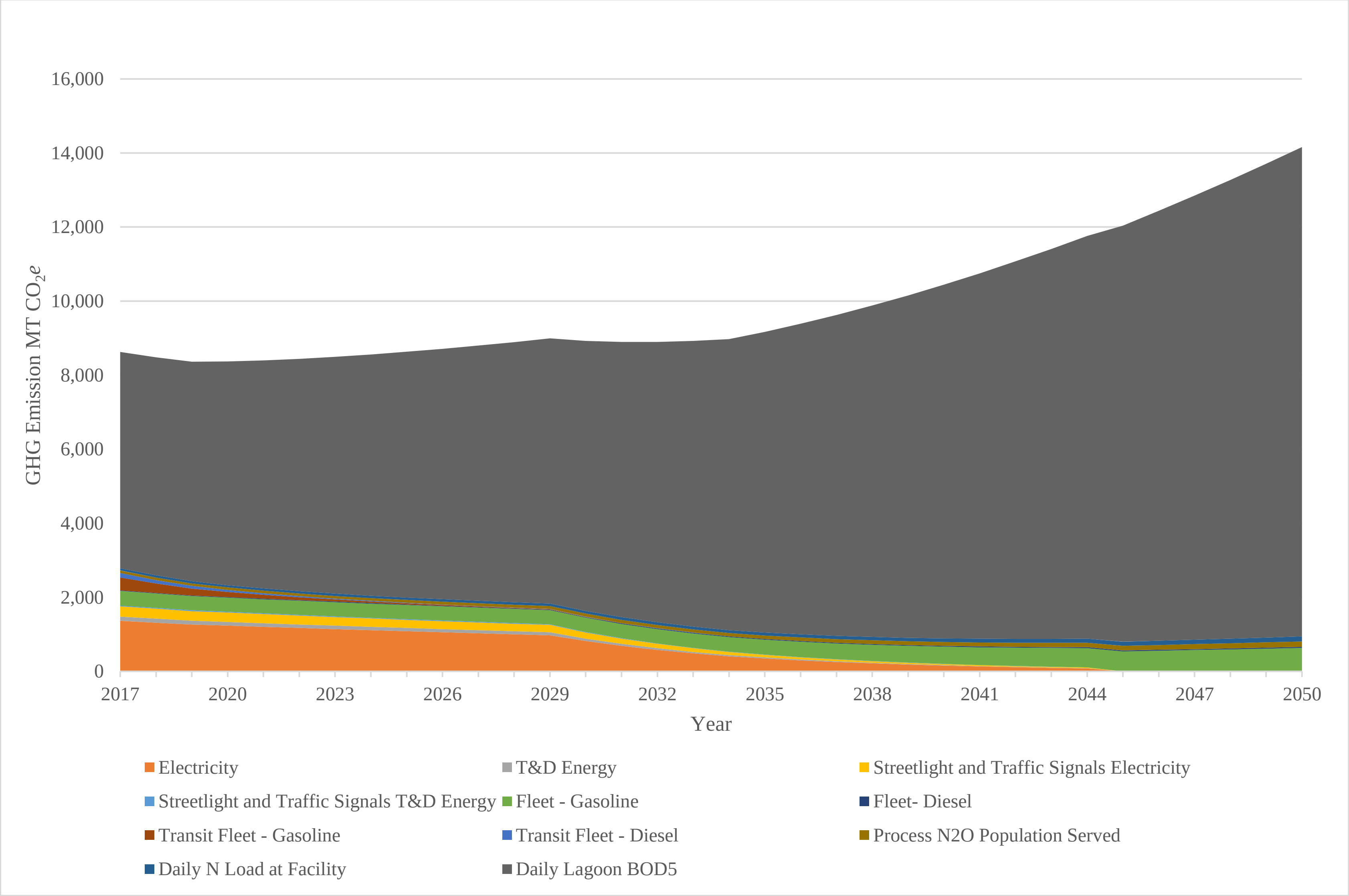


Figure 13
Total City of Galt Emissions Forecast with Statewide Programs and Per Capita Emissions Rate

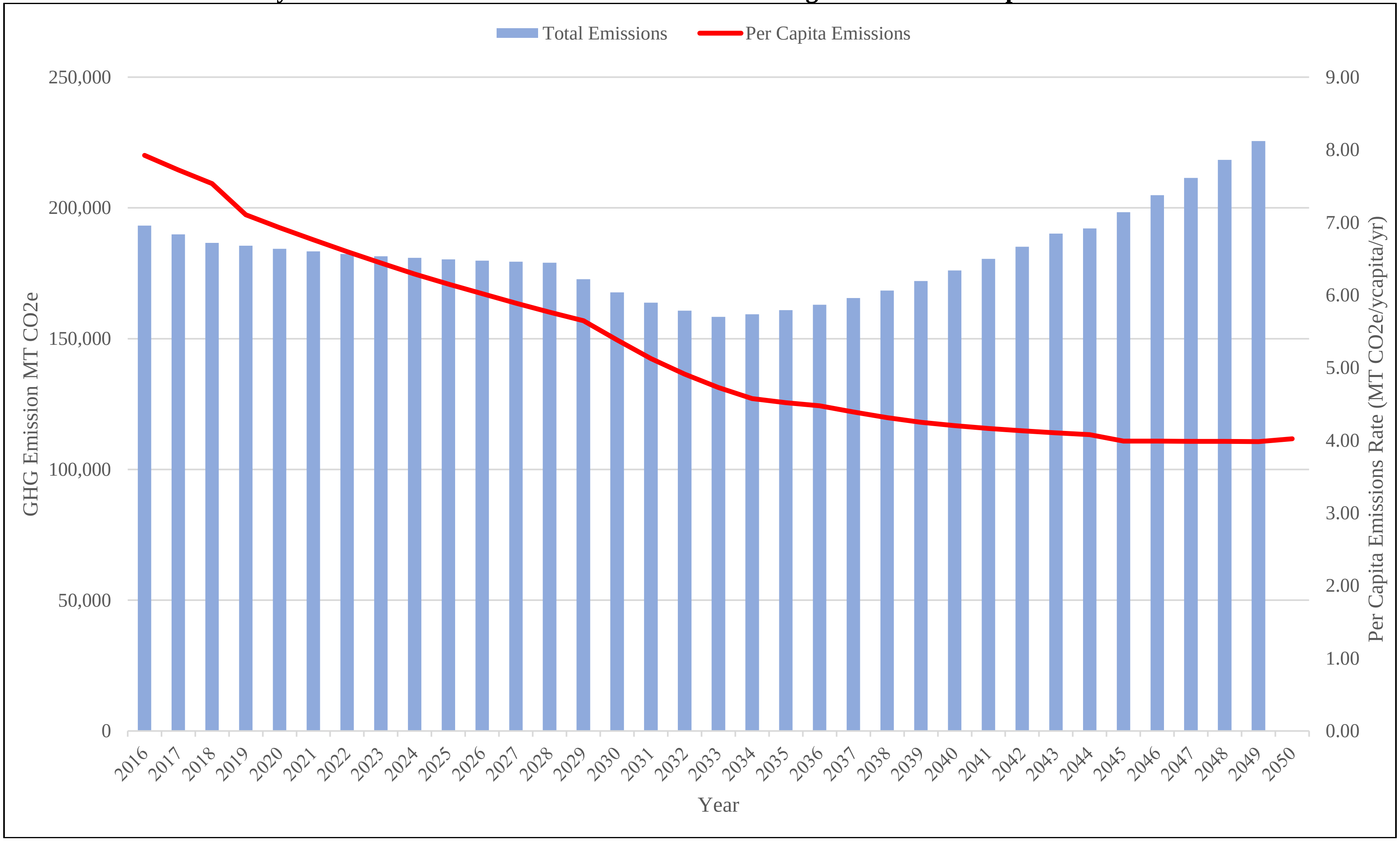
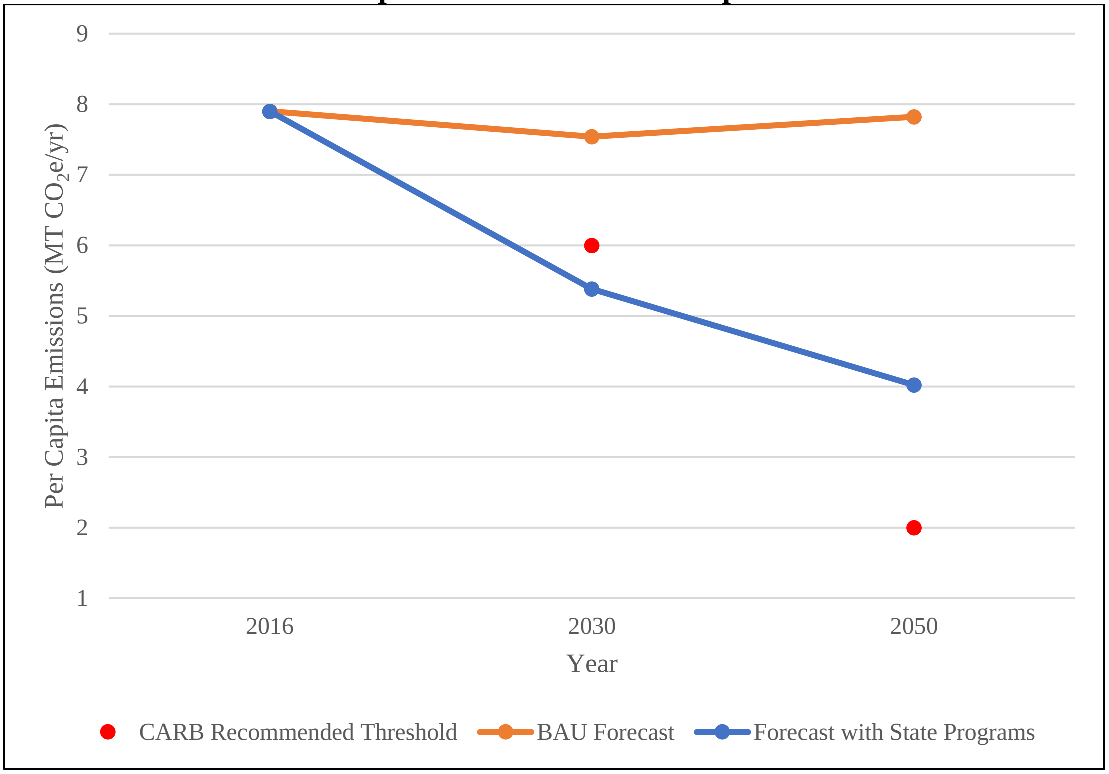


Figure 14
Per Capita Emissions Rate Comparison



Emissions Reductions Target

As noted above, activities within the City of Galt are anticipated to result in total emissions of 225,548 MT CO_2e/yr in 2050. However, based on the CARB recommended threshold of 2 MT CO_2e/yr/capita for the year 2050 and the City's estimated population of 56,090 residents in the year 2050, in order for the City of Galt to comply with the GHG reductions mandated by AB 32 and SB 32, emissions from citywide operations may not exceed a maximum of 112,180 MT CO_2e/yr (2 MT CO_2e/yr/capita x 56,090 residents = 112,180 MT CO_2e/yr). Consequently, the City must adopt emissions reduction measures to reduce estimated future emissions in the year 2050 by 113,368 MT CO_2e, which represents 50 percent of the forecasted emissions in 2050. Chapter 5 of this CAP will introduce reduction measures necessary to ensure the City achieves the CARB's recommended emissions threshold for the year 2050 and, thus, complies with AB 32 and SB 32.

5 EMISSIONS REDUCTION MEASURES

The following chapter outlines the proposed GHG emissions reduction measures.

5.1 EMISSIONS REDUCTION MEASURES

As discussed in Chapter 4 of this CAP, the emissions quantification has shown that due to implementation of statewide policies and regulations related to the reduction of GHG emissions, activities within the City of Galt are anticipated to result in GHG emissions in compliance with the CARB's per capita emissions target of six MT CO_2e/yr/capita by the year 2030. However, by the year 2050, emissions within the City of Galt are anticipated to exceed the CARB's per capita emissions threshold of two MT CO_2e/yr/capita. In order to meet the CARB's per capita emissions threshold for the year 2050, future GHG emissions must be reduced by 113,368 MT CO_2e. The following reduction measures have been separated into several categories based on the emissions estimations performed for the City of Galt and presented in Chapter 4.

For each strategy presented below, specific implementation actions are identified. Additionally, the party responsible for implementation of such actions is identified. Implementing parties are broken into three categories: Existing, representing actions that would reduce existing emissions within the City of Galt or be implemented within existing developments; Municipal, representing actions that would be implemented by the City of Galt and would reduce emissions related to operations of the municipal government or the larger community; and Future Development, which represents actions that would be implemented by new development or redevelopment projects within the City.

Reduction Measure Quantification

In addition to identifying the responsible parties, the quantified efficacy of each reduction measure is also specified. To the extent feasible, the efficacy of each reduction measure was quantified independently using the ClearPath software. However, in some cases the parameters of ClearPath did not allow for the individual quantification of reduction measures. As such, some reduction measures may have been grouped and quantified together. In other cases, due to the limitations of the ClearPath software, emissions reductions attributable to some reduction measures, such as Transportation Measures 3, 6, and 7, could not be quantified using the ClearPath software and were instead quantified using off-model calculations.

It should be noted that all reduction measures take into account statewide programs that would work to reduce emissions simultaneous to the City of Galt's efforts. For instance, the State's RPS for publicly owned utilities was included in the ClearPath emissions modeling for all reduction measures as were various programs related to vehicle emissions reductions such as the State's Low Carbon Fuel Standard and Pavley fuel efficiency requirements. As discussed in Chapter 4 of this CAP, such statewide programs have been considered during emissions forecasting. As such the emissions reductions from such programs have already been accounted for and are not recounted in the following section.

All emissions quantification are presented in Appendix A to this CAP.

Key

Existing	*Existing*: Represents actions that would reduce existing emissions within the City or be implemented within existing developments.
Municipal	*Municipal*: Represents actions that would be implemented by the City and would reduce emission related to operations of the municipal government or the larger community.
Future Development	*Future Development*: Represents actions that would be implemented by new development or redevelopment projects within the City.

Transportation Related Measures

Transportation Measure 1:

Existing

Municipal

Future Development

Bicycle and Pedestrian Infrastructure Improvement. Improve bicycle and pedestrian infrastructure within the community to increase non-motorized travel. Continue to pursue grant funding opportunities such as those recently awarded to the City by SACOG for the completion of the C Street Complete Streets Project. In consultation with SACOG, the City shall seek to upgrade existing infrastructure for alternative transportation, and require new development to include infrastructure for alternative transportation. Upgrades of existing infrastructure may include extension of sidewalks, re-striping of roads to include bike lanes, posting of "Share the Road" street signs, and encouragement of related infrastructure such as long-term bicycle parking or employee showers to encourage the use of alternative transportation.

Recognizing safety concerns of speeding and other issues along Carillion Boulevard, the City of Galt has sought to prepare a Carillion Boulevard Transportation Corridor Management Plan. The Plan is intended to lay out a vision for transforming Carillion Boulevard from a high speed "auto-centric" arterial to a collector facility that is friendly to pedestrians and bicyclists. Upon completion of the Carillion Boulevard Transportation Corridor Management Plan, the City of Galt shall seek to implement the recommendations of the Plan to encourage alternative modes of transportation within the City. It should further be noted that in compliance with the California Complete Streets Act, the City of Galt's General Plan includes Goal C-8 and Policies C-8.1 through

C-8.8, which encourage the implementation of complete streets throughout the City. To ensure full implementation of the foregoing General Plan policies, the City of Galt shall consider future adoption of a Complete Streets Ordinance.

It should be noted that promotion of alternative means of transportation within the City complies with various other goals and policies within the City of Galt's General Plan, such as Goal C-1, C-3, C-5, C-6, and policies C-6.1 through C-6.11. The inclusion of such policies demonstrates the City of Galt's existing commitment to promoting the use of alternative transportation within the City.

Actions: The majority of the actions listed below are anticipated to be implemented by the City's Public Works Department and the Community Development Department as applicable. Furthermore, future development within the City would be responsible for providing on-site pedestrian and bicycle facilities.

- Implement the City of Galt Bicycle Transportation Plan to improve bicycle infrastructure within the City of Galt, and continue implementation of General Plan Goal C-6 and Policies C-6.1 through C-6.11, which promote the use of alternative means of transportation within the City.
- The City of Galt shall ensure that the City of Galt Bicycle Transportation Plan is updated in accordance with any future updates to the City of Galt's General Plan.
- Review new development proposals to ensure that proposed infrastructure accommodates safe routes to school, pedestrian infrastructure, and bicycle infrastructure.
- The City will work to identify areas for expansion and upgrade of the existing pedestrian and bicycle infrastructure within the City.
- Should the Carillion Boulevard Transportation Corridor Management Plan be adopted, the City shall seek to implement the recommendations of the Plan that encourage the use of alternative means of transportation within the City of Galt.
- By no later than the year 2025 the City shall formally consider adoption of a Complete Streets Ordinance.
- Consider adopting minimum standards for bicycle parking at new developments.
- Continue to require new developments to include bicycle and pedestrian path connections on- and off-site.
- Periodically consider feasibility of allowing bike share programs within the City of Galt based on changes in technologies and the City's population.

- Promote destination facilities such as lockers and showers at new development through voluntary development design guidelines.
- Promote installation of bicycle and pedestrian infrastructure at existing private developments within the City.

Quantification: Emissions reductions for Transportation Measure 1 were quantified using ClearPath and are presented below.

Transportation Measure 1	
Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
ClearPath	2,643
Note: See the Appendix A for calculation details.	

Transportation Measure 2:

Existing

Municipal

Future Development

Increase Use of Public Transit. In consultation with South County Transit and SACOG, the City of Galt shall seek to upgrade existing infrastructure for alternative transportation and require new development to include infrastructure for alternative transportation with a specific focus on accommodating the continued use of public transit within the City of Galt. Such upgrades may coincide with the upgrades discussed in Transportation Measure 1, or include site specific design features such as designated bus lanes or turnouts, Park-N-Ride areas, sidewalk extensions, and bicycle infrastructure.

An example of the City of Galt's existing investment in public transit infrastructure is the parking lot and transit stop recently constructed as part of the Central Galt Corridor Project. The new parking lot was intended for use as a Park-N-Ride lot for future connections with the Commuter Train Project associated with the State's High Speed Rail project. Consideration of the State's High Speed Rail project is on-going; however, any future expansion of commuter rail service to the City could be served by the new Park-N-Ride lot.

Increasing mass transit use within the City would comply with Goal C-5 of the City of Galt's General Plan, which seeks to promote a safe and efficient transit system within the City.

Actions: The following measures will be implemented by the Community Development Department as well as the Public Works Department. Both departments would work in tandem with South County Transit to expand public transit service within the City. In addition, future development within the City would accommodate the use of public transit through design of future infrastructure.

- In concert with South County Transit, seek to increase the frequency and locations of existing bus service within the City to meet ridership needs.
- Through consultation with South County Transit, establish a timeline for future expansion of bus service within the City based on projected development within the City and population growth. Expansion of bus service should include an increase in the area of the City serviced by public transit as well as an increase in the frequency of bus service to the City.
- Continue work with SACOG, South County Transit, and other relevant agencies related to the implementation of commuter rail service (in compliance with Policy C-5.5 of the City of Galt's General Plan).
- Consider drafting a comprehensive Transit Plan (in compliance with Policy C-5.7 of the City of Galt's General Plan), including plans for expansion of public transit within the City of Galt based on specific population and ridership growth metrics. The City shall aim to complete preparation of the Transit Plan by 2025.

Quantification: Emissions reductions resulting from Transportation Measure 2 were quantified based on two distinct types of expanded transit service. Transit service could be expanded through the addition of new routes to the current transit system, thus increasing the area directly serviced by South County Transit, or by increasing the frequency of existing transit service. Such expansions of transit service may be undertaken together or separately. For the purposes of estimated GHG emissions reductions related to implementation of Transportation Measure 2, the area covered and the frequency of transit were estimated to increase by 50 percent. It should be noted that potential future linkages with the State's Commuter Train Project are speculative and have not been modeled. Should such linkages or any other commuter train projects be implemented with connections within the City of Galt, increased commuter rail access would likely result in large increases in the efficacy of this measure.

Transportation Measure 2	
Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
ClearPath	317
Note: See the Appendix A for calculation details.	

Transportation Measure 3:

Existing

Municipal

Future Development

Safe Routes to School. Continue implementation of the City's Safe Routes to School program. Work with SACOG and local school districts to enhance pedestrian crossings, encourage active forms of transportation to school, and create educational programs that teach students bicycle safety. For instance, students could form walking or biking school buses wherein groups of students walk or bike to and from school in the presence of a designated chaperone. In addition, as new development occurs within the City of Galt, new safe routes to school linkages shall be created between schools serving the community and new developments. It should be noted that Citywide pedestrian and bicycle infrastructure improvements required by Transportation Measure 1 would likely aid the implementation of Transportation Measure 3.

Actions: Implementation of Transportation Measure 3 would primarily be the responsibility of the Public Works Department. Furthermore, future development within the City would be responsible for providing on-site safe routes to school.

- Implement the City of Galt Bicycle Transportation Plan to improve bicycle infrastructure within the City.
- Ensure new school campuses within the City of Galt include designations of Safe Routes to School for each new school site.
- Require new development proposals within areas designated as Safe Routes to School to show pedestrian and bicycle improvements within development plans sufficient to provide students with a safe means of walking or bicycling to school.
- Work with local school districts to promote walking or biking school buses wherein groups of students walk or bicycle to school under the supervision of designated chaperones.

Quantification: Due to limitations within the ClearPath software, emissions reductions from Land Use Measure 3 could not be directly quantified using ClearPath. However, several sources of information were consulted to quantify the potential emissions reductions from Land Use Measure 3. The previously prepared City of Chico's CAP included a determination of the GHG emissions reductions resulting from a Safe Routes to School Program on a per student basis, based on calculations of vehicle emission rates and usage. In addition, Marin County quantified the efficacy of their Safe Routes to School program, which included a quantification of the amount of carbon emissions reduced through program implementation.[41] Geographically and contextually, the City of Chico provides a better comparison when considering the efficacy of safe routes to school programs. For instance, the City of Chico is similarly situated in a relatively flat topographical area, whereas the area analyzed in Marin County includes more varied terrain. Steep terrain can deter the use of alternative means of transportation, thus potentially reducing the efficacy of the safe routes to school program in Marin County. However, because the Marin County program includes participating cities of varying sizes, the findings of the Marin County program assessment may be more broadly applicable than the determinations reached solely on information from the City of Chico. To account for the differences and similarities between Safe Routes to School programs within the City of Chico, Marin County, and the City of Galt, potential emissions reductions within the City of Galt were quantified using information from Chico and Marin County separately, and the median potential GHG emissions reductions was then calculated for consideration in this CAP.

Using student enrollment projections included in the City of Galt's General Plan, the GHG emissions reductions that could result through implementation of Land Use Measure 3 were quantified and are presented below.

Transportation Measure 3

Calculation Method	Year 2050 Emissions Reductions (MT CO_2e)
Off-Model Calculation	395

Note: See the Appendix A for calculation details.

Transportation Measure 4:

Municipal

Optimize City Fleet. The City shall conduct an inventory of all City-owned vehicles, which shall include the fuel consumed per year and the fuel economy for each vehicle. Following the inventory, the City shall establish a target miles per gallon (mpg) goal, for improving fuel economy across the City's entire vehicle fleet. The target mpg shall be designed to reduce fuel consumption by City-owned vehicles. In order to meet the City's target mpg, in compliance with General Plan Policy COS-6.4, the City shall prioritize the purchase of alternatively fueled vehicles. As part of fleet optimization and fleetwide fuel economy improvements, the City shall ensure the proper maintenance of vehicles (such as proper tire inflation and oil changes) to ensure City vehicles operate at the maximum fuel efficiency possible, and inform City employees of the benefits of reducing vehicle idling times. It should be noted that the City of Galt Police Department began using an electric vehicle during a one-year

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[41] Marin County. *Safe Routes to Schools Program Evaluation 2003-2004*. August 2004.

trial period beginning in June of 2018. Continued use of zero emissions vehicles by the City of Galt Police Department and other City of Galt departments would aid in improving the City's fleetwide fuel economy.

It should be noted that at the time of preparation of this CAP, technologies for zero emissions trucks and heavy-duty vehicles were just becoming available on the market. By the CAP target year of 2050, the technologies supporting zero emissions trucks and heavy-duty vehicles will undoubtedly have improved making the integration of such vehicles into the City's light and heavy-duty fleet reasonable to anticipate.

Actions: Fleet optimization will principally be the responsibility of the City's Public Works Department; however, other departments that own vehicles, such as the City's Police Department, and the Parks and Recreation Department would also be responsible for implementing this measure.

- Consult with relevant agencies to seek grant funding opportunities to support the purchase of fuel-efficient vehicles.
- Set goal for increased average mpg for the portion of the City's vehicle fleet that is fossil fueled.
- Implement policies for use of alternative fuel vehicles.
- Encourage a reduction in idling time for City vehicles through education of City field crews.
- Encourage the Galt Joint Union High School District and the Galt Union Elementary School District to replace diesel-powered school buses with CNG buses, hybrid buses, all-electric buses, or other emissions-reducing and zero emissions alternatives.
- Investigate the use of alternative fuels, such as renewable diesel and renewable natural gas for vehicle fuel.

Quantification: The efficacy of this measure depends on the target mpg adopted by the City, with a higher mpg target resulting in greater emissions reductions as opposed to a lower mpg target. For the purposes of this analysis the target mpg for municipal fleetwide fuel economy was assumed to be 75 mpg. Although reductions in City vehicle idling will be an effective means of reducing GHG emissions, the GHG emissions reductions anticipated from vehicle idling reductions have not been quantified at this time. Emissions reductions due to reduced vehicle idling times may be reflected in future improvements in the mpg and fuel consumption of City fleet vehicles.

Transportation Measure 4	
Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
ClearPath	421
Note: See the Appendix A for calculation details.	

Transportation Measure 5:

Existing

Municipal

Future Development

Support Electric Vehicle Charging Infrastructure. Encourage installation of electric vehicle (EV) charging stations at existing and future commercial developments within the City, particularly along SR 99. Establish minimum EV charging requirements for new residential developments, and require electrification of new or proposed loading docks in commercial and industrial developments within the City. Install EV charging stations in existing public parking areas, such as those related to government offices or recreation areas. Locating charging stations within the community will encourage intra-community electric vehicle use as well as EV use along SR 99.

Actions: Installation of EV infrastructure at City owned properties will primarily be the responsibility of the Public Works Department with direction from the Community Development Department and the Parks and Recreation Department. In addition, future development within the City would be responsible for providing EV charging infrastructure in compliance with statewide regulations and any development regulations established by the Community Development Department.

- Seek funding to support installation of EV charging technology within the City of Galt.
- Identify potential sites for EV charging stations within City-owned property.
- Update Municipal Code to require EV charging stations and infrastructure as part of new residential, commercial, and industrial development. The City shall seek to incorporate EV charging station requirements into the City's Municipal Code by the year 2025.
- Establish targets for the number of EV charging stations installed at public parking areas. Targets for EV charging stations at public parking areas shall be established by the year 2025.
- Require installation of EV charging stations at all new municipal facilities that include vehicle parking.
- The City shall identify existing municipal facilities where EV charging stations could be installed. Once feasible sites are identified, the City shall pursue grant funding for installation of public EV charging infrastructure.

Identification of suitable locations for EV charging stations at existing facilities shall be completed by the year 2025.

- Should the City construct or operate areas with paid parking, EVs shall be exempt from payment of parking fees to encourage use of EVs within the City.

Quantification: The efficacy of this measure was quantified through the ClearPath software.

Transportation Measure 5	
Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
ClearPath	1,214
Note: See the Appendix A for calculation details.	

Transportation Measure 6:

Existing

Municipal

Future Development

Establish a Transportation Management Association. In compliance with General Plan Policy COS-6.7, the City shall establish a Transportation Management Association (TMA). The TMA may be operated by the City, transit provider, a Business Association, or another entity as appropriate, and operations of the TMA may be conducted independently from or in concert with other nearby jurisdictions and TMAs. In general, TMAs provide ongoing training and special assistance to TMA members for the implementation of commute alternative programs at work sites, including monthly networking meetings and assistance with work site program design. TMA activities include outreach to area employees and residents in an effort to provide varied commute choices, including bicycle and vanpool subsidies, vanpool formation assistance, and transit information.

Actions: Establishment of a Transportation Management Association will require the combined effort of various City departments as well as SACOG, local transit agencies and SMAQMD. Within the City the departments with principal responsibility are anticipated to include the Community Development Department and the Public Works Department.

- In concert with SACOG, South County Transit, SMAQMD, and other local jurisdictions, the City shall seek to establish, participate in, or form a TMA by the year 2035.
- New developments exceeding the size criteria presented in Policy COS-6.7 of the City's General Plan (projects including over 200 full time employees or 500 homes) shall be required to demonstrate membership within future TMAs servicing the City of Galt, prior to approval of development plans.

- Establish a TMA funding mechanism, through a community facilities/services district, membership fee, or other means.

Quantification: According to SMAQMD, establishment of a TMA can result in a five percent decrease in vehicle miles travelled (VMT).[42] Due to limitations within the ClearPath software, emissions reductions from Transportation Measure 6 could not be directly quantified using ClearPath. However, based on SMAQMD's guidance stating that TMAs can reduce VMT by five percent, emissions reductions resulting from implementation of a TMA were calculated outside of ClearPath and are presented below.

Transportation Measure 6	
Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
Off-Model Calculation	5,323
Note: See the Appendix A for calculation details.	

Transportation Measure 7:

Existing

Municipal

Future Development

Promote Anti-Idling/Congestion Management Strategies. Anti-Idling/Congestion Strategies for roadways reduce vehicle idling by implementing strategies that reduce or remove impediments to the free flow of motor vehicles. Strategies include installation of roundabouts, removal of four-way stop signs, diverging diamond intersections, permissive-protective left-turns, etc., and are applicable for GHG emission reductions of all land use projects that include roadways or intersections.

The City of Galt's General Plan currently includes various measures that would implement Anti-Idling/Congestion Management Strategies. For instance, Policy COS-6.6 recommends the use of traffic calming (e.g., traffic circles, curb extensions, and median islands) measures where appropriate in new subdivisions. Additionally, Policy COS-6.1, regarding traffic signal synchronization would create a more efficient flow of traffic through areas with multiple signaled intersections, and Policy C-1.12, regarding grid like street systems, would increase the efficiency of new street systems. Implementation of such measures has already begun in the City, for instance with the recent installation of roundabouts along Twin Cities Road, on the east and west sides of SR 99.

In compliance with the foregoing General Plan policies, the City shall require new development to include Anti-Idling/Congestion

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[42] Sacramento Metropolitan Air Quality Management District. *Recommended guidance for Land Use Emission Reductions, Volume 4*. November 30, 2017.

Management Strategies on at least 50 percent of proposed intersections and roadways. Furthermore, the City shall seek to implement such strategies within existing areas of the City to support Transportation Measures 1, 2 and 3.

Actions: Implementation of the Transportation Measure 7 will be the responsibility of the Public Works Department as well as the Community Development Department. In addition, future development will be responsible for incorporating anti-idling/congestion management strategies into project designs.

- The City shall consider updating design guidelines for new developments to include suggested designs for intersections and roadway segments that include Anti-Idling/Congestion Management Strategies.
- The City shall identify areas within the City Limits where safety or congestion has become a concern and work to develop Anti-Idling/Congestion Management Strategies suitable for addressing such concerns.
- Projects subject to site plan and design reviews shall be required to include Anti-Idling/Congestion Management Strategies on 50 percent of proposed roadways and at 50 percent of proposed intersections or to the maximum extent feasible.

Quantification: According to the California Air Pollution Control Officers Association (CAPCOA), implementation of Anti-Idling/Congestion Management Strategies at 50 percent of roadways within a given area results in a 0.5 percent decrease in VMT.[43] Due to limitations within the ClearPath software, emissions reductions from Transportation Measure 7 could not be directly quantified using ClearPath. However, based on implementation of such measures on 50 percent of roadways and a resulting 0.5 percent decrease in VMT, emissions reductions resulting from implementation of Transportation Measure 7 were calculated outside of ClearPath and are presented below.

Transportation Measure 7	
Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
Off-Model Calculation	553
Note: See the Appendix A for calculation details.	

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[43] California Air Pollution Control Officers Association. *Quantifying Greenhous Gas Mitigation Measures* [pgs. 190-193]. August 2010.

Transportation Measure 8:

Municipal

Promote Local Goods and Businesses. In an effort to reduce VMT related to the movement of goods and encourage residents to support local businesses rather than driving to regional shopping areas, the City of Galt shall enact policies, programs, or services, to support local businesses. Supporting a mix of local businesses allows for residents of the City to live, work, and shop within the City of Galt, without the need to commute or drive to nearby destinations. When considered in combination with other Transportation Measures included in this CAP, residents would be able to use alternative means of transportation within the City to further reduce the VMT needed to reach various destinations.

Consequently, the City shall seek to encourage local goods and businesses through continued support for the Galt Market and encourage diversification of the Galt Market, for instance, by continuing to support produce sales at the Galt Market.

Actions: The City’s Economic Development Department will be the primary department responsible for implementing the following actions for Transportation Measure 8.

- The City of Galt shall ensure that the Market Fairground Master Plan continues to support the Galt Market, and ensures sustainability of existing Galt Market operations.
- Promote reuse and redevelopment of downtown areas of the City of Galt, while respecting the historic nature of the downtown area.
- Continue to promote the existing available properties within the City of Galt and business incentives offered by the City’s Economic Development Department.
- Encourage mixed-use development or development that increases the diversity and proximity of different land use types within the City.

Quantification: Due to limitations within the ClearPath software, and the absence of region-specific studies that quantify emissions savings from local goods in the Sacramento Valley, quantification of this measure is not possible at this time. Nevertheless, the implementation of this measure is anticipated to support many of the measures within this CAP.

Transportation Measure 9:

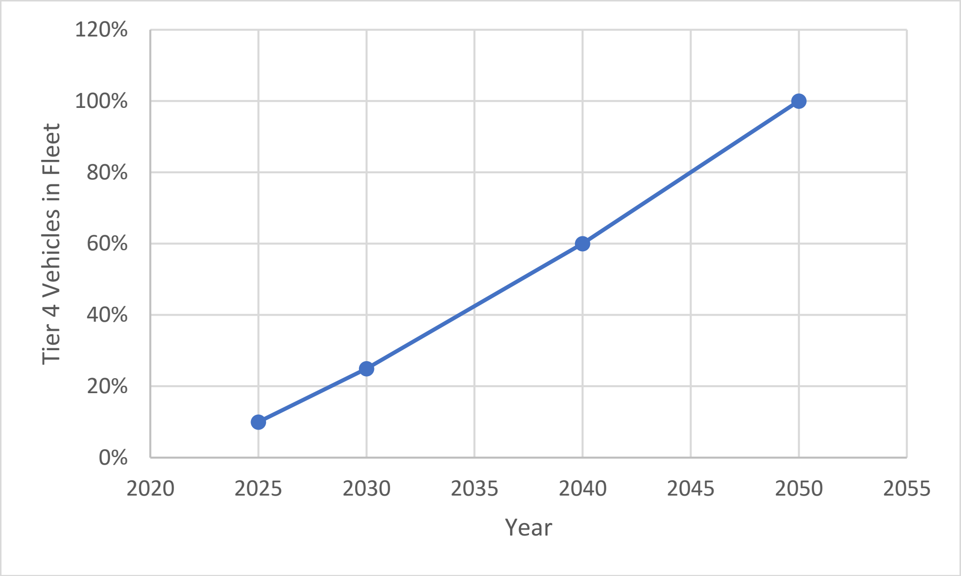
Municipal

Future Development

Mobile Source Emissions Reductions: The City shall seek to reduce emissions from mobile sources other than on-road vehicles. While on-road vehicles, such as passenger cars and heavy-duty trucks, represent the majority of emissions from mobile sources within the City of Galt, emissions from other mobile sources contribute significant amounts of emissions. For instance, operations of fossil-fuel powered landscape maintenance equipment, construction equipment, recreational vehicles, and industrial equipment all result in GHG emissions from combustion of gasoline, diesel, or natural gas. The City shall seek to implement various means of controlling emissions from such sources through encouragement of electric-powered landscaping equipment, requirements for construction equipment used within the City Limits, and other actions.

Actions: The City's Community Development Department will be responsible for implementing the following actions for Transportation Measure 9.

- By the year 2050, require all construction fleets operating within the City of Galt to meet U.S. EPA Tier 4 engine standards. The suggested timeline for implementation of this measures is for 10 percent of construction fleets operating within the City in the year 2025 to meet the U.S. EPA's Tier 4 standard, with the proportion of vehicles in the fleet meeting such standards increasing to 30 percent in 2030, 60 percent in 2040 and 100 percent in 2050. The implementation schedule is depicted in the graph following this bullet list. Compliance with this measure may be achieved through use of Tier 4 engines or implementation of similar methods or technologies to achieve equivalent reductions in construction fleet emissions.
- To the extent feasible, projects subject to site plan and design review shall be required to include outdoor electrical outlets that allow for the use of electrically powered landscaping equipment.
- Projects subject to site plan and design review that would include truck loading docks shall be required to include electrical outlets for each loading dock to reduce the amount of truck idling and truck refrigeration unit generator use.
- New municipal facilities shall be designed to support electrically powered landscaping equipment, and the City shall seek to replace fossil fuel powered landscaping equipment with electrically powered equipment.
- The City shall promote any future SMAQMD or SMUD programs that support replacement of fossil fuel powered landscaping equipment with electrically powered landscaping equipment.



Quantification: Due to limitations within the ClearPath software and data availability, Transportation Measure 9 could not be directly quantified using ClearPath. However, based on the fuel efficiency improvements achieved by Tier 4 engines and the anticipated proportion of off-road mobile emissions originating from construction equipment in the year 2050, emissions reductions from Transportation Measure 9 could be estimated outside of ClearPath. The estimated emissions reduction is presented below. It should be noted that due to the uncertainties related to the extent of loading dock electrification and the deployment of electrically powered landscaping equipment, emissions reductions from loading dock electrification and electrically powered landscaping equipment could not be quantified at this time. Consequently, emissions reductions resulting from Transportation Measure 9 would be greater than the reductions shown below, as the reductions presented below do not account for increased use of electrically powered landscaping equipment and loading dock electrification.

Transportation Measure 9	
Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
Off-Model Calculation	1,134
Note: See the Appendix A for calculation details.	

Transportation Measure 10: Promote Alternative Transportation and VMT Reduction. Many of the foregoing emissions reduction measures rely on the use of alternative means of transportation to reduce VMT. As a means of supporting other emissions reductions measures within this CAP, the City shall promote participation in an award program that provides incentives for local residents that choose alternative means of transportation over single-occupancy vehicles. An example of an existing program to incentivize alternative transportation is the Sac Region 511. The Sac Region 511 supports carpooling, transit use, walking, and bicycling, by providing information to users based on planned trips and traffic information. In addition, the Sac Region 511 promotes challenges, events, and incentives for users that choose alternative transportation instead of single-passenger vehicle trips. The program may also be used in conjunction with Transportation Measure 8 to support local businesses as a means of reducing VMT and Transportation Measure 6, requiring establishment of a TMA.

Existing

Municipal

Future Development

The City of Galt shall seek to implement a program similar to Sac Region 511, or promote the use of the Sac Region 511, to support the use of alternative transportation by residents of the City of Galt. In coordination with SMAQMD, SACOG, local businesses, and local school districts, the City shall seek to incorporate incentive programs for residents that choose to use alternative means of transportation through the Sac Region 511 program or similar program as selected by the City.

Actions: The City's Community Development Department is anticipated to be responsible for implementation of Transportation Measure 10.

- The City shall select an existing program, such as Sac Region 511, or seek to create a proprietary program that will promote alternative transportation. The program chosen should assist the City in monitoring the number of residents participating within the program as well as the VMT avoided through the use of alternative transportation. The City shall select a suitable program by the year 2030.
- Following selection of a suitable program, the City shall coordinate with agencies, businesses, and local school districts to create incentive programs and community events promoting the program. The City shall also seek to promote participation at community events such as the Galt Market, the City's Independence Day Celebration, Lighting of the Night, the Winter Bird Festival, or other events.
- Following establishment of the program, the City shall track resident engagement through annual assessment of the

number of residents participating in the program and the VMT avoided through participation in the program. The City may coordinate with SACOG to determine the level that City of Galt residents participate in the Sac Region 511.

Quantification: Transportation Measure 10 is intended to work in tandem with many of the other Transportation Measures included in this CAP. Because implementation of Transportation Measure 10 would support full implementation of other Transportation Measures, to avoid double-counting emissions reductions, the emissions reductions of Transportation Measure 10 have not been individually quantified. However, tracking the avoided VMT achieved through implementation of the proposed project would allow for future quantification of emissions reductions.

Land Use

Land Use Measure 1:

Existing

Municipal

Future Development

Encourage Reuse. The City shall encourage adaptive reuse of existing buildings, vacant lots, and underutilized areas of the City. Such reuse should be focused on increasing the density of development within the City, while providing community amenities and opportunities for innovative site developments.

Actions: Primary responsibility for implementing this measure would fall to the Community Development Department, particularly during the application and processing phases for private projects including proposed reuses. However, other departments, such as the Public Works Department or the Parks and Recreation Department may provide support for this measure

- Consider reducing impact fees for development that includes reuse of existing structures or infill development.
- Provide for streamlined project review of projects including reuse of existing structures or infill development.
- By the year 2030 the City shall formalize a process for streamlining and incentivizing reuse of existing structures and infill development.

Quantification: The emissions reductions related to encouragement of reusing structures and land within the City have significant overlap with the emissions reductions related to the sustainable growth principals discussed in Land Use Measure 2 below. Therefore, to avoid double-counting such emissions reductions and to provide a conservative approach to emissions reduction estimation, this CAP has combined the emissions reductions of Land Use Measure 1 and Land Use Measure 2, and emissions reductions are presented under Land Use Measure 2, below.

Land Use Measure 2:

Future Development

Municipal

Sustainable Growth. The City shall encourage new development within the City of Galt to use sustainable growth principles, such as encouraging mixed uses and infill development, locating higher-density developments near existing services and amenities, and encourage alternative modes of transportation.

Actions: The Community Development Department would be responsible for implementation of Land Use Measure 2.

- Continue to integrate SACOG's Blueprint Growth Principles into the City of Galt's Development Guidelines.
- Establish standards for "walkable neighborhoods", where new residential development shall be located within one half-mile of a combination of at least two of the following amenities: a park, a school, a grocery store, a commercial development, or employment type land uses. The placement of any new multi-family residential developments within "walkable neighborhoods" should be a focus of future review for such projects.
- Provide streamlined permitting process for developments demonstrating consistency with SACOG's Blueprint Growth Principles.
- The City shall seek to implement the foregoing requirements for all new development by the year 2030.

Quantification: As noted under Land Use Measure 1, significant overlap between Land Use Measures 1 and 2 exists, and, accordingly, the two emissions strategies were modeled together. Sustainable growth is understood to include reuse of existing areas within the City, as well as ensuring that new development outside of the City's existing development footprint would occur in a manner that encourages alternative modes of transportation and reduces future GHG emissions. The GHG emissions reductions for Land Use Measures 1 and 2 were quantified using ClearPath, and anticipated reductions are presented in the table below.

Land Use Measure 1 & 2	
Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
ClearPath	2,240
Note: See the Appendix A for calculation details.	

Land Use Measure 3:

Existing

Municipal

Future Development

Urban Tree Program. The City of Galt shall seek funding for the preparation of an Urban Tree Management Plan, which shall implement Goal CC-4 and Policies CC-4.1 through CC-4.3 of the City of Galt's General Plan. The plan shall include provisions for the maintenance of existing trees, the planting of new trees, tree planting requirements for new developments, methods of improving the existing urban forest, and tree protection guidelines. The Urban Tree Management Plan shall establish a City goal of maintaining and expanding a robust urban forest that provides shade, aesthetic value, mitigation for the urban heat island effect, reduction of stormwater runoff, protection of City assets, and air quality benefits.[44] The City of Galt's Urban Tree Management Plan shall be designed in compliance with California's Urban Forestry Act of 1978, making the Plan eligible to seek grant funding through the State's Urban & Community Forestry Program.

Actions: Implementation of Land Use Measure 3 will be the responsibility of the Parks and Recreation Department, with assistance from the Community Development Department.

- Pursue grant funding from CAL FIRE, USFS, California's Urban & Community Forestry Program, the Sacramento Tree Foundation, SMUD, or other agencies to fund urban forestry planning within the City of Galt.
- Prepare and begin implementation of an Urban Tree Management Plan by the year 2030.
- Update landscape standards to encourage shade over at least 25 percent of area in City parks and parking lots.
- Seek opportunities for partnerships with agencies promoting urban forestry such as ReLeaf California, and the California Urban Forests Council.
- Establish increasing tree planting goals with an initial target of planting 100 new trees in the year 2030 and a final target of planting 300 new trees per year by the year 2050. Each yearly tree planting target between the years 2030 and 2050 shall increase by 10 trees from the previous year's target. Trees planted as part of the City of Galt's Street Tree Program would contribute to attainment of the foregoing tree planting targets.

Quantification: Due to limitations within the ClearPath software, emissions reductions from Land Use Measure 3 could not be directly quantified using ClearPath. However, the California Emissions Estimator Model (CalEEMod) software, which was developed by the California Air Pollution Officers Association in collaboration

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[44] California Urban Forest Council. *Growing Trees As City Assets*. August 2017.

with the California Air Districts, includes values for carbon sequestration per tree. Using the information derived from the CalEEMod user guide,[45] potential GHG emissions reductions were calculated outside of ClearPath and are presented below. GHG reductions were calculated based on the assumption that tree planting would increase linearly from an initial goal of 100 new trees in the year 2030 to 300 new trees in the year 2050. Carbon sequestration is assumed to last for 20 years for each new tree, thus, the emissions reductions presented in the table below reflect all new trees planted under this measure between the years 2030 and 2050.

Land Use Measure 3	
Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
Off-Model Calculation	1,363
Note: See the Appendix A for calculation details.	

Land Use Measure 4:

Municipal

Future Development

Preservation of Agricultural Land. The City of Galt is surrounded by high quality farmland and grazing land, and approximately five percent of City residents work in agriculture. The preservation of high quality farmland has been identified by the American Farmland Trust as well as the California Strategic Growth Council as an effective measure to reduce GHG emissions. In fact, the California Strategic Growth Council estimates that farmland conservation efforts to date will save 39.5 million MT CO_2e over 30 years, and the American Farmland Trust estimates that saving one acre of high quality farmland from conversion to low-density residential uses saves 33 MT CO_2e.[46] The California Strategic Growth Council uses funding from California’s Cap-and-Trade to protect agricultural lands on the outskirts of cities and near residential neighborhoods from urban development.[47] Protecting lands on the outskirts of the City would help to preserve current agricultural operations within or adjacent to the City of Galt while also incentivizing infill and reuse development in support of Land Use Measures 1 and 2.

Considering the location of the City of Galt, and the existence of significant agricultural operations within the City’s Sphere of Influence, the City of Galt is uniquely positioned to both preserve existing agricultural operations and reduce GHG emissions.

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[45] California Air Pollution Control Officers Association. *California Emissions Estimator Model User Guide: Appendix A, Calculation Details for CalEEMod*. October 2017.

[46] American Farmland Trust. *Greener Fields California Communities Combating Climate Change*. September 2018.

[47] California Strategic Growth Council. *Sustainable Agricultural Lands Conservation*. Available at: http://sgc.ca.gov/programs/salc/vision/. Accessed September 2019.

Therefore, the City shall seek to conserve high quality agricultural land.

Actions: Implementation of Land Use Measure 4 will principally be the responsibility of the Community Development Department.

- By the year 2050, the City shall seek to conserve 100 acres of high quality farmland. High quality farmland shall be defined as farmland that meets the USDA's Natural Resources Conservation Service as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. Conservation of such land shall be in the form of agricultural conservation easements, rezones or general plan amendments that remove low-density residential development as a potential use of the farmland to be conserved, or other mechanisms that serve to permanently protect farmland or prevent conversion of farmland to low-density urban uses.
- The City shall consider participating in the California Strategic Growth Council's Sustainable Agricultural Land Conservation Program.
- To encourage conservation of farmland, the City shall consider establishing a process to allow for the transfer of development credits away from farmland to be conserved to other parcels within the City. Under such a process, developers could work collaboratively with farmers to secure conservation easements on farmland planned for residential development, and the City would allow the developer to increase development density on another parcel within the City.

Quantification: According to the American Farmland Trust each acre of high quality farmland conserved from low-density residential development saves 33 MT CO_2e per year. Based on the American Farmland Trust's estimate, establishing a goal to conserve 100 acres of farmland by 2050 would result in GHG emissions savings as demonstrated below. It should be noted that in addition to the direct GHG emissions reductions presented below, Land Use Measure 4 would also support Land Use Measures 1 and 2 by focusing development on infill parcels and areas of the City.

Land Use Measure 4

Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
Off-Model Calculation	3,300

Source: American Farmland Trust. Greener Fields California Communities Combating Climate Change. September 2018.

Building Efficiency

Building Efficiency Measure 1: Building Stock Electrification. Due to the Statewide RPS discussed in Chapter 4 of this CAP, electricity consumed within the State is becoming less emissions intensive. However, unless natural gas is produced through renewable means, the consumption of natural gas represents a constant source of GHG emissions. SB 350 requires that statewide energy efficiency savings in electricity and natural gas be doubled by the year 2030. In order for the City of Galt to meet both the statutorily required increases in energy efficiency and decreases in GHG emissions, the City of Galt must increase the efficiency of natural gas consumed by existing developments, and reduce the amount of natural gas consumed by future development.

Existing

Municipal

Future Development

To support increased energy efficiency, SMUD administers various incentive programs for replacement of inefficient appliances in residences and commercial developments. Participation in SMUD programs would promote the replacement of energy inefficient appliances and the replacement of natural gas fueled appliances with comparable electric powered appliances.

The City shall establish a goal of reducing Citywide consumption of natural gas by 15 percent compared to existing levels by the year 2030 and 50 percent compared to existing levels by the year 2050. In addition, the City shall seek to limit the installation of new natural gas appliances within proposed developments.

Actions: Implementation of Building Efficiency Measure 1 will principally be the responsibility of the Community Development Department.

- In coordination with SMUD, the City shall promote SMUD's incentive programs for replacing natural gas appliances with more efficient electrically powered appliances.
- The City shall establish a goal to reduce natural gas use by 15 percent from 2016 levels by the year 2030.
- The City shall establish a goal to reduce natural gas use by 50 percent from 2016 levels by the year 2050.
- The City shall consider offering a streamlined development process for developments that are demonstrated to be all electric, or have reduced anticipated natural gas usage to the maximum extent feasible.

Quantification: The emissions reductions related to building stock electrification have significant overlap with the zero net energy (ZNE) goals discussed in Building Efficiency Measure 2 below. Therefore, to avoid double-counting such emissions reductions, and to provide a conservative approach to emissions reduction estimation, this CAP has combined the emissions reductions of Building Efficiency Measure 1 and Building Efficiency Measure 2, and emissions reductions are presented under Building Efficiency Measure 2, below.

Building Efficiency Measure 2:

Existing

Municipal

Future Development

Zero Net Energy: The California Energy Efficiency Strategic Plan established the goals that new residential development within the state shall achieve ZNE by 2020 and new commercial shall achieve ZNE by 2030. On a building level ZNE is defined by the California Department of General Services as an energy-efficient building where the actual consumed energy is less than or equal to the on-site renewable energy generated, on an energy source basis. That is, a ZNE building must generate as much energy as is consumed. Similar definitions are presented for campuses, energy portfolios, and communities.[48]

In support of future State actions, and in compliance with the California Building Code, the City of Galt shall seek to phase in the ZNE requirements for residential development by 2020 and commercial development by the year 2030. Implementation of ZNE building policies is anticipated to result in large emissions reductions from both the consumption of electricity and natural gas.

Actions: Implementation of Building Efficiency Measure 2 will principally be the responsibility of the Community Development Department.

- Require that all new residential buildings within the City of Galt be ZNE by the year 2020, or sooner as required by intervening California Building Standards Code.
- Require that all new non-residential development within the City of Galt be ZNE by the year 2030, or sooner as required by intervening California Building Standards Code.
- Seek funding to upgrade existing municipal facilities to meet ZNE standards by the year 2040. ZNE at existing municipal facilities may be achieved through energy efficiency upgrades as well as installation of renewable energy systems.

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[48] California Public Utilities Commission. *Zero Net Energy*. Available at: http://www.cpuc.ca.gov/zne/. Accessed February 2019.

- The City of Galt shall seek to aid existing development in achieving the ZNE standard. Through a combination of energy efficiency improvements and increased renewable energy generation existing development may be upgraded to be more energy efficient, and strive to meet the ZNE standard. The City of Galt shall collaborate with SMUD to promote SMUD's energy efficiency rebate and incentive programs as well as SMUD's Greenergy program. Additionally, the City shall collaborate with SMUD to investigate the possibility of installing a renewable energy generation system that can be used to off-set emissions from existing developments within the City of Galt.

Quantification: As noted under Building Efficiency Measure 1, significant overlap exists between Building Efficiency Measure 1 and Building Efficiency Measure 2; accordingly, the two emissions reduction measures were quantified together. Achievement of ZNE by energy source category is anticipated to require significant reductions in natural gas usage in future developments. Due to limitations within the ClearPath software, emissions reductions from Building Efficiency Measure 1 and Building Efficiency Measure 2 could not be directly quantified using ClearPath. However, based on the anticipated reduction in natural gas use within the City of Galt, emissions reductions resulting from implementation of Building Efficiency Measure 1 and Building Efficiency Measure 2 were calculated outside of ClearPath and are presented below.

Building Efficiency Measure 1 & 2	
Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
Off-Model Calculation	30,767
Note: See the Appendix A for calculation details.	

Building Efficiency Measure 3: Reduce Releases of High GWP Gasses. High GWP gases include a wide range of chemicals used in a variety of industrial and commercial processes. Gases may be identified as having a high GWP due to the long atmospheric lifetime of the gas, the gas's chemical properties that allow for a large amount of heat capture, or the tendency of a gas to result in chemical reactions that produce other GHGs. The CARB has identified numerous high GWP gases that must be controlled in order for the State to meet statewide GHG reduction targets. Although much of the needed actions to control high GWP gases will occur on the state and federal level, some commercial activities within the City of Galt use large quantities of high GWP gases. One of the largest uses

Existing

Municipal

Future Development

of high GWP gases within the City of Galt is for refrigeration units, such as those found in supermarkets or in industrial settings. Although the municipal government of the City of Galt does not have direct control over the refrigeration units installed within the City or the maintenance of such equipment, the municipal government of the City of Galt is uniquely positioned to support efforts to reduce emissions of high GWP gases by connecting existing businesses with resources related to the reduction of high GWP gas emissions.

In particular, SMUD offers incentives for businesses and individuals to upgrade appliances, heating or cooling systems, and refrigeration systems. The City of Galt shall support SMUD's rebate and incentive programs related to the upgrade of such equipment and connect existing and future business owners with resources related to the reduction of high GWP gas emissions.

Actions: Implementation of Building Efficiency Measure 3 would be the responsibility of the Economic Development Department as well as the Community Development Department.

- In consultation with SMUD, expand information related to SMUD's energy efficiency and refrigeration incentive and rebate programs available on the City of Galt's website.
- Establish a Citywide goal of upgrading 50 percent of existing refrigeration systems by 2030 to energy efficient systems with low refrigerant emissions rates.
- Establish a Citywide goal of upgrading 100 percent of existing refrigeration systems by 2050 to energy efficient systems with low refrigerant emissions rates.
- During approval processes for future businesses proposing to include large refrigeration systems, coordinate with SMUD to ensure that proposed refrigeration systems are designed to be as energy efficient as possible, and that such systems include low refrigerant emissions rates.
- Should statewide programs for the reduction of high GWP gases through refrigeration improvements be initiated, the City of Galt shall seek to participate in such programs.

Quantification: Due to limitations within the ClearPath software, emissions reductions from Building Efficiency Measure 3 could not be directly quantified using ClearPath. However, based on the anticipated reduction in fugitive emissions of high GWP gases, emissions reductions resulting from implementation of Building Efficiency Measure 3 were calculated outside of ClearPath and are presented below.

Building Efficiency Measure 3

Calculation Method	Year 2050 Emissions Reductions (MT CO_2e)
Off-Model Calculation	3,164

Note: See the Appendix A for calculation details.

Solid Waste

Waste Measure 1:

Municipal

Expand Municipal Recycling Program. Increase the use of recycling receptacles at municipal facilities such as public parks, community centers, school facilities, the Galt Market, and in the downtown area of the City of Galt.

Actions: Responsibility for implementation of Waste Measure 1 would be shared by the Departments of Public Works, Parks and Recreation, and Community Development.

- By the year 2025, identify locations in the City of Galt where municipal trash and recycling collection receptacles are currently located.
- By the year 2025, establish a plan for expanding municipal recycling services through collocating recycling receptacles with trash receptacles.
- Require all new municipal facilities to include co-location of recycling receptacles with any new trash receptacles.
- Encourage Galt Joint Union High School District and the Galt Union Elementary School District to participate in expansion of recycling programs.

Quantification: The emissions reductions related to expansion of recycling within the City of Galt have significant overlap with the goals of Waste Measure 2 below. Therefore, to avoid double-counting such emissions reductions, and to provide a conservative approach to emissions reduction estimation, this CAP has combined the emissions reductions of Waste Measure 1 and Waste Measure 2, and emissions reductions are presented under Waste Measure 2, below.

Waste Measure 2:

Existing

Municipal

Future Development

Expand Yard Waste and Other Organics Composting. Currently, organics collection for yard waste is provided by the City of Galt's solid waste service provider, Cal-Waste. In concert with statewide organics diversion goals, the City of Galt shall work with Cal-Waste to expand the collection of organic material within the City of Galt to include food waste as well as yard waste. Expanding organics composting would reduce the amount of waste produced within the City of Galt, and reduce the amount of GHG emissions from waste disposal. Expansion of organics collection may also allow for diversion of such waste for other beneficial uses.

It should be noted that the City of Galt's current provider of solid waste collection services, Cal-Waste, has recently prepared a Climate Action and Management Plan (CAMP). Cal-Waste's CAMP inventories existing emissions and outlines strategies that Cal-Waste has taken to reduce GHG emissions related to the Cal-Waste's business operations. The CAMP is included as Appendix B to this CAP. As shown in the CAMP, Cal-Waste's efforts to promote recycling and composting, as well as the reduction in truck trips resulting from construction of Cal-Waste's material recovery facility, has allowed Cal-Waste to off-set operational emissions 14 times over. That is, Cal-Waste's operational emissions of 3,369 MT CO_2e were off-set by avoided emissions totaling 47,365 MT CO_2e.

Actions: Responsibility for implementation of Waste Measure 2 would be shared by the Departments of Public Works, Parks and Recreation, and Community Development.

- Prior to renewal of the City's contract with the City's waste disposal provider, Cal-Waste, the City of Galt shall discuss potential expansion of composting services with the City of Galt's.
- The City of Galt shall promote Cal-Waste's existing yard waste program, and any future expansion of organics collections.
- The City of Galt shall consider innovative new technologies for facilitating composting, such as the use of biodigesters or composting facilities.
- By the year 2030, or as mandated by existing Statewide legislation, the City of Galt shall establish waste reduction goals in-line with Statewide waste reduction requirements (AB 87, AB 1572, AB 939, AB 341).

Quantification: As noted under Waste Measure 1, significant overlap exists between Waste Measure 1 and Waste Measure 2; accordingly, the two emissions reduction measures were modeled together. Both Waste Measure 1 and Waste Measure 2 seek to implement existing California legislative goals related to solid waste reductions, which are anticipated to contribute significantly to GHG emissions reductions on a statewide level. Furthermore, both Waste Measure 1 and Waste Measure 2 would contribute to Cal-Waste's existing efforts to reduce and off-set GHG emissions related to solid waste collection in the region. As reported in Cal-Waste's Climate Action Management Plan, GHG emissions related to existing waste services provided by Cal-Waste are sufficiently off-set to ensure that

Cal-Waste operates on a net negative GHG emissions basis.[49] Implementation of Waste Measure 1 and Waste Measure 2 would help to ensure Cal-Waste's continued off-set of GHG emissions related to solid waste service within the City of Galt by requiring continued diversion of solid waste through recycling and composting. Thus, with implementation of Waste Measure 1 and Waste Measure 2, compliance with all existing statewide waste reduction requirements, and considering Cal-Waste's current achievement of net negative GHG emissions, solid waste is not anticipated to contribute substantial GHG emissions in the year 2050.

The growth in emissions from solid waste previously presented in Figure 8 of this CAP does not take into account Cal-Waste's CAMP, existing state legislation related to mandated solid waste reductions, or implementation of Waste Measure 1 and 2. Given the above, solid waste is not anticipated to result in substantial GHG emissions in the year 2050; consequently, the 9,052 MT CO_2e of emissions anticipated to occur in the year 2050 would be avoided and the City would achieve emissions reductions in the year 2050 as presented below.

Waste Measure 1 & 2

Calculation Method	Year 2050 Emissions Reductions (MT CO_2e)
Off-Model Calculation	9,052

Note: See the Appendix A for calculation details.

Waste Measure 3:

Existing

Municipal

Future Development

Biodigester. The decomposition of organic waste, including waste from the treatment of human and animal waste, results in the emission of GHGs. In order to control emissions from organic wastes, various entities, including the solid waste providers for the Sacramento area and the University of California, Davis, have begun operating biodigesters to control and repurpose GHGs emitted by the decomposition of organic waste. Biodigesters operate by controlling the decomposition of organic waste in an anaerobic environment, where bacteria breaks down the organic waste and releases biogas in the process. Once processed for purity, the biogas captured during the biodigester process is considered renewable natural gas and may be used wherever natural gas would be used. Common applications of the renewable natural gas include vehicle fuels and electricity production. For example, the Sacramento Biodigester, currently owned by Incline Energy accepted 100 tons

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[49] Cal-Waste Recovery Systems. *Climate Action Management Plan: Climate Registry & Avoided Emissions Reporting*. February 22, 2017.

of organic waste per day and generated more than 700,000 diesel gallon equivalents of renewable natural gas annually during full operations. The renewable natural gas was used to power compressed natural gas vehicles operated by Atlas Disposal,[50] which off-sets GHG emissions that would otherwise occur from the decomposition of organic waste, as well as the production, distribution and combustion of compressed natural gas for Atlas Disposal vehicle operations. It should be noted that in 2018 Incline Energy ceased operation of the Sacramento Biodigester to address technical operational issues. A similar biodigester run by the University of California, Davis was estimated to off-set 13,500 MT CO_2e/yr through the digestion of 50 tons of food waste per day.[51] The foregoing examples of biodigesters were implemented through public-private partnerships that sought to remove organic food waste from solid waste streams.

In fact, the deployment of biodigesters within the vicinity of the City of Galt has already begun. In particular a digester has been in operation at the Van Warmerdam Dairy near Arno Road north of the City, and an additional digester is being brought online at the New Hope Dairy off New Hope Road, just west of the City.[52] Both digesters create electricity from dairy waste, which reduces the emission of methane to the atmosphere, and provides a renewable source of electricity for the grid.

Within the context of the City of Galt and the surrounding region, significant opportunities exist for pursuit of a similar biodigester system, with the possibility that such systems could be used to accept other forms of organic waste such as remnant sludge from the wastewater treatment process and manure from livestock operations in the region. As shown in Chapter 4 of this CAP, the City of Galt's wastewater treatment process is responsible for the majority of anticipated future municipal GHG emissions. Therefore, technologies with the potential to reduce or off-set GHG emissions from the City of Galt's wastewater treatment process would significantly aid the City of Galt's goal to meet Statewide emissions reductions targets. It should be noted that in addition to providing GHG emissions reductions, the construction and operation of biodigesters represents an on-going source of sustainable employment and a source of revenue for the operator.

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[50] Tomich, Matt. Energy Vision. *Sacramento: The First U.S. City to Refuel on Food Waste*.

[51] University of California, Davis, College of Engineering. *UC Davis biodigester turns campus waste into campus energy*. Available at: https://engineering.ucdavis.edu/blog/uc-davis-biodigester-turns-campus-waste-campus-energy/. Accessed February 2019.

[52] Maas Energy Works. *Digester Projects*. Accessible at: https://www.maasenergy.com/digesters. Accessed October 2019.

Barring currently unforeseen advances in biodigester technology, construction and operation of such facilities requires significant up-front and long-term investments. Although such costs may be defrayed by grant funding and the sale of renewable natural gas, construction and operation of a biodigester solely for municipal purposes would not be likely to be economically feasible for the City of Galt. However, construction and operation of a biodigester in concert with the local solid waste provider, Cal-Waste, local livestock interests, or other third-parties represents a significant opportunity to achieve substantial reductions in GHG emissions from varied sources through public-private or public-public partnerships. Therefore, the City shall investigate the feasibility of the use of biodigesters for organic wastes produced in the City of Galt and surrounding areas, and seek interested parties to form public-private or public-public partnerships for joint operation of the facility.

Actions: Responsibility for implementation of Waste Measure 3 would be shared by the Departments of Public Works, Parks and Recreation, and Community Development.

- By no later than 2030, the City of Galt shall investigate the feasibility of the use of biodigesters to accept organic wastes produced within the City, including wastes collected by Cal-Waste as well as sludge from the wastewater treatment process.
- To enhance the economic feasibility for a potential future biodigester, the City of Galt shall consider potential organic waste sources from areas outside of the City, including other areas serviced by Cal-Waste, and agricultural or livestock operations within the region.
- The City of Galt shall seek public-private and/or pubic-public partnerships to increase the economic feasibility of construction and operation of a biodigester.
- The City of Galt shall seek grant funding to support the construction and operation of a future biodigester.

Quantification: Due to limitations within the ClearPath software, emissions reductions from Waste Measure 3 could not be directly quantified using ClearPath. However, based on emissions reduction and off-set information from biodigesters currently operating in the region, emissions reductions resulting from implementation of Waste Measure 3 were calculated outside of ClearPath, based on GHG emissions reductions achieved by existing biodigesters in the region and are presented below.

Waste Measure 3	
Calculation Method	**Year 2050 Emissions Reductions (MT CO_2e)**
Off-Model Calculation	11,000
Note: See the Appendix A for calculation details.	

Reduction Measure Summary

Full implementation of the foregoing reduction measures would result in GHG emissions reductions as shown in Table 4 below. For information regarding the timing of each of the following reduction measures, please refer to the actions presented in the previous section for each reduction measure.

Table 4
Reduction Measure Summary

Reduction Measure	Year 2050 Emissions Reductions (MT CO_2e)
Transportation Measure 1 – Bicycle and Pedestrian Infrastructure	2,643
Transportation Measure 2 – Increase Use of Public Transit	317
Transportation Measure 3 – Safe Routes to School	395
Transportation Measure 4 – Optimize City Fleet	421
Transportation Measure 5 – Support Electric Vehicle Charging Infrastructure	1,214
Transportation Measure 6 – Establish a Transportation Management Association	5,323
Transportation Measure 7 – Promote Anti-Idling/Congestion Management Strategies	553
Transportation Measure 8 – Promote Local Goods and Businesses	Not Individually Quantified
Transportation Measure 9 – Mobile Source Emissions Reductions	1,134
Transportation Measure 10 – Promote Alternative Transportation and VMT Reduction	Not Individually Quantified
Land Use Measure 1 & 2 – Encourage Reuse & Sustainable Growth	2,240
Land Use Measure 3 – Urban Tree Program	1,363
Land Use Measure 4 – Preservation of Agricultural Land	3,300
Building Efficiency Measure 1 & 2 – Building Stock Electrification & Zero Net Energy	30,767
Building Efficiency Measure 3 – Reduce Releases of High GWP Gasses	3,164
Waste Measure 1 & 2 – Expand Municipal recycling Program & Expand Yard Waste and Other Organics Composting	9,052
Waste Measure 3 - Biodigester	11,000
Total	*72,885*

It should be noted that while the emissions reductions presented in Table 4 are for the year 2050, the majority of mitigation measures presented above would result in GHG emissions reductions beginning in the year of adoption and extending through the year 2050. For instance, the recent bicycle lane improvements implemented in Central Galt as part of the City of Galt's safe routes to school program will encourage bicycling within the City and result in GHG emissions reductions for the lifespan of such improvements. Consequently, the emissions reductions measures would serve to reduce anticipated emissions in the year 2030 further below the per capita emissions target for 2030.

As shown in Table 4, the emissions reduction measures included in this CAP would reduce anticipated emissions in the year 2050 by 72,885 MT CO_2e, which equates to an approximately 32 percent reduction from the forecasted emissions level for 2050. Considering the anticipated level of emissions reductions that would be achieved by implementation of this CAP, emissions in the year 2050 would be anticipated to equal approximately 152,662 MT CO_2e/yr, which would be 44,215 MT CO_2e/yr less than the inventoried emissions level for the year 2016. With an estimated population of 56,090 residents in the year 2050, the estimated 152,662 MT CO_2e/yr emissions rate in 2050 would result in a per capita emissions rate of 2.72 MT CO_2e/yr. Despite the overall reduction in GHG emissions from present levels, as currently calculated such reductions would not be sufficient to achieve the 2017 Scoping Plan's goal of reaching an emission rate of two MT CO_2e/capita/yr.

As shown throughout this CAP, emissions within the City of Galt during the year 2030 would result in per capita emissions below the 2017 Scoping Plan's per capita emissions goal for the year 2030. Although the emissions reduction measures included in this CAP would not be sufficient to meet the 2017 Scoping Plan's goal for the year 2050, the emissions reductions achieved by implementation of the foregoing emissions reduction measures would be significant and would place the City of Galt on a path to achieving the 2017 Scoping Plan's per capita emissions goal for 2050. Further progress towards obtaining the 2017 Scoping Plan's per capita emissions goal for 2050 would be made during the CAP update process. Because the City of Galt has been demonstrated to meet the State's GHG emissions targets for the year 2030, this CAP will provide sufficient direction to guide the City's emissions reductions through 2030. However, in order to ensure that the City's emissions trajectory continues to decline in accordance with the 2017 Scoping Plan's per capita emissions goal for the year 2050, after the year 2030, the City shall update the CAP more regularly, in intervals not to exceed five years. Updating the CAP in the future will ensure that the reduction calculations and emissions forecasting remain up-to-date. Furthermore, future updates to the CAP will allow for the incorporation of new emissions reduction technologies and methodologies that are not currently known. Although new technologies are speculative at this time, the proliferation of zero emissions passenger and freight vehicles as well as autonomous vehicles is one example of an impending technological change with effects that are difficult to predict at this early stage of development.

In addition to updating the CAP on the aforementioned update schedule, City staff shall prepare progress reports to monitor the implementation of CAP strategies. The monitoring reports shall be presented to select City commissions or the City Council on an annual basis. Reports shall include progress updates on all individual reduction measures included in this or future CAPs. To supplement the annual monitoring reports, City staff shall include a CAP Consistency section in all future staff reports prepared for City commissions and the City Council. The CAP Consistency section of staff reports shall seek to identify specific reduction strategies related to the topic of the staff report, and describe in general terms how the topic of the staff report supports or conflicts with the CAP.

Nevertheless, by achieving the 2017 Scoping Plan’s per capita emissions goal for the year 2030, and ensuring that communitywide emissions would continue to decline through the year 2050, this CAP ensures that the City of Galt will achieve the legislative requirements of SB 32. Although emissions reductions sufficient to meet the legislative emissions reduction requirements of AB 32 cannot be demonstrated at this time, the implementation of the emissions reductions strategies included in this CAP will position result in on-going GHG emissions reductions and allow the City to incorporate further emissions reductions strategies in the future, sufficient to reach the emissions reduction requirement of AB 32 and the per capita emissions targets for the year 2050.

6

IMPLEMENTATION

The Implementation Chapter describes how the City will generally proceed to implement the emissions reduction measures presented in Chapter 5. In addition, this chapter identifies potential funding sources and resources related to project funding that the City may pursue to achieve the emissions goals presented in Chapter 4.

6.1 IMPLEMENTATION

The emissions reduction measures presented in Chapter 5 include specific actions that delineate the timeline for measure implementation, and, the party or parties responsible for strategy implementation. As discussed in Chapters 4 and 5 the emissions levels within the City of Galt in 2030 would comply with the per capita emissions targets established by the 2017 Scoping Plan, and, consequently, the City of Galt would comply with the statewide emissions reduction targets established by SB 32. Although the emissions reduction measures included in this CAP would result in a 32 percent reduction in emissions from the levels forecasted for the year 2050, such emissions reductions would not be sufficient to meet the per capita emissions thresholds included in the 2017 Scoping Plan. Nevertheless, the emissions reductions resulting from implementation of the emissions reduction measures in this CAP would be substantial, and would place the City of Galt's total emissions level on a downward trajectory.

Emission forecasts used throughout this CAP are based on buildout of the City of Galt's General Plan and SACOG estimates for regional growth. The foregoing sources of development data represent the most up-to-date sources of information for growth projections in the City of Galt; however, uncertainty exists related to the amount of growth that will be realized in future years, with the level of uncertainty increasing the farther into the future projections are focused. For instance, the City of Galt's existing General Plan has a buildout target year of 2030. Based on recent growth trends within the City of Galt, as well as planning actions such as annexations and the adoption of specific plans, the level of development to the year 2030 can be reasonably estimated. As discussed above and in Chapter 4 of this CAP, based on projections for development within the City of Galt to the year 2030, the City of Galt is anticipated to comply with State emissions reductions goals by the year 2030. However, looking past the year 2030, growth trends within the City of Galt become increasingly less certain as the City of Galt will have adopted updates to the existing General Plan, which may restrict or increase growth within the City Limits. Therefore, this CAP provides a useful outlook into future emissions within the City of Galt, but there is a significant need for future updates to this CAP to ensure that the growth projections and emissions forecasts remain reliable and up-to-date. Nevertheless, the fact that the City of Galt will achieve the year 2030 per capita emissions reductions goals established by the 2017 Scoping Plan provides a strong indication that the City of Galt will reduce GHG emissions in compliance with the State's requirements.

Considering the uncertainty surrounding the rate of future growth within the City of Galt and the potential for future regulations to place further requirements on development within the City of

Galt, future updates to this CAP will be necessary in order to ensure that the emissions goals and emissions reduction measures keep pace with growth within the City of Galt and the evolving regulatory environment. Therefore, the City of Galt shall seek to update the CAP at least once within each five-year period beginning in the year 2030. The City may also choose to amend this CAP more frequently than every five years, as new information becomes available, or where changes are necessary to respond to major legislative or regulatory requirements. Updating the City of Galt's CAP on the foregoing schedule would ensure that the City of Galt is able to adapt the CAP to any changes in the regulatory environment, and incorporate updated methodologies or approaches to emissions control technologies. Furthermore, future updates to the CAP shall include updated emissions inventories. Updated emissions inventories will act to continually monitor Citywide emissions, and inform decision makers with regard to the efficacy of reduction measures contained within this CAP or the need for new reduction measures. Specific areas of focus for future GHG inventories could include greater specificity regarding the amount of high GWP gases emitted in the City, finer scale attribution of energy consumption between different economic sectors (e.g. industrial, residential, commercial), refined emissions estimates related to water and wastewater utilities, and more precise attribution of vehicle use and miles travelled between different economic sectors.

Prior to updating any portions of this CAP, the City of Galt shall pursue implementation of the emissions reduction measures and development thresholds laid out within this CAP. Section 6.2 provides further discussion related to the implementation of the CAP emissions reduction measures.

Sustainability Webpage

To aid in the implementation of the emissions reduction measures above, the City of Galt shall create a specific page on the City's website that describes the City's sustainability efforts, identifies partnerships, and provides educational resources and opportunities for community members. The site will also serve as a clearinghouse for information on the City of Galt's climate action program.

6.2 IMPLEMENTATION OF REDUCTION MEASURES

Chapter 5, Emissions Reduction Measures, of this CAP presents various information related to specific measures designed to aid the City of Galt in reducing present and future GHG emissions. Each emissions reduction measure presented in Chapter 5 includes specific actions to be taken as well as an identification of the party or parties responsible for measure implementation.

As noted in Chapter 5, some of the emissions reduction measures would be implemented through municipal actions, while other strategies would be implemented by private developers within the City of Galt, under the guidance and direction of City staff. For instance, Transportation Measure 5 requires that any new government facilities include EV charging stations, while also requiring that the City of Galt's Municipal Code be updated to include requirements for new developments within the City to include installation of EV charging stations and infrastructure. To assist developers in determining which reduction measures must be implemented within private developments in the City of Galt, a draft sustainability checklist has been prepared to be used during the review of future project proposals. The draft sustainability checklist includes a succinct list of measures required to be implemented by future development, which ensures that future development complies with the emissions reduction measures included in this CAP. The draft sustainability checklist is included as Appendix B to this CAP.

The finalized sustainability checklist would be implemented during the City's development review process for all new development proposals within the City of Galt. Development requirements within the draft sustainability checklist adapt the emissions reduction measures presented in Chapter 5, for all types of new development within the City of Galt, including reuse of existing developments, infill development, and new development in currently undeveloped portions of the City of Galt. Completion of the finalized sustainability checklist will be a requirement of the City of Galt's development approval process for all proposed developments within the City of Galt in the future.

In addition to the use of the finalized sustainability checklist during the development review process, City Staff Reports will also include a CAP Consistency section, which will relate a project's consistency with the City's CAP to decision makers and the public. The inclusion of a CAP Consistency section in all Staff Reports would ensure that all City actions, including those not required to complete a sustainability checklist would be assessed for compliance with the City's CAP.

6.3 FUNDING

Preparation of this CAP was funded by the California Energy Commission's Local Government Challenge Grant Program, which seeks to implement SB 350 by providing local governments with funding support in efforts to increase energy efficiency and meet the State's climate goals.

Using this CAP as a starting block, the City will be able to pursue funding through various federal, state, and regional programs that fund GHG emissions reducing activities and measures. For instance, the State's Cap-and-Trade program for GHG emissions creates annual auction proceeds, which are then directed into various programs aimed at reducing GHG emissions on a local and statewide basis. Such programs include the California Strategic Growth Council's Sustainable Agricultural Lands Conservation Program discussed in Land Use Measure 4. The Sustainable Agricultural Lands Conservation Program provides grant funding for planning projects and conservation easements that protect economically viable at-risk agricultural lands. In addition, programs such as the CARB's Low Carbon Transportation Investments and Air Quality Improvement Plan exist to support the deployment of advanced technology and clean transportation in the light- and heavy-duty vehicle sectors. Moreover, the City may choose to pursue individual programs such as the Community Solar Pilot Program, funding for urban forestry through the California Department of Forestry and Fire Protection, or other programs.

The California Environmental Protection Agency (CalEPA) maintains a database of available funding opportunities through the CoolCalifornia.org. Through the CoolCalifornia.org program the CalEPA promulgates best practices for emissions reductions, examples of such emissions reductions practices, and funding sources. Through the continued distribution of Cap-and-Trade program funds and legislative action on the State level, diverse funding sources are anticipated to remain available into the foreseeable future.

The CAP may also provide a basis for the City to pursue funding for climate change resiliency programs. Based on the anticipated regional affects of climate change, such programs may include increasing the availability of cooling centers during summer months, supporting urban forestry, increasing flood protection, and/or protecting regional groundwater supplies.

Appendix A
Emissions Calculations

City of Galt
Existing Emissions
Inventory

Buildings and Facilities

Id	**83411**	**83410**	**83412**
Output Record Ids With Co2e	942043	942032	942051
Inventory Record	Municipal Energy Loss Emissions	Municipal Energy Consumption	Other Fuel Use
Calculator	Emissions from Electric Power Transmission and Distribution Losses	Emissions from Grid Electricity	Emissions from Stationary Fuel Combustion
Gpc Scope	Scope 2	Scope 2	Scope 1
GPC Ref Number			
Factor Profiles	SMUD 2016	SMUD 2016	SMUD 2017
Global Warming Potential	IPCC 4th Assessment	IPCC 4th Assessment	IPCC 4th Assessment
Category	Buildings & Facilities	Buildings & Facilities	Buildings & Facilities
Activity Source			
Notes	Based on default ClearPath information & SMUD provided data	Based on SMUD provided data for year 2016	Assumed Unchanged from 2009 GHG Emissions Inventory
Created By	jbyrne@raneymanagement.com	jbyrne@raneymanagement.com	jbyrne@raneymanagement.com
Created At	2018 Jun 25 07:33pm	2018 Jun 25 07:32pm	2018 Jun 25 07:41pm
CO2 (MT)	120.3643689	1467.033387	25
CH4 (MT)	0.007325741	0.089288109	0
N2O (MT)	0.002686105	0.032738973	0
CO2e (MT)	121.3479717	1479.021804	25
Tags			
T&D Energy Equivalent (MMBtu)	1837.369219		
CO2 Emissions Factor	0.065509081	0.065509081	0
CH4 Emissions Factor	3.98708E-06	3.98708E-06	0
N2O Emissions Factor	1.46193E-06	1.46193E-06	0
Electricity Use	12726931		
Grid Loss Factor	4.23		
CO2 lbs/MWh	492.91	492.91	472.89
CH4 lbs/GWh	30	30	30
N2O lbs/GWh	11	11	11
Energy Equivalent (MMBtu)			0
Energy per Square Foot (MMBtu)		0	
CO2e per Square Foot (MT)		0	
Energy per Occupant (MMBtu)		0	
CO2e per Occupant (MT)		0	
Energy per Operating Hour (MMBtu)		0	
Is this a Direct Entry Record?			Yes
Fuel Type			
Fuel Use			

Daily Occupancy			
Daily Operating Hours			
Building Square Footage			
Is this a Scope 3 Record?			
Previously Calculated CO2			25
Previously Calculated CH4			
Previously Calculated N2O			
Electricity Energy Equivalent (MMBtu)		22394.35154	
Is This a Direct Entry Record?		No	
Electricity Used		6561545	

Vehicle Fleet

Id	**81005**	**81004**
Output Record Ids With Co2e	913704	913694
Inventory Record	City Diesel Fueled Vehicles	City Gasoline Fueled Vehicles
Calculator	Fleet Vehicle Emissions	Fleet Vehicle Emissions
Gpc Scope	Scope 1	Scope 1
GPC Ref Number		
Factor Profiles	SMUD 2016 and Transportation Factor Set 1	SMUD 2016 and Transportation Factor Set 1
Global Warming Potential	IPCC 4th Assessment	IPCC 4th Assessment
Category	Vehicle Fleet	Vehicle Fleet
Activity Source		
Notes	Based on data provided by City on existing fleet, usage, fuel consumption.	Based on data provided by City on existing fleet, usage, fuel consumption.
Created By	jbyrne@raneymanagement.com	jbyrne@raneymanagement.com
Created At	2018 May 17 07:56pm	2018 May 17 07:44pm
CO2 (MT)	18.57199	392.8550418
CH4 (MT)	0	0.007812635
N2O (MT)	0	0.002169523
CO2e (MT)	18.57199	393.6968754
Tags		
Fleet Vehicle VMT		470612.3
Fleet Energy Equivalent (MMBtu)	251.09476	5590.801535
Biogenic CO2 (MT)	0	0
Biofuel CH4 (MT)	0	0
Biofuel N2O (MT)	0	0
Fossil Energy Equivalent (MMBtu)	251.09476	5590.801535
Biofuel Energy Equivalent (MMBtu)	0	0
CO2 Emissions Factor	0.073964068	0.070268107
Biogenic CO2 Emissions Factor	0	0
CH4 Emissions Factor	5.1E-09	1.6601E-08
CH4 Emissions Factor Units	0	0
Biofuel CH4 Emissions Factor	0	0
Biofuel CH4 Emissions Factor Units	0	0
N2O Emissions Factor	4.8E-09	4.61E-09

Biofuel N2O Emissions Factor	0	0
Is This a Direct Entry Record?	No	No
Does this record represent outsourced services?	Government Owned	Government Owned
Fuel Type	Diesel	Gasoline
Annual Fuel Use	1819	44744.31
Percent Biofuel in Blend		0
Annual Miles Traveled (VMT)		470612.3
VMT Percent Passenger Vehicle (%)	0	62
VMT Percent Light Truck (%)	0	34
Percent Heavy Truck (%)	100	1
Previously Calculated CO2		
Previously Calculated CH4		
Previously Calculated N2O		
Previously Calculated Biogenic CO2		
Previously Calculated Biofuel CH4		
Previously Calculated Biofuel N2O		
CO2 lbs/MWh	492.91	492.91
CH4 lbs/GWh	30	30
N2O lbs/GWh	11	11
Gas Passenger Vehicle Fuel Economy (MPG)	23.4	23.4
Gas Passenger Vehicle g CH4/mi	0.0173	0.0173
Gas PassengerVehicle g N2O/mi	0.0036	0.0036
Gas Light Truck Fuel Economy (MPG)	17.2	17.2
Gas Light Truck g CH4/mi	0.0163	0.0163
Gas Light Truck g N2O/mi	0.0066	0.0066
Gas Heavy Truck Fuel Economy (MPG)	5.3	5.3
Gas Heavy Truck g CH4/mi	0.0333	0.0333
Gas Heavy Truck g N2O/mi	0.0134	0.0134
Gas Transit Bus Fuel Economy (MPG)	3.3	3.3
Gas Transit Bus g CH4/mi	0.0333	0.0333
Gas Transit Bus g N2O/mi	0.0134	0.0134

Gas Para Transit Bus Fuel Economy (MPG)	7.7	7.7
Gas Para Transit Bus g CH4/mi	0.0333	0.0333
Gas Para Transit Bus g N2O/mi	0.0134	0.0134
Gas Motorcycle Fuel Economy (MPG)	43.54	43.54
Gas Motorcycle g CH4/mi	0.0672	0.0672
Gas Motorcycle g N2O/mi	0.0069	0.0069
Electric Vehicle Fuel Economy (MPGe)		
Diesel Passenger Vehicle Fuel Economy (MPG)	25.9	25.9
Diesel Passenger Vehicle g CH4/mi	0.0005	0.0005
Diesel PassengerVehicle g N2O/mi	0.0012	0.0012
Diesel Light Truck Fuel Economy (MPG)	19	19
Diesel Light Truck g CH4/mi	0.001	0.001
Diesel Light Truck g N2O/mi	0.0015	0.0015
Diesel Heavy Truck Fuel Economy (MPG)	5.8	5.8
Diesel Heavy Truck g CH4/mi	0.0051	0.0051
Diesel Heavy Truck g N2O/mi	0.0048	0.0048
Diesel Transit Bus Fuel Economy (MPG)	3.6	3.6
Diesel Transit Bus g CH4/mi	0.0051	0.0051
Diesel Transit Bus g N2O/mi	0.0048	0.0048
Diesel Para Transit Bus Fuel Economy (MPG)	8.5	8.5
Diesel Para Transit Bus g CH4/mi	0.0051	0.0051
Diesel Para Transit Bus g N2O/mi	0.0048	0.0048
Diesel Motorcycle Fuel Economy (MPG)		
Diesel Motorcycle g CH4/mi		
Diesel Motorcycle g N2O/mi		

Transit Fleet

Id	**78632**	**78633**
Output Record Ids With Co2e	889369	889383
Inventory Record	Gasoline fueled Transit servicing Galt	Diesel fueled Transit Servicing Galt
Calculator	Transit Fleet Emissions	Transit Fleet Emissions
Gpc Scope	Scope 1	Scope 1
GPC Ref Number		
Factor Profiles	SMUD 2016 and Transportation Factor Set 1	SMUD 2016 and Transportation Factor Set 1
Global Warming Potential	IPCC 4th Assessment	IPCC 4th Assessment
Category	Transit Fleet	Transit Fleet
Activity Source		
Notes	Based on information provided by South County Transit	Based on information provided by South County Transit
Created By	jbyrne@raneymanagement.com	jbyrne@raneymanagement.com
Created At	2018 Mar 23 05:52pm	2018 Mar 23 05:53pm
CO2 (MT)	474.12	162.066
CH4 (MT)	0	
N2O (MT)	0	
CO2e (MT)	474.12	162.066
Tags		
Transit VMT		
Transit Energy (MMBtu)	6750	1988.571429
Biogenic CO2 (MT)	0	
Biofuel CH4 (MT)	0	
Biofuel N2O (MT)	0	
Emissions per Passenger (MT CO2e / Passenger)	0	0
Emissions per Service Population (MT CO2e / Person)	0.019080811	0.006522296
Energy Per Passenger (MMBtu / Passenger)	0	0
Energy per Service Population (MMBtu / Person)	0.271651642	0.080029436
Fossil Energy (MMBtu)	6750	1988.571429
Biofuel Energy (MMBtu)		
CO2 Emissions Factor	0.07024	0
Biogenic CO2 Emissions Factor	0	0
CH4 Emissions Factor	0	0

Biofuel CH4 Emissions Factor	0	0
N2O Emissions Factor	0	0
Biofuel N2O Emissions Factor	0	0
Is This a Direct Entry Record?	No	Yes
Fuel Type	Gasoline	Diesel
Annual Fuel Use	54000	14400
Vehicle Type		Transit Bus
Annual Miles Traveled		
Electric CO2 Factor		
Electric CH4 Factor		
Electric N2O Factor		
Percent Biofuel Blend		0
Previously Calculated CO2		162.066
Previously Calculated CH4		
Previously Calculated N2O		
Previously Calculated Biogenic CO2		
Previously Calculated Biofuel CH4		
Previously Calculated Biofuel N2O		
Passenger Boardings		
Service Population (Residents and Workforce)	24848	24848
CO2 lbs/MWh	492.91	492.91
CH4 lbs/GWh	30	30
N2O lbs/GWh	11	11
Gas Passenger Vehicle Fuel Economy (MPG)	23.4	23.4
Gas Passenger Vehicle g CH4/mi	0.0173	0.0173
Gas PassengerVehicle g N2O/mi	0.0036	0.0036
Gas Light Truck Fuel Economy (MPG)	17.2	17.2
Gas Light Truck g CH4/mi	0.0163	0.0163
Gas Light Truck g N2O/mi	0.0066	0.0066
Gas Heavy Truck Fuel Economy (MPG)	5.3	5.3
Gas Heavy Truck g CH4/mi	0.0333	0.0333
Gas Heavy Truck g N2O/mi	0.0134	0.0134
Gas Transit Bus Fuel Economy (MPG)	3.3	3.3
Gas Transit Bus g CH4/mi	0.0333	0.0333

Gas Transit Bus g N2O/mi	0.0134	0.0134
Gas Para Transit Bus Fuel Economy (MPG)	7.7	7.7
Gas Para Transit Bus g CH4/mi	0.0333	0.0333
Gas Para Transit Bus g N2O/mi	0.0134	0.0134
Gas Motorcycle Fuel Economy (MPG)	43.54	43.54
Gas Motorcycle g CH4/mi	0.0672	0.0672
Gas Motorcycle g N2O/mi	0.0069	0.0069
Electric Vehicle Fuel Economy (MPGe)		
Diesel Passenger Vehicle Fuel Economy (MPG)	25.9	25.9
Diesel Passenger Vehicle g CH4/mi	0.0005	0.0005
Diesel PassengerVehicle g N2O/mi	0.0012	0.0012
Diesel Light Truck Fuel Economy (MPG)	19	19
Diesel Light Truck g CH4/mi	0.001	0.001
Diesel Light Truck g N2O/mi	0.0015	0.0015
Diesel Heavy Truck Fuel Economy (MPG)	5.8	5.8
Diesel Heavy Truck g CH4/mi	0.0051	0.0051
Diesel Heavy Truck g N2O/mi	0.0048	0.0048
Diesel Transit Bus Fuel Economy (MPG)	3.6	3.6
Diesel Transit Bus g CH4/mi	0.0051	0.0051
Diesel Transit Bus g N2O/mi	0.0048	0.0048
Diesel Para Transit Bus Fuel Economy (MPG)	8.5	8.5
Diesel Para Transit Bus g CH4/mi	0.0051	0.0051
Diesel Para Transit Bus g N2O/mi	0.0048	0.0048
Diesel Motorcycle Fuel Economy (MPG)		
Diesel Motorcycle g CH4/mi		
Diesel Motorcycle g N2O/mi		

Water & Wastewater Treatment

Id	78636	78637	78635
Output Record Ids With Co2e	889409	889413	889405
Inventory Record	Galt Wastewater Treatment Plant Nitrification/Denitrification	Galt Wastewater Treatment Plant	Galt Wastewater Treatment Plant Discharge
Calculator	Nitrification/Denitrification Process N2O Emissions from Wastewater Treatment	Process Emissions from Wastewater Treatment Lagoons	Process N2O from Effluent Discharge to Rivers and Estuaries
Gpc Scope	Scope 1	Scope 1	Scope 1
GPC Ref Number			
Factor Profiles	SMUD 2016	SMUD 2016	SMUD 2016
Global Warming Potential	IPCC 4th Assessment	IPCC 4th Assessment	IPCC 4th Assessment
Category	Water & Wastewater Treatment Facilities	Water & Wastewater Treatment Facilities	Water & Wastewater Treatment Facilities
Activity Source			
Notes	Based on information from Utility Division of City's Public Works Dept.	Based on information from Utility Division of City's Public Works Dept.	Based on information from Utility Division of City's Public Works Dept.
Created By	jbyrne@raneymanagement.com	jbyrne@raneymanagement.com	jbyrne@raneymanagement.com
Created At	2018 Mar 23 09:38pm	2018 Mar 23 09:40pm	2018 Mar 23 09:35pm
CO2 (MT)			
CH4 (MT)		232.2274081	
N2O (MT)	0.21742		0.195364491
CO2e (MT)	64.79116	5805.685202	58.21861832
Tags			
N Uptake in Treatment Process (kg N / kg BOD5)			0
Fraction N Removed in Nitrification/Denitrifiction			0
Daily N Load at Facility with Release to Environment (kg N/day)			68.13743
N2O Emissions Factor (kg N2O/kg N in effluent)			0.005
Is This a Direct Entry Record?			No
Do You have daily N load data from your effluent discharge?			Yes
Daily N Load			68.13743
Population Served	24848	24848	
Industrial-Commercial Discharge Multiplier			

Is your facility predominantly an Aerobic or Anaerobic system?			
Does your facility employ Nitrification/Denitrification?			
Previously Calculated N2O			
CO2 lbs/MWh	492.91	492.91	492.91
CH4 lbs/GWh	30	30	30
N2O lbs/GWh	11	11	11
Daily Lagoon BOD5 Load (kg/day)		1324.59165	
CO2e per Capita (MT)		0.233647988	
CH4 Emissions Factor		0.17532	
Calculation Type		Site Specific	
BOD5 Load		1962.358	
Fraction BOD5 Removed in Primary Treatment		32.5	
Industrial Discharge Multiplier		1.25	
Process N2O Population Served	24848		
N2O Emissions Factor (g/person)	7		
Is this a Direct Entry Record?	No		
Nitrification/Denitrification as a step in the treatment process?	Yes		
Industrial Commercial Discharge Multiplier	1.25		

Street Lights & Traffic Signals

Id	**83409**	**83408**
Output Record Ids With Co2e	942026	942018
Inventory Record	Grid Loss Related to Street Lights & Traffic Signals	Street Lights, Traffic Signals, Night Lights
Calculator	Emissions from Electric Power Transmission and Distribution Losses	Emissions from Grid Electricity
Gpc Scope	Scope 2	Scope 2
GPC Ref Number		
Factor Profiles	SMUD 2016	SMUD 2016
Global Warming Potential	IPCC 4th Assessment	IPCC 4th Assessment
Category	Street Lights & Traffic Signals	Street Lights & Traffic Signals
Activity Source		
Notes	Based on ClearPath defaults and SMUD data	Based on SMUD data
Created By	jbyrne@raneymanagement.com	jbyrne@raneymanagement.com
Created At	2018 Jun 25 07:29pm	2018 Jun 25 07:21pm
CO2 (MT)	25.00721163	299.4384316
CH4 (MT)	0.001522015	0.018224733
N2O (MT)	0.000558072	0.006682402
CO2e (MT)	25.2115675	301.8854057
Tags		
T&D Energy Equivalent (MMBtu)	381.7365666	
CO2 Emissions Factor	0.065509081	0.065509081
CH4 Emissions Factor	3.98708E-06	3.98708E-06
N2O Emissions Factor	1.46193E-06	1.46193E-06
Electricity Use	2644180	
Grid Loss Factor	4.23	
CO2 lbs/MWh	492.91	492.91
CH4 lbs/GWh	30	30
N2O lbs/GWh	11	11
Electricity Energy Equivalent (MMBTU)		4570.945392
Energy Cost		0
Energy per Streetlight		0
CO2e (MT) per Streetlight		0
Is this a Direct Entry Record?		No

Electricity Used		1339287
Number of Streetlights		
Previously Calculated CO2		
Previously Calculated CH4		
Previously Calculated N2O		

City of Galt
Business As Usual Forecast

Galt CAP
Business As Usual Forecast

	Community Inventory										Municipal Inventory											
Year	Energy	Natural Gas	Transportation Gasoline	Transportation Diesel	Off-Road Vehicle Emissions	Waste Collection and Transportation Emissions	Water	Waste Generated	Process & Fugitive Emissions	Agriculture	Electricity	T&D Energy	Streetlight and Traffic Signals Electricity	Streetlight and Traffic Signals T&D Energy	Fleet - Gasoline	Fleet- Diesel	Transit Fleet - Gasoline	Transit Fleet - Diesel	Daily Lagoon BOD5	Process N2O Population Served	Daily N Load at Facility	Total
2017	64410	20374	59572	15555	9960	342	1539	3720	9636	239	1429	117	292	24	396	19	477	163	5846	67	59	194236
2018	64861	20516	59989	15664	10030	344	1550	3746	9703	239	1439	118	294	25	399	19	481	164	5887	68	59	195595
2019	65315	20660	60409	15773	10100	347	1561	3772	9771	239	1449	119	296	25	402	19	484	165	5928	68	59	196961
2020	66556	21052	61556	16073	10292	353	1590	3844	9957	239	1477	121	301	25	410	19	493	169	6041	70	61	200699
2021	67821	21452	62726	16379	10487	360	1620	3917	10146	239	1505	123	307	26	417	20	503	172	6156	71	62	204509
2022	69109	21860	63918	16690	10687	367	1651	3991	10339	239	1534	126	313	26	425	20	512	175	6273	72	63	208390
2023	70422	22275	65132	17007	10890	374	1683	4067	10535	239	1563	128	319	27	433	20	522	178	6392	74	64	212344
2024	71760	22699	66370	17330	11097	381	1715	4144	10736	239	1592	131	325	27	442	21	532	182	6513	75	65	216376
2025	73124	23130	67631	17659	11307	388	1747	4223	10940	239	1623	133	331	28	450	21	542	185	6637	76	67	220481
2026	74513	23569	68916	17995	11522	396	1780	4303	11147	239	1654	136	338	28	459	22	552	189	6763	78	68	224667
2027	75929	24017	70225	18337	11741	403	1814	4385	11359	239	1685	138	344	29	467	22	563	192	6892	79	69	228929
2028	77372	24473	71559	18685	11964	411	1849	4468	11575	239	1717	141	350	29	476	22	574	196	7023	81	70	233274
2029	78842	24938	72919	19040	12192	419	1884	4553	11795	239	1750	144	357	30	485	23	584	200	7156	82	72	237704
2030	80340	25412	74304	19402	12423	427	1920	4640	12019	239	1783	146	364	30	495	23	596	204	7292	84	73	242216
2031	81866	25895	75716	19771	12659	435	1956	4728	12247	239	1817	149	371	31	504	24	607	207	7431	86	75	246814
2032	83422	26387	77155	20146	12900	443	1993	4818	12480	239	1851	152	378	32	513	24	618	211	7572	87	76	251497
2033	85007	26888	78621	20529	13145	451	2031	4909	12717	239	1886	155	385	32	523	25	630	215	7716	89	77	256270
2034	86622	27399	80115	20919	13395	460	2070	5003	12959	239	1922	158	392	33	533	25	642	219	7862	91	79	261137
2035	89480	28304	82758	21609	13837	475	2138	5168	13387	239	1986	163	405	34	551	26	663	227	8122	94	81	269747
2036	92433	29238	85489	22322	14293	491	2209	5338	13828	239	2051	168	419	35	569	27	685	234	8390	97	84	278639
2037	95483	30202	88310	23059	14765	507	2281	5514	14285	239	2119	174	432	36	588	28	708	242	8667	100	87	287826
2038	98634	31199	91225	23820	15252	524	2357	5696	14756	239	2189	180	447	37	607	29	731	250	8953	103	90	297318
2039	101889	32229	94235	24606	15756	541	2435	5884	15243	239	2261	186	462	39	627	30	755	258	9248	106	93	307122
2040	105252	33292	97345	25418	16275	559	2515	6079	15746	239	2336	192	477	40	648	31	780	267	9553	110	96	317250
2041	108725	34391	100557	26257	16813	577	2598	6279	16266	239	2413	198	492	41	669	32	806	275	9869	114	99	327710
2042	112313	35526	103876	27123	17367	596	2684	6486	16802	239	2492	204	509	42	691	33	833	285	10194	117	102	338514
2043	116019	36698	107304	28018	17940	616	2772	6700	17357	239	2575	211	526	44	714	34	860	294	10531	121	106	349679
2044	119848	37909	110845	28943	18533	636	2864	6921	17930	239	2660	218	543	45	738	35	888	304	10878	125	109	361211
2045	123803	39160	114502	29898	19144	657	2958	7150	18521	239	2747	225	561	47	762	36	918	314	11237	129	113	373121
2046	127888	40452	118281	30885	19776	679	3056	7386	19133	239	2838	233	579	48	787	37	948	324	11608	134	116	385427
2047	132109	41787	122184	31904	20428	701	3157	7630	19764	239	2932	241	598	50	813	38	979	335	11991	138	120	398138
2048	136468	43166	126216	32957	21103	725	3261	7881	20416	239	3028	248	618	52	840	40	1012	346	12387	143	124	411270
2049	140972	44591	130382	34044	21799	748	3368	8141	21090	239	3128	257	639	53	868	41	1045	357	12796	147	128	424833
2050	145624	46063	134685	35167	22518	773	3479	8410	21786	247	3231	265	660	55	897	42	1079	369	13218	152	132	438852

	2030	2050
Total Emissions	242216	438852
Estimated Population	32108	56090
Per Capita Emissions Rate	7.54387	7.824077

Year	Estimated Population	Emissions	Per Capita
2016	24848	196877	7.92
2017	25022	194236	7.76
2018	25197	195595	7.76
2019	26270	196961	7.50
2020	26769	200699	7.50
2021	27278	204509	7.50
2022	27796	208390	7.50
2023	28324	212344	7.50
2024	28862	216376	7.50
2025	29411	220481	7.50
2026	29969	224667	7.50
2027	30539	228929	7.50
2028	31119	233274	7.50
2029	31710	237704	7.50
2030	32108	242216	7.54
2031	32718	246814	7.54
2032	33340	251497	7.54
2033	33973	256270	7.54
2034	34619	261137	7.54
2035	35276	269747	7.65
2036	35947	278639	7.75
2037	37133	287826	7.75
2038	38358	297318	7.75
2039	39624	307122	7.75
2040	40932	317250	7.75
2041	42282	327710	7.75
2042	43678	338514	7.75
2043	45119	349679	7.75
2044	46608	361211	7.75
2045	48146	373121	7.75
2046	49735	385427	7.75
2047	51376	398138	7.75
2048	53072	411270	7.75
2049	54823	424833	7.75
2050	56090	438852	7.82

Year	Usage	CO2e	Output Name
2016			Annual Biosolids Incinerated (MT)
2016			Annual Digester Gas Flared (scf / year)
2016			Annual Methanol Load (MT CH3OH / year)
2016	1325	5806	Daily Lagoon BOD5 Load (kg/day)
2017	1334	5846	Daily Lagoon BOD5 Load (kg/day)
2018	1343	5887	Daily Lagoon BOD5 Load (kg/day)
2019	1353	5928	Daily Lagoon BOD5 Load (kg/day)
2020	1378	6041	Daily Lagoon BOD5 Load (kg/day)
2021	1404	6156	Daily Lagoon BOD5 Load (kg/day)
2022	1431	6273	Daily Lagoon BOD5 Load (kg/day)
2023	1458	6392	Daily Lagoon BOD5 Load (kg/day)
2024	1486	6513	Daily Lagoon BOD5 Load (kg/day)
2025	1514	6637	Daily Lagoon BOD5 Load (kg/day)
2026	1543	6763	Daily Lagoon BOD5 Load (kg/day)
2027	1572	6892	Daily Lagoon BOD5 Load (kg/day)
2028	1602	7023	Daily Lagoon BOD5 Load (kg/day)
2029	1633	7156	Daily Lagoon BOD5 Load (kg/day)
2030	1664	7292	Daily Lagoon BOD5 Load (kg/day)
2031	1695	7431	Daily Lagoon BOD5 Load (kg/day)
2032	1728	7572	Daily Lagoon BOD5 Load (kg/day)
2033	1760	7716	Daily Lagoon BOD5 Load (kg/day)
2034	1794	7862	Daily Lagoon BOD5 Load (kg/day)
2035	1853	8122	Daily Lagoon BOD5 Load (kg/day)
2036	1914	8390	Daily Lagoon BOD5 Load (kg/day)
2037	1977	8667	Daily Lagoon BOD5 Load (kg/day)
2038	2043	8953	Daily Lagoon BOD5 Load (kg/day)
2039	2110	9248	Daily Lagoon BOD5 Load (kg/day)
2040	2180	9553	Daily Lagoon BOD5 Load (kg/day)
2041	2252	9869	Daily Lagoon BOD5 Load (kg/day)
2042	2326	10194	Daily Lagoon BOD5 Load (kg/day)
2043	2403	10531	Daily Lagoon BOD5 Load (kg/day)
2044	2482	10878	Daily Lagoon BOD5 Load (kg/day)
2045	2564	11237	Daily Lagoon BOD5 Load (kg/day)
2046	2648	11608	Daily Lagoon BOD5 Load (kg/day)
2047	2736	11991	Daily Lagoon BOD5 Load (kg/day)
2048	2826	12387	Daily Lagoon BOD5 Load (kg/day)
2049	2919	12796	Daily Lagoon BOD5 Load (kg/day)
2016			Daily Septic System BOD5 Load (kg/day)
2016			Digester Annual Gas Production (scf / Year)
2016			Electricity Energy Equivalent (MMBtu)
2016			Natural Gas - Energy Equivalent (MMBtu)
2016			LPG - Energy Equivalent (MMBtu)
2016			Propane - Energy Equivalent (MMBtu)
2016			Butane - Energy Equivalent (MMBtu)
2016			Kerosene - Energy Equivalent (MMBtu)
2016			Gasoline - Energy Equivalent (MMBtu)

2016			Distillate Fuel Oil No. 2 - Energy Equivalent (MMBtu)
2016			Residual Fuel Oil No. 5 - Energy Equivalent (MMBtu)
2016			Residual Fuel Oil No. 6 - Energy Equivalent (MMBtu)
2016			Biodiesel - Energy Equivalent (MMBtu)
2016	25633	67	Process N2O Population Served
2017	25812	67	Process N2O Population Served
2018	25993	68	Process N2O Population Served
2019	26175	68	Process N2O Population Served
2020	26672	70	Process N2O Population Served
2021	27179	71	Process N2O Population Served
2022	27696	72	Process N2O Population Served
2023	28222	74	Process N2O Population Served
2024	28758	75	Process N2O Population Served
2025	29304	76	Process N2O Population Served
2026	29861	78	Process N2O Population Served
2027	30429	79	Process N2O Population Served
2028	31007	81	Process N2O Population Served
2029	31596	82	Process N2O Population Served
2030	32196	84	Process N2O Population Served
2031	32808	86	Process N2O Population Served
2032	33431	87	Process N2O Population Served
2033	34066	89	Process N2O Population Served
2034	34714	91	Process N2O Population Served
2035	35859	94	Process N2O Population Served
2036	37043	97	Process N2O Population Served
2037	38265	100	Process N2O Population Served
2038	39528	103	Process N2O Population Served
2039	40832	106	Process N2O Population Served
2040	42180	110	Process N2O Population Served
2041	43572	114	Process N2O Population Served
2042	45009	117	Process N2O Population Served
2043	46495	121	Process N2O Population Served
2044	48029	125	Process N2O Population Served
2045	49614	129	Process N2O Population Served
2046	51251	134	Process N2O Population Served
2047	52943	138	Process N2O Population Served
2048	54690	143	Process N2O Population Served
2049	56494	147	Process N2O Population Served
2016			T&D Energy Equivalent (MMBtu)
2016	68	58	Daily N Load at Facility with Release to Environment (kg N/day)
2017	69	59	Daily N Load at Facility with Release to Environment (kg N/day)
2018	69	59	Daily N Load at Facility with Release to Environment (kg N/day)
2019	70	59	Daily N Load at Facility with Release to Environment (kg N/day)
2020	71	61	Daily N Load at Facility with Release to Environment (kg N/day)
2021	72	62	Daily N Load at Facility with Release to Environment (kg N/day)
2022	74	63	Daily N Load at Facility with Release to Environment (kg N/day)
2023	75	64	Daily N Load at Facility with Release to Environment (kg N/day)

2024	76	65	Daily N Load at Facility with Release to Environment (kg N/day)
2025	78	67	Daily N Load at Facility with Release to Environment (kg N/day)
2026	79	68	Daily N Load at Facility with Release to Environment (kg N/day)
2027	81	69	Daily N Load at Facility with Release to Environment (kg N/day)
2028	82	70	Daily N Load at Facility with Release to Environment (kg N/day)
2029	84	72	Daily N Load at Facility with Release to Environment (kg N/day)
2030	86	73	Daily N Load at Facility with Release to Environment (kg N/day)
2031	87	75	Daily N Load at Facility with Release to Environment (kg N/day)
2032	89	76	Daily N Load at Facility with Release to Environment (kg N/day)
2033	91	77	Daily N Load at Facility with Release to Environment (kg N/day)
2034	92	79	Daily N Load at Facility with Release to Environment (kg N/day)
2035	95	81	Daily N Load at Facility with Release to Environment (kg N/day)
2036	98	84	Daily N Load at Facility with Release to Environment (kg N/day)
2037	102	87	Daily N Load at Facility with Release to Environment (kg N/day)
2038	105	90	Daily N Load at Facility with Release to Environment (kg N/day)
2039	109	93	Daily N Load at Facility with Release to Environment (kg N/day)
2040	112	96	Daily N Load at Facility with Release to Environment (kg N/day)
2041	116	99	Daily N Load at Facility with Release to Environment (kg N/day)
2042	120	102	Daily N Load at Facility with Release to Environment (kg N/day)
2043	124	106	Daily N Load at Facility with Release to Environment (kg N/day)
2044	128	109	Daily N Load at Facility with Release to Environment (kg N/day)
2045	132	113	Daily N Load at Facility with Release to Environment (kg N/day)
2046	136	116	Daily N Load at Facility with Release to Environment (kg N/day)
2047	141	120	Daily N Load at Facility with Release to Environment (kg N/day)
2048	145	124	Daily N Load at Facility with Release to Environment (kg N/day)
2049	150	128	Daily N Load at Facility with Release to Environment (kg N/day)

Year	Usage	CO2e	Output Name
2016	1	474	Gasoline - Transit VMT
2017	1	477	Gasoline - Transit VMT
2018	1	481	Gasoline - Transit VMT
2019	1	484	Gasoline - Transit VMT
2020	1	493	Gasoline - Transit VMT
2021	1	503	Gasoline - Transit VMT
2022	1	512	Gasoline - Transit VMT
2023	1	522	Gasoline - Transit VMT
2024	1	532	Gasoline - Transit VMT
2025	1	542	Gasoline - Transit VMT
2026	1	552	Gasoline - Transit VMT
2027	1	563	Gasoline - Transit VMT
2028	1	574	Gasoline - Transit VMT
2029	1	584	Gasoline - Transit VMT
2030	1	596	Gasoline - Transit VMT
2031	1	607	Gasoline - Transit VMT
2032	1	618	Gasoline - Transit VMT
2033	1	630	Gasoline - Transit VMT
2034	1	642	Gasoline - Transit VMT
2035	1	663	Gasoline - Transit VMT
2036	1	685	Gasoline - Transit VMT
2037	1	708	Gasoline - Transit VMT
2038	2	731	Gasoline - Transit VMT
2039	2	755	Gasoline - Transit VMT
2040	2	780	Gasoline - Transit VMT
2041	2	806	Gasoline - Transit VMT
2042	2	833	Gasoline - Transit VMT
2043	2	860	Gasoline - Transit VMT
2044	2	888	Gasoline - Transit VMT
2045	2	918	Gasoline - Transit VMT
2046	2	948	Gasoline - Transit VMT
2047	2	979	Gasoline - Transit VMT
2048	2	1012	Gasoline - Transit VMT
2049	2	1045	Gasoline - Transit VMT
2016	1	162	Diesel - Transit VMT
2017	1	163	Diesel - Transit VMT
2018	1	164	Diesel - Transit VMT
2019	1	165	Diesel - Transit VMT
2020	1	169	Diesel - Transit VMT
2021	1	172	Diesel - Transit VMT
2022	1	175	Diesel - Transit VMT
2023	1	178	Diesel - Transit VMT
2024	1	182	Diesel - Transit VMT
2025	1	185	Diesel - Transit VMT
2026	1	189	Diesel - Transit VMT
2027	1	192	Diesel - Transit VMT

2028	1	196	Diesel - Transit VMT
2029	1	200	Diesel - Transit VMT
2030	1	204	Diesel - Transit VMT
2031	1	207	Diesel - Transit VMT
2032	1	211	Diesel - Transit VMT
2033	1	215	Diesel - Transit VMT
2034	1	219	Diesel - Transit VMT
2035	1	227	Diesel - Transit VMT
2036	1	234	Diesel - Transit VMT
2037	1	242	Diesel - Transit VMT
2038	2	250	Diesel - Transit VMT
2039	2	258	Diesel - Transit VMT
2040	2	267	Diesel - Transit VMT
2041	2	275	Diesel - Transit VMT
2042	2	285	Diesel - Transit VMT
2043	2	294	Diesel - Transit VMT
2044	2	304	Diesel - Transit VMT
2045	2	314	Diesel - Transit VMT
2046	2	324	Diesel - Transit VMT
2047	2	335	Diesel - Transit VMT
2048	2	346	Diesel - Transit VMT
2049	2	357	Diesel - Transit VMT
2016			CNG - Transit VMT
2016			LNG - Transit VMT
2016			LPG - Transit VMT
2016			Methanol - Transit VMT
2016			Ethanol - Transit VMT
2016			Biodiesel - Transit VMT
2016			Electric - Transit VMT

Year	Usage	CO2e	Output Name
2016	470612	394	Gasoline - Fleet Vehicle VMT
2017	473907	396	Gasoline - Fleet Vehicle VMT
2018	477224	399	Gasoline - Fleet Vehicle VMT
2019	480564	402	Gasoline - Fleet Vehicle VMT
2020	489695	410	Gasoline - Fleet Vehicle VMT
2021	498999	417	Gasoline - Fleet Vehicle VMT
2022	508480	425	Gasoline - Fleet Vehicle VMT
2023	518142	433	Gasoline - Fleet Vehicle VMT
2024	527986	442	Gasoline - Fleet Vehicle VMT
2025	538018	450	Gasoline - Fleet Vehicle VMT
2026	548240	459	Gasoline - Fleet Vehicle VMT
2027	558657	467	Gasoline - Fleet Vehicle VMT
2028	569271	476	Gasoline - Fleet Vehicle VMT
2029	580088	485	Gasoline - Fleet Vehicle VMT
2030	591109	495	Gasoline - Fleet Vehicle VMT
2031	602340	504	Gasoline - Fleet Vehicle VMT
2032	613785	513	Gasoline - Fleet Vehicle VMT
2033	625447	523	Gasoline - Fleet Vehicle VMT
2034	637330	533	Gasoline - Fleet Vehicle VMT
2035	658362	551	Gasoline - Fleet Vehicle VMT
2036	680088	569	Gasoline - Fleet Vehicle VMT
2037	702531	588	Gasoline - Fleet Vehicle VMT
2038	725714	607	Gasoline - Fleet Vehicle VMT
2039	749663	627	Gasoline - Fleet Vehicle VMT
2040	774402	648	Gasoline - Fleet Vehicle VMT
2041	799957	669	Gasoline - Fleet Vehicle VMT
2042	826356	691	Gasoline - Fleet Vehicle VMT
2043	853625	714	Gasoline - Fleet Vehicle VMT
2044	881795	738	Gasoline - Fleet Vehicle VMT
2045	910894	762	Gasoline - Fleet Vehicle VMT
2046	940954	787	Gasoline - Fleet Vehicle VMT
2047	972005	813	Gasoline - Fleet Vehicle VMT
2048	1004081	840	Gasoline - Fleet Vehicle VMT
2049	1037216	868	Gasoline - Fleet Vehicle VMT
2016	1	19	Diesel - Fleet Vehicle VMT
2017	1	19	Diesel - Fleet Vehicle VMT
2018	1	19	Diesel - Fleet Vehicle VMT
2019	1	19	Diesel - Fleet Vehicle VMT
2020	1	19	Diesel - Fleet Vehicle VMT
2021	1	20	Diesel - Fleet Vehicle VMT
2022	1	20	Diesel - Fleet Vehicle VMT
2023	1	20	Diesel - Fleet Vehicle VMT
2024	1	21	Diesel - Fleet Vehicle VMT
2025	1	21	Diesel - Fleet Vehicle VMT
2026	1	22	Diesel - Fleet Vehicle VMT
2027	1	22	Diesel - Fleet Vehicle VMT

2028	1	22	Diesel - Fleet Vehicle VMT
2029	1	23	Diesel - Fleet Vehicle VMT
2030	1	23	Diesel - Fleet Vehicle VMT
2031	1	24	Diesel - Fleet Vehicle VMT
2032	1	24	Diesel - Fleet Vehicle VMT
2033	1	25	Diesel - Fleet Vehicle VMT
2034	1	25	Diesel - Fleet Vehicle VMT
2035	1	26	Diesel - Fleet Vehicle VMT
2036	1	27	Diesel - Fleet Vehicle VMT
2037	1	28	Diesel - Fleet Vehicle VMT
2038	2	29	Diesel - Fleet Vehicle VMT
2039	2	30	Diesel - Fleet Vehicle VMT
2040	2	31	Diesel - Fleet Vehicle VMT
2041	2	32	Diesel - Fleet Vehicle VMT
2042	2	33	Diesel - Fleet Vehicle VMT
2043	2	34	Diesel - Fleet Vehicle VMT
2044	2	35	Diesel - Fleet Vehicle VMT
2045	2	36	Diesel - Fleet Vehicle VMT
2046	2	37	Diesel - Fleet Vehicle VMT
2047	2	38	Diesel - Fleet Vehicle VMT
2048	2	40	Diesel - Fleet Vehicle VMT
2049	2	41	Diesel - Fleet Vehicle VMT
2016			CNG - Fleet Vehicle VMT
2016			LNG - Fleet Vehicle VMT
2016			LPG - Fleet Vehicle VMT
2016			Methanol - Fleet Vehicle VMT
2016			Ethanol - Fleet Vehicle VMT
2016			Biodiesel - Fleet Vehicle VMT
2016			Electricity - Fleet Vehicle VMT
2016			Ships and Boats - Off Road Fuel Use
2016			Locomotives - Off Road Fuel Use
2016			Agricultural - Off Road Fuel Use
2016			Construction - Off Road Fuel Use
2016			Snowmobiles and Recreational - Off Road Fuel Use
2016			Small Utility - Off Road Fuel Use
2016			Large Utility - Off Road Fuel Use
2016			Aircraft - Off Road Fuel Use

Year	Usage	CO2e	Output Name
2016	4571	290	Electricity Energy Equivalent (MMBTU)
2017	4603	292	Electricity Energy Equivalent (MMBTU)
2018	4635	294	Electricity Energy Equivalent (MMBTU)
2019	4668	296	Electricity Energy Equivalent (MMBTU)
2020	4756	301	Electricity Energy Equivalent (MMBTU)
2021	4847	307	Electricity Energy Equivalent (MMBTU)
2022	4939	313	Electricity Energy Equivalent (MMBTU)
2023	5033	319	Electricity Energy Equivalent (MMBTU)
2024	5128	325	Electricity Energy Equivalent (MMBTU)
2025	5226	331	Electricity Energy Equivalent (MMBTU)
2026	5325	338	Electricity Energy Equivalent (MMBTU)
2027	5426	344	Electricity Energy Equivalent (MMBTU)
2028	5529	350	Electricity Energy Equivalent (MMBTU)
2029	5634	357	Electricity Energy Equivalent (MMBTU)
2030	5741	364	Electricity Energy Equivalent (MMBTU)
2031	5850	371	Electricity Energy Equivalent (MMBTU)
2032	5962	378	Electricity Energy Equivalent (MMBTU)
2033	6075	385	Electricity Energy Equivalent (MMBTU)
2034	6190	392	Electricity Energy Equivalent (MMBTU)
2035	6395	405	Electricity Energy Equivalent (MMBTU)
2036	6606	419	Electricity Energy Equivalent (MMBTU)
2037	6824	432	Electricity Energy Equivalent (MMBTU)
2038	7049	447	Electricity Energy Equivalent (MMBTU)
2039	7281	462	Electricity Energy Equivalent (MMBTU)
2040	7522	477	Electricity Energy Equivalent (MMBTU)
2041	7770	492	Electricity Energy Equivalent (MMBTU)
2042	8026	509	Electricity Energy Equivalent (MMBTU)
2043	8291	526	Electricity Energy Equivalent (MMBTU)
2044	8565	543	Electricity Energy Equivalent (MMBTU)
2045	8847	561	Electricity Energy Equivalent (MMBTU)
2046	9139	579	Electricity Energy Equivalent (MMBTU)
2047	9441	598	Electricity Energy Equivalent (MMBTU)
2048	9752	618	Electricity Energy Equivalent (MMBTU)
2049	10074	639	Electricity Energy Equivalent (MMBTU)
2016			Natural Gas Energy Equivalent (MMBtu)
2016	382	24	T&D Energy Equivalent (MMBtu)
2017	384	24	T&D Energy Equivalent (MMBtu)
2018	387	25	T&D Energy Equivalent (MMBtu)
2019	390	25	T&D Energy Equivalent (MMBtu)
2020	397	25	T&D Energy Equivalent (MMBtu)
2021	405	26	T&D Energy Equivalent (MMBtu)
2022	412	26	T&D Energy Equivalent (MMBtu)
2023	420	27	T&D Energy Equivalent (MMBtu)
2024	428	27	T&D Energy Equivalent (MMBtu)
2025	436	28	T&D Energy Equivalent (MMBtu)
2026	445	28	T&D Energy Equivalent (MMBtu)

2027	453	29	T&D Energy Equivalent (MMBtu)
2028	462	29	T&D Energy Equivalent (MMBtu)
2029	471	30	T&D Energy Equivalent (MMBtu)
2030	479	30	T&D Energy Equivalent (MMBtu)
2031	489	31	T&D Energy Equivalent (MMBtu)
2032	498	32	T&D Energy Equivalent (MMBtu)
2033	507	32	T&D Energy Equivalent (MMBtu)
2034	517	33	T&D Energy Equivalent (MMBtu)
2035	534	34	T&D Energy Equivalent (MMBtu)
2036	552	35	T&D Energy Equivalent (MMBtu)
2037	570	36	T&D Energy Equivalent (MMBtu)
2038	589	37	T&D Energy Equivalent (MMBtu)
2039	608	39	T&D Energy Equivalent (MMBtu)
2040	628	40	T&D Energy Equivalent (MMBtu)
2041	649	41	T&D Energy Equivalent (MMBtu)
2042	670	42	T&D Energy Equivalent (MMBtu)
2043	692	44	T&D Energy Equivalent (MMBtu)
2044	715	45	T&D Energy Equivalent (MMBtu)
2045	739	47	T&D Energy Equivalent (MMBtu)
2046	763	48	T&D Energy Equivalent (MMBtu)
2047	788	50	T&D Energy Equivalent (MMBtu)
2048	814	52	T&D Energy Equivalent (MMBtu)
2049	841	53	T&D Energy Equivalent (MMBtu)

Year	Usage	CO2e	Output Name
2016			Absorption Chiller - Cooling Demand (MMBtu)
2016			Engine-Driven Compressor - Cooling Demand (MMBtu)
2016			Electric-Driven Compressor - Cooling Demand (MMBtu)
2016			Other - Cooling Demand (MMBtu)
2016			Natural Gas - District Heat Energy Consumption (MMBtu)
2016			Anthracite Coal - District Heat Energy Consumption (MMBtu)
2016			Bituminous Coal - District Heat Energy Consumption (MMBtu)
2016			Subbituminous Coal - District Heat Energy Consumption (MMBtu)
2016			Lignite Coal - District Heat Energy Consumption (MMBtu)
2016			Distillate Fuel Oil No 1 - District Heat Energy Consumption (MMBtu)
2016			Distillate Fuel Oil No 2 - District Heat Energy Consumption (MMBtu)
2016			Distillate Fuel Oil No 4 - District Heat Energy Consumption (MMBtu)
2016			Residual Fuel Oil No 5 - District Heat Energy Consumption (MMBtu)
2016			Residual Fuel Oil No 6 - District Heat Energy Consumption (MMBtu)
2016			Other - District Heat Energy Consumption (MMBtu)
2016	22394	1419	Electricity Energy Equivalent (MMBtu)
2017	22551	1429	Electricity Energy Equivalent (MMBtu)
2018	22709	1439	Electricity Energy Equivalent (MMBtu)
2019	22868	1449	Electricity Energy Equivalent (MMBtu)
2020	23302	1477	Electricity Energy Equivalent (MMBtu)
2021	23745	1505	Electricity Energy Equivalent (MMBtu)
2022	24196	1534	Electricity Energy Equivalent (MMBtu)
2023	24656	1563	Electricity Energy Equivalent (MMBtu)
2024	25125	1592	Electricity Energy Equivalent (MMBtu)
2025	25602	1623	Electricity Energy Equivalent (MMBtu)
2026	26088	1654	Electricity Energy Equivalent (MMBtu)
2027	26584	1685	Electricity Energy Equivalent (MMBtu)
2028	27089	1717	Electricity Energy Equivalent (MMBtu)
2029	27604	1750	Electricity Energy Equivalent (MMBtu)
2030	28128	1783	Electricity Energy Equivalent (MMBtu)
2031	28663	1817	Electricity Energy Equivalent (MMBtu)
2032	29207	1851	Electricity Energy Equivalent (MMBtu)
2033	29762	1886	Electricity Energy Equivalent (MMBtu)
2034	30328	1922	Electricity Energy Equivalent (MMBtu)
2035	31329	1986	Electricity Energy Equivalent (MMBtu)
2036	32362	2051	Electricity Energy Equivalent (MMBtu)
2037	33430	2119	Electricity Energy Equivalent (MMBtu)
2038	34534	2189	Electricity Energy Equivalent (MMBtu)
2039	35673	2261	Electricity Energy Equivalent (MMBtu)
2040	36850	2336	Electricity Energy Equivalent (MMBtu)
2041	38066	2413	Electricity Energy Equivalent (MMBtu)
2042	39323	2492	Electricity Energy Equivalent (MMBtu)
2043	40620	2575	Electricity Energy Equivalent (MMBtu)
2044	41961	2660	Electricity Energy Equivalent (MMBtu)
2045	43345	2747	Electricity Energy Equivalent (MMBtu)
2046	44776	2838	Electricity Energy Equivalent (MMBtu)

2047	46253	2932	Electricity Energy Equivalent (MMBtu)
2048	47780	3028	Electricity Energy Equivalent (MMBtu)
2049	49357	3128	Electricity Energy Equivalent (MMBtu)
2016			Natural Gas - Energy Equivalent (MMBtu)
2016			LPG - Energy Equivalent (MMBtu)
2016			Propane - Energy Equivalent (MMBtu)
2016			Butane - Energy Equivalent (MMBtu)
2016			Kerosene - Energy Equivalent (MMBtu)
2016			Gasoline - Energy Equivalent (MMBtu)
2016			Distillate Fuel Oil No. 2 - Energy Equivalent (MMBtu)
2016			Residual Fuel Oil No. 5 - Energy Equivalent (MMBtu)
2016			Residual Fuel Oil No. 6 - Energy Equivalent (MMBtu)
2016			Electricity - Purchased CHP Energy (MMBtu)
2016			Heat - Purchased CHP Energy (MMBtu)
2016	1837	116	T&D Energy Equivalent (MMBtu)
2017	1850	117	T&D Energy Equivalent (MMBtu)
2018	1863	118	T&D Energy Equivalent (MMBtu)
2019	1876	119	T&D Energy Equivalent (MMBtu)
2020	1912	121	T&D Energy Equivalent (MMBtu)
2021	1948	123	T&D Energy Equivalent (MMBtu)
2022	1985	126	T&D Energy Equivalent (MMBtu)
2023	2023	128	T&D Energy Equivalent (MMBtu)
2024	2061	131	T&D Energy Equivalent (MMBtu)
2025	2101	133	T&D Energy Equivalent (MMBtu)
2026	2140	136	T&D Energy Equivalent (MMBtu)
2027	2181	138	T&D Energy Equivalent (MMBtu)
2028	2223	141	T&D Energy Equivalent (MMBtu)
2029	2265	144	T&D Energy Equivalent (MMBtu)
2030	2308	146	T&D Energy Equivalent (MMBtu)
2031	2352	149	T&D Energy Equivalent (MMBtu)
2032	2396	152	T&D Energy Equivalent (MMBtu)
2033	2442	155	T&D Energy Equivalent (MMBtu)
2034	2488	158	T&D Energy Equivalent (MMBtu)
2035	2570	163	T&D Energy Equivalent (MMBtu)
2036	2655	168	T&D Energy Equivalent (MMBtu)
2037	2743	174	T&D Energy Equivalent (MMBtu)
2038	2833	180	T&D Energy Equivalent (MMBtu)
2039	2927	186	T&D Energy Equivalent (MMBtu)
2040	3023	192	T&D Energy Equivalent (MMBtu)
2041	3123	198	T&D Energy Equivalent (MMBtu)
2042	3226	204	T&D Energy Equivalent (MMBtu)
2043	3333	211	T&D Energy Equivalent (MMBtu)
2044	3443	218	T&D Energy Equivalent (MMBtu)
2045	3556	225	T&D Energy Equivalent (MMBtu)
2046	3674	233	T&D Energy Equivalent (MMBtu)
2047	3795	241	T&D Energy Equivalent (MMBtu)
2048	3920	248	T&D Energy Equivalent (MMBtu)

2049	4050	257	T&D Energy Equivalent (MMBtu)

Year	Usage	CO2e	Output Name
2017			HFC-23 - CO2e (MT)
2017			HFC-32 - CO2e (MT)
2017			HFC-125 - CO2e (MT)
2017			HFC-134a - CO2e (MT)
2017			HFC-143a - CO2e (MT)
2017			HFC-152a - CO2e (MT)
2017			HFC-236fa - CO2e (MT)
2017			HFC-43-10mee - CO2e (MT)
2017			HFC-227ea - CO2e (MT)
2017			HCFC-22 - CO2e (MT)
2017			HFC-404a - CO2e (MT)
2017			HFC-407c - CO2e (MT)
2017			HFC-410a - CO2e (MT)
2017			Natural Gas Released (MT)
2017	1	9636	Other Process and Fugitive Gas (MT)
2018	1	9703	Other Process and Fugitive Gas (MT)
2019	1	9771	Other Process and Fugitive Gas (MT)
2020	1	9957	Other Process and Fugitive Gas (MT)
2021	1	10146	Other Process and Fugitive Gas (MT)
2022	1	10339	Other Process and Fugitive Gas (MT)
2023	1	10535	Other Process and Fugitive Gas (MT)
2024	1	10736	Other Process and Fugitive Gas (MT)
2025	1	10940	Other Process and Fugitive Gas (MT)
2026	1	11147	Other Process and Fugitive Gas (MT)
2027	1	11359	Other Process and Fugitive Gas (MT)
2028	1	11575	Other Process and Fugitive Gas (MT)
2029	1	11795	Other Process and Fugitive Gas (MT)
2030	1	12019	Other Process and Fugitive Gas (MT)
2031	1	12247	Other Process and Fugitive Gas (MT)
2032	1	12480	Other Process and Fugitive Gas (MT)
2033	1	12717	Other Process and Fugitive Gas (MT)
2034	1	12959	Other Process and Fugitive Gas (MT)
2035	1	13387	Other Process and Fugitive Gas (MT)
2036	1	13828	Other Process and Fugitive Gas (MT)
2037	1	14285	Other Process and Fugitive Gas (MT)
2038	2	14756	Other Process and Fugitive Gas (MT)
2039	2	15243	Other Process and Fugitive Gas (MT)
2040	2	15746	Other Process and Fugitive Gas (MT)
2041	2	16266	Other Process and Fugitive Gas (MT)
2042	2	16802	Other Process and Fugitive Gas (MT)
2043	2	17357	Other Process and Fugitive Gas (MT)
2044	2	17930	Other Process and Fugitive Gas (MT)
2045	2	18521	Other Process and Fugitive Gas (MT)
2046	2	19133	Other Process and Fugitive Gas (MT)
2047	2	19764	Other Process and Fugitive Gas (MT)
2048	2	20416	Other Process and Fugitive Gas (MT)

2049	2	21090	Other Process and Fugitive Gas (MT)
2017			Coal Processing CH4 (MT)
2017			Oil System CH4 (MT)

Year	Usage	CO2e	Output Name
2017			Annual Biosolids Incinerated (MT)
2017			Annual Digester Gas Flared (scf / year)
2017			Annual Gas Production (scf / Year)
2017			Annual Methanol Load (MT CH3OH / year)
2017			Daily Lagoon BOD5 Load (kg/day)
2017			Daily Septic System BOD5 Load (kg/day)
2017			Process N2O Population Served
2017			Wastewater Electric Energy Equivalent (MMBtu)
2017	4766	1539	Water Supply Energy Equivalent (MMBtu)
2018	4799	1550	Water Supply Energy Equivalent (MMBtu)
2019	4833	1561	Water Supply Energy Equivalent (MMBtu)
2020	4925	1590	Water Supply Energy Equivalent (MMBtu)
2021	5018	1620	Water Supply Energy Equivalent (MMBtu)
2022	5114	1651	Water Supply Energy Equivalent (MMBtu)
2023	5211	1683	Water Supply Energy Equivalent (MMBtu)
2024	5310	1715	Water Supply Energy Equivalent (MMBtu)
2025	5411	1747	Water Supply Energy Equivalent (MMBtu)
2026	5514	1780	Water Supply Energy Equivalent (MMBtu)
2027	5618	1814	Water Supply Energy Equivalent (MMBtu)
2028	5725	1849	Water Supply Energy Equivalent (MMBtu)
2029	5834	1884	Water Supply Energy Equivalent (MMBtu)
2030	5945	1920	Water Supply Energy Equivalent (MMBtu)
2031	6058	1956	Water Supply Energy Equivalent (MMBtu)
2032	6173	1993	Water Supply Energy Equivalent (MMBtu)
2033	6290	2031	Water Supply Energy Equivalent (MMBtu)
2034	6410	2070	Water Supply Energy Equivalent (MMBtu)
2035	6621	2138	Water Supply Energy Equivalent (MMBtu)
2036	6840	2209	Water Supply Energy Equivalent (MMBtu)
2037	7065	2281	Water Supply Energy Equivalent (MMBtu)
2038	7298	2357	Water Supply Energy Equivalent (MMBtu)
2039	7539	2435	Water Supply Energy Equivalent (MMBtu)
2040	7788	2515	Water Supply Energy Equivalent (MMBtu)
2041	8045	2598	Water Supply Energy Equivalent (MMBtu)
2042	8311	2684	Water Supply Energy Equivalent (MMBtu)
2043	8585	2772	Water Supply Energy Equivalent (MMBtu)
2044	8868	2864	Water Supply Energy Equivalent (MMBtu)
2045	9161	2958	Water Supply Energy Equivalent (MMBtu)
2046	9463	3056	Water Supply Energy Equivalent (MMBtu)
2047	9775	3157	Water Supply Energy Equivalent (MMBtu)
2048	10098	3261	Water Supply Energy Equivalent (MMBtu)
2049	10431	3368	Water Supply Energy Equivalent (MMBtu)
2017			Daily N Load at Facility with Release to Environment (kg N/day)

Year	Usage	CO2e	Output Name
2017	1016196	64410	Electricity Energy Equivalent (MMBtu)
2018	1023309	64861	Electricity Energy Equivalent (MMBtu)
2019	1030472	65315	Electricity Energy Equivalent (MMBtu)
2020	1050051	66556	Electricity Energy Equivalent (MMBtu)
2021	1070002	67821	Electricity Energy Equivalent (MMBtu)
2022	1090332	69109	Electricity Energy Equivalent (MMBtu)
2023	1111049	70422	Electricity Energy Equivalent (MMBtu)
2024	1132159	71760	Electricity Energy Equivalent (MMBtu)
2025	1153670	73124	Electricity Energy Equivalent (MMBtu)
2026	1175589	74513	Electricity Energy Equivalent (MMBtu)
2027	1197926	75929	Electricity Energy Equivalent (MMBtu)
2028	1220686	77372	Electricity Energy Equivalent (MMBtu)
2029	1243879	78842	Electricity Energy Equivalent (MMBtu)
2030	1267513	80340	Electricity Energy Equivalent (MMBtu)
2031	1291596	81866	Electricity Energy Equivalent (MMBtu)
2032	1316136	83422	Electricity Energy Equivalent (MMBtu)
2033	1341143	85007	Electricity Energy Equivalent (MMBtu)
2034	1366624	86622	Electricity Energy Equivalent (MMBtu)
2035	1411723	89480	Electricity Energy Equivalent (MMBtu)
2036	1458310	92433	Electricity Energy Equivalent (MMBtu)
2037	1506434	95483	Electricity Energy Equivalent (MMBtu)
2038	1556146	98634	Electricity Energy Equivalent (MMBtu)
2039	1607499	101889	Electricity Energy Equivalent (MMBtu)
2040	1660547	105252	Electricity Energy Equivalent (MMBtu)
2041	1715345	108725	Electricity Energy Equivalent (MMBtu)
2042	1771951	112313	Electricity Energy Equivalent (MMBtu)
2043	1830425	116019	Electricity Energy Equivalent (MMBtu)
2044	1890830	119848	Electricity Energy Equivalent (MMBtu)
2045	1953227	123803	Electricity Energy Equivalent (MMBtu)
2046	2017683	127888	Electricity Energy Equivalent (MMBtu)
2047	2084267	132109	Electricity Energy Equivalent (MMBtu)
2048	2153048	136468	Electricity Energy Equivalent (MMBtu)
2049	2224098	140972	Electricity Energy Equivalent (MMBtu)
2017	478726	20374	Natural Gas - Energy Equivalent (MMBtu)
2018	482077	20516	Natural Gas - Energy Equivalent (MMBtu)
2019	485451	20660	Natural Gas - Energy Equivalent (MMBtu)
2020	494675	21052	Natural Gas - Energy Equivalent (MMBtu)
2021	504074	21452	Natural Gas - Energy Equivalent (MMBtu)
2022	513651	21860	Natural Gas - Energy Equivalent (MMBtu)
2023	523411	22275	Natural Gas - Energy Equivalent (MMBtu)
2024	533355	22699	Natural Gas - Energy Equivalent (MMBtu)
2025	543489	23130	Natural Gas - Energy Equivalent (MMBtu)
2026	553815	23569	Natural Gas - Energy Equivalent (MMBtu)
2027	564338	24017	Natural Gas - Energy Equivalent (MMBtu)
2028	575060	24473	Natural Gas - Energy Equivalent (MMBtu)
2029	585986	24938	Natural Gas - Energy Equivalent (MMBtu)

2030	597120	25412	Natural Gas - Energy Equivalent (MMBtu)
2031	608466	25895	Natural Gas - Energy Equivalent (MMBtu)
2032	620026	26387	Natural Gas - Energy Equivalent (MMBtu)
2033	631807	26888	Natural Gas - Energy Equivalent (MMBtu)
2034	643811	27399	Natural Gas - Energy Equivalent (MMBtu)
2035	665057	28304	Natural Gas - Energy Equivalent (MMBtu)
2036	687004	29238	Natural Gas - Energy Equivalent (MMBtu)
2037	709675	30202	Natural Gas - Energy Equivalent (MMBtu)
2038	733094	31199	Natural Gas - Energy Equivalent (MMBtu)
2039	757286	32229	Natural Gas - Energy Equivalent (MMBtu)
2040	782277	33292	Natural Gas - Energy Equivalent (MMBtu)
2041	808092	34391	Natural Gas - Energy Equivalent (MMBtu)
2042	834759	35526	Natural Gas - Energy Equivalent (MMBtu)
2043	862306	36698	Natural Gas - Energy Equivalent (MMBtu)
2044	890762	37909	Natural Gas - Energy Equivalent (MMBtu)
2045	920157	39160	Natural Gas - Energy Equivalent (MMBtu)
2046	950522	40452	Natural Gas - Energy Equivalent (MMBtu)
2047	981890	41787	Natural Gas - Energy Equivalent (MMBtu)
2048	1014292	43166	Natural Gas - Energy Equivalent (MMBtu)
2049	1047764	44591	Natural Gas - Energy Equivalent (MMBtu)
2017			LPG - Energy Equivalent (MMBtu)
2017			Propane - Energy Equivalent (MMBtu)
2017			Butane - Energy Equivalent (MMBtu)
2017			Kerosene - Energy Equivalent (MMBtu)
2017			Gasoline - Energy Equivalent (MMBtu)
2017			Distillate Fuel Oil No. 2 - Energy Equivalent (MMBtu)
2017			Residual Fuel Oil No. 5 - Energy Equivalent (MMBtu)
2017			Residual Fuel Oil No. 6 - Energy Equivalent (MMBtu)
2017			Wood - Energy Equivalent (MMBtu)

Year	Usage	CO2e	Output Name
2017			Aviation Energy (MMBtu)
2017			Energy Equivalent (MMBtu)
2017			Ships and Boats - Off Road Fuel Use
2017			Locomotives - Off Road Fuel Use
2017			Agricultural - Off Road Fuel Use
2017			Construction - Off Road Fuel Use
2017	1	9960	Snowmobiles and Recreational - Off Road Fuel Use
2018	1	10030	Snowmobiles and Recreational - Off Road Fuel Use
2019	1	10100	Snowmobiles and Recreational - Off Road Fuel Use
2020	1	10292	Snowmobiles and Recreational - Off Road Fuel Use
2021	1	10487	Snowmobiles and Recreational - Off Road Fuel Use
2022	1	10687	Snowmobiles and Recreational - Off Road Fuel Use
2023	1	10890	Snowmobiles and Recreational - Off Road Fuel Use
2024	1	11097	Snowmobiles and Recreational - Off Road Fuel Use
2025	1	11307	Snowmobiles and Recreational - Off Road Fuel Use
2026	1	11522	Snowmobiles and Recreational - Off Road Fuel Use
2027	1	11741	Snowmobiles and Recreational - Off Road Fuel Use
2028	1	11964	Snowmobiles and Recreational - Off Road Fuel Use
2029	1	12192	Snowmobiles and Recreational - Off Road Fuel Use
2030	1	12423	Snowmobiles and Recreational - Off Road Fuel Use
2031	1	12659	Snowmobiles and Recreational - Off Road Fuel Use
2032	1	12900	Snowmobiles and Recreational - Off Road Fuel Use
2033	1	13145	Snowmobiles and Recreational - Off Road Fuel Use
2034	1	13395	Snowmobiles and Recreational - Off Road Fuel Use
2035	1	13837	Snowmobiles and Recreational - Off Road Fuel Use
2036	1	14293	Snowmobiles and Recreational - Off Road Fuel Use
2037	1	14765	Snowmobiles and Recreational - Off Road Fuel Use
2038	2	15252	Snowmobiles and Recreational - Off Road Fuel Use
2039	2	15756	Snowmobiles and Recreational - Off Road Fuel Use
2040	2	16275	Snowmobiles and Recreational - Off Road Fuel Use
2041	2	16813	Snowmobiles and Recreational - Off Road Fuel Use
2042	2	17367	Snowmobiles and Recreational - Off Road Fuel Use
2043	2	17940	Snowmobiles and Recreational - Off Road Fuel Use
2044	2	18533	Snowmobiles and Recreational - Off Road Fuel Use
2045	2	19144	Snowmobiles and Recreational - Off Road Fuel Use
2046	2	19776	Snowmobiles and Recreational - Off Road Fuel Use
2047	2	20428	Snowmobiles and Recreational - Off Road Fuel Use
2048	2	21103	Snowmobiles and Recreational - Off Road Fuel Use
2049	2	21799	Snowmobiles and Recreational - Off Road Fuel Use
2017			Small Utility - Off Road Fuel Use
2017			Large Utility - Off Road Fuel Use
2017			Aircraft - Off Road Fuel Use
2017	1.51E+08	59572	Gasoline - On Road VMT
2018	1.52E+08	59989	Gasoline - On Road VMT
2019	1.53E+08	60409	Gasoline - On Road VMT
2020	1.56E+08	61556	Gasoline - On Road VMT

2021	1.59E+08	62726	Gasoline - On Road VMT
2022	1.62E+08	63918	Gasoline - On Road VMT
2023	1.65E+08	65132	Gasoline - On Road VMT
2024	1.68E+08	66370	Gasoline - On Road VMT
2025	1.71E+08	67631	Gasoline - On Road VMT
2026	1.74E+08	68916	Gasoline - On Road VMT
2027	1.77E+08	70225	Gasoline - On Road VMT
2028	1.81E+08	71559	Gasoline - On Road VMT
2029	1.84E+08	72919	Gasoline - On Road VMT
2030	1.88E+08	74304	Gasoline - On Road VMT
2031	1.91E+08	75716	Gasoline - On Road VMT
2032	1.95E+08	77155	Gasoline - On Road VMT
2033	1.99E+08	78621	Gasoline - On Road VMT
2034	2.02E+08	80115	Gasoline - On Road VMT
2035	2.09E+08	82758	Gasoline - On Road VMT
2036	2.16E+08	85489	Gasoline - On Road VMT
2037	2.23E+08	88310	Gasoline - On Road VMT
2038	2.31E+08	91225	Gasoline - On Road VMT
2039	2.38E+08	94235	Gasoline - On Road VMT
2040	2.46E+08	97345	Gasoline - On Road VMT
2041	2.54E+08	100557	Gasoline - On Road VMT
2042	2.63E+08	103876	Gasoline - On Road VMT
2043	2.71E+08	107304	Gasoline - On Road VMT
2044	2.8E+08	110845	Gasoline - On Road VMT
2045	2.89E+08	114502	Gasoline - On Road VMT
2046	2.99E+08	118281	Gasoline - On Road VMT
2047	3.09E+08	122184	Gasoline - On Road VMT
2048	3.19E+08	126216	Gasoline - On Road VMT
2049	3.3E+08	130382	Gasoline - On Road VMT
2017	1.51E+08	15555	Diesel - On Road VMT
2018	1.52E+08	15664	Diesel - On Road VMT
2019	1.53E+08	15773	Diesel - On Road VMT
2020	1.56E+08	16073	Diesel - On Road VMT
2021	1.59E+08	16379	Diesel - On Road VMT
2022	1.62E+08	16690	Diesel - On Road VMT
2023	1.65E+08	17007	Diesel - On Road VMT
2024	1.68E+08	17330	Diesel - On Road VMT
2025	1.71E+08	17659	Diesel - On Road VMT
2026	1.74E+08	17995	Diesel - On Road VMT
2027	1.77E+08	18337	Diesel - On Road VMT
2028	1.81E+08	18685	Diesel - On Road VMT
2029	1.84E+08	19040	Diesel - On Road VMT
2030	1.88E+08	19402	Diesel - On Road VMT
2031	1.91E+08	19771	Diesel - On Road VMT
2032	1.95E+08	20146	Diesel - On Road VMT
2033	1.99E+08	20529	Diesel - On Road VMT
2034	2.02E+08	20919	Diesel - On Road VMT

2035	2.09E+08	21609	Diesel - On Road VMT
2036	2.16E+08	22322	Diesel - On Road VMT
2037	2.23E+08	23059	Diesel - On Road VMT
2038	2.31E+08	23820	Diesel - On Road VMT
2039	2.38E+08	24606	Diesel - On Road VMT
2040	2.46E+08	25418	Diesel - On Road VMT
2041	2.54E+08	26257	Diesel - On Road VMT
2042	2.63E+08	27123	Diesel - On Road VMT
2043	2.71E+08	28018	Diesel - On Road VMT
2044	2.8E+08	28943	Diesel - On Road VMT
2045	2.89E+08	29898	Diesel - On Road VMT
2046	2.99E+08	30885	Diesel - On Road VMT
2047	3.09E+08	31904	Diesel - On Road VMT
2048	3.19E+08	32957	Diesel - On Road VMT
2049	3.3E+08	34044	Diesel - On Road VMT
2017			Biodiesel - On Road VMT
2017			Ethanol - On Road VMT
2017			CNG - On Road VMT
2017			LPG - On Road VMT
2017			LNG - On Road VMT
2017			Methanol - On Road VMT
2017			Electric - On Road VMT
2017			Diesel - Transit VMT
2017			Gasoline - Transit VMT
2017			CNG - Transit VMT
2017			LNG - Transit VMT
2017			LPG - Transit VMT
2017			Methanol - Transit VMT
2017			Ethanol - Transit VMT
2017			Biodiesel - Transit VMT
2017			Electricity - Transit VMT
2017			Diesel - Waterborne Energy (MMBtu)
2017			Gasoline - Waterborne Energy (MMBtu)
2017			Residual Fuel Oil - Waterborne Energy (MMBtu)
2017			Electricity - Waterborne Energy (MMBtu)

Year	Usage	CO2e	Output Name
2017			Annual Gas Combusted (scf / Year)
2017			Annual Landfill Gas Flared (scf / year)
2017			In-Boundary Energy From Solid Waste (MMBtu)
2017			Biogenic CO2 Emissions Factor Units
2017			Landfill Direct Emissions CH4 (MT)
2017			Collection Emissions - Total Waste Collected and/or Transported (wet tons)
2017			Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2017	21066	342	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2018	21214	344	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2019	21362	347	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2020	21768	353	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2021	22181	360	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2022	22603	367	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2023	23032	374	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2024	23470	381	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2025	23916	388	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2026	24370	396	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2027	24833	403	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2028	25305	411	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2029	25786	419	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2030	26276	427	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2031	26775	435	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2032	27284	443	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2033	27802	451	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2034	28331	460	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2035	29265	475	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2036	30231	491	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2037	31229	507	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2038	32259	524	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2039	33324	541	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2040	34424	559	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2041	35560	577	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2042	36733	596	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2043	37945	616	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2044	39198	636	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2045	40491	657	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2046	41827	679	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2047	43208	701	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2048	44633	725	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2049	46106	748	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2017			Total Waste Processed (wet tons)
2017			Green Waste - Waste Composted (tons)
2017			Biowaste - Waste Composted (tons)
2017	21066	3720	Waste Generated (wet tons)
2018	21214	3746	Waste Generated (wet tons)
2019	21362	3772	Waste Generated (wet tons)
2020	21768	3844	Waste Generated (wet tons)
2021	22181	3917	Waste Generated (wet tons)
2022	22603	3991	Waste Generated (wet tons)
2023	23032	4067	Waste Generated (wet tons)
2024	23470	4144	Waste Generated (wet tons)
2025	23916	4223	Waste Generated (wet tons)
2026	24370	4303	Waste Generated (wet tons)
2027	24833	4385	Waste Generated (wet tons)
2028	25305	4468	Waste Generated (wet tons)
2029	25786	4553	Waste Generated (wet tons)

2030	26276	4640	Waste Generated (wet tons)
2031	26775	4728	Waste Generated (wet tons)
2032	27284	4818	Waste Generated (wet tons)
2033	27802	4909	Waste Generated (wet tons)
2034	28331	5003	Waste Generated (wet tons)
2035	29265	5168	Waste Generated (wet tons)
2036	30231	5338	Waste Generated (wet tons)
2037	31229	5514	Waste Generated (wet tons)
2038	32259	5696	Waste Generated (wet tons)
2039	33324	5884	Waste Generated (wet tons)
2040	34424	6079	Waste Generated (wet tons)
2041	35560	6279	Waste Generated (wet tons)
2042	36733	6486	Waste Generated (wet tons)
2043	37945	6700	Waste Generated (wet tons)
2044	39198	6921	Waste Generated (wet tons)
2045	40491	7150	Waste Generated (wet tons)
2046	41827	7386	Waste Generated (wet tons)
2047	43208	7630	Waste Generated (wet tons)
2048	44633	7881	Waste Generated (wet tons)
2049	46106	8141	Waste Generated (wet tons)

City of Galt
State Program Forecast

Galt CAP
State Program Forecast

	Community Inventory										Municipal Inventory											
Year	Energy	Natural Gas	Transportation Gasoline	Transportation Diesel	Off-Road Vehicle Emissions	Waste Collection and Transportation Emissions	Water	Waste Generated	Process & Fugitive Emissions	Agriculture	Electricity	T&D Energy	Streetlight and Traffic Signals Electricity	Streetlight and Traffic Signals T&D Energy	Fleet - Gasoline	Fleet-Diesel	Transit Fleet - Gasoline	Transit Fleet - Diesel	Daily Lagoon BOD5	Process N2O Population Served	Daily N Load at Facility	Total Emissions
2017	64610	20374	58669	15398	10030	337	1482	3784	9703	239	1366	112	279	23	390	18	348	123	5846	65	59	193255
2018	62200	20516	57780	15242	10100	332	1426	3811	9771	239	1315	108	269	22	386	18	256	93	5887	66	59	189896
2019	59879	20660	56904	15088	10171	327	1373	3838	9840	239	1266	104	258	22	382	18	188	70	5928	66	59	186680
2020	58332	21052	56478	15067	10364	324	1338	3911	10027	239	1234	101	252	21	381	18	139	54	6041	67	61	185501
2021	56825	21452	56055	15046	10561	322	1303	3985	10217	239	1202	99	245	20	381	18	104	41	6156	69	62	184402
2022	55357	21860	55634	15025	10761	319	1269	4061	10411	239	1171	96	239	20	380	18	77	32	6273	70	63	183375
2023	53927	22275	55218	15004	10966	317	1237	4138	10609	239	1141	94	233	19	380	18	57	24	6392	71	64	182423
2024	52533	22699	54804	14984	11174	315	1205	4216	10811	239	1111	91	227	19	379	18	42	19	6513	73	65	181537
2025	51176	23130	54561	14994	11387	313	1174	4296	11016	239	1082	89	221	18	379	18	32	14	6637	74	67	180917
2026	49854	23569	54318	15003	11603	312	1143	4378	11225	239	1054	87	215	18	380	18	23	11	6763	75	68	180356
2027	48566	24017	54077	15013	11823	310	1114	4461	11439	239	1027	84	210	18	380	18	17	8	6892	77	69	179859
2028	47311	24473	53838	15023	12048	309	1085	4546	11656	239	1001	82	204	17	380	18	13	6	7023	78	70	179420
2029	46089	24938	53599	15033	12277	308	1057	4632	11878	239	975	80	199	17	380	18	10	5	7156	80	72	179042
2030	38699	25412	53798	15135	12510	309	887	4720	12103	239	818	67	167	14	383	18	7	4	7292	81	73	172736
2031	32494	25895	53998	15237	12748	310	745	4810	12333	239	687	56	140	12	386	18	5	3	7431	83	75	167705
2032	27284	26387	54198	15341	12990	311	626	4901	12568	239	577	47	118	10	388	18	4	2	7572	85	76	163742
2033	22909	26888	54400	15444	13237	312	525	4995	12806	239	485	40	99	8	391	18	3	2	7716	86	77	160680
2034	19235	27399	54602	15549	13488	313	441	5089	13050	239	407	33	83	7	394	19	2	1	7862	88	79	158380
2035	16373	28304	55952	15966	13934	321	375	5257	13480	239	346	28	71	6	404	19	2	1	8122	91	81	159372
2036	13937	29238	57336	16394	14393	329	320	5431	13925	239	295	24	60	5	415	20	1	1	8390	94	84	160931
2037	11863	30202	58755	16833	14868	337	272	5610	14385	239	251	21	51	4	426	20	1	1	8667	97	87	162990
2038	10097	31199	60208	17284	15359	346	232	5795	14859	239	214	18	44	4	437	21	1	0	8953	100	90	165500
2039	8595	32229	61697	17747	15866	354	197	5987	15350	239	182	15	37	3	449	21	1	0	9248	103	93	168413
2040	7316	33292	63542	18296	16389	365	168	6184	15856	239	155	13	32	3	463	22	0	0	9553	107	96	172091
2041	6227	34391	65442	18862	16930	376	143	6388	16379	239	132	11	27	2	477	23	0	0	9869	110	99	176127
2042	5301	35526	67399	19446	17489	387	122	6599	16920	239	112	9	23	2	492	23	0	0	10194	114	102	180499
2043	4512	36698	69414	20047	18066	398	103	6817	17478	239	95	8	19	2	507	24	0	0	10531	118	106	185182
2044	3840	37909	71490	20668	18662	410	88	7042	18055	239	81	7	17	1	523	25	0	0	10878	121	109	190165
2045	4	39160	73775	21328	19278	424	0	7274	18651	239	0	0	0	0	540	25	0	0	11237	125	113	192173
2046	0	40452	76133	22010	19914	437	0	7514	19266	239	0	0	0	0	557	26	0	0	11608	130	116	198402
2047	0	41787	78567	22714	20571	451	0	7762	19902	239	0	0	0	0	575	27	0	0	11991	134	120	204840
2048	0	43166	81079	23440	21250	465	0	8018	20559	239	0	0	0	0	593	28	0	0	12387	138	124	211486
2049	0	44591	83671	24189	21952	480	0	8283	21237	239	0	0	0	0	612	29	0	0	12796	143	128	218350
2050	0	46063	86432	24987	22676	496	0	8556	21938	239	0	0	0	0	632	30	0	0	13218	148	132	225548

Year	Estimated Population	Annual Emissions	Per Capita Emissions
2016	24848	196877	7.92
2017	25021.936	193255	7.72
2018	25197.08955	189896	7.54
2019	26269.92	186680	7.11
2020	26769.04848	185501	6.93
2021	27277.6604	184402	6.76
2022	27795.93595	183375	6.60
2023	28324.05873	182423	6.44
2024	28862.21585	181537	6.29
2025	29410.59795	180917	6.15
2026	29969.39931	180356	6.02
2027	30538.8179	179859	5.89
2028	31119.05544	179420	5.77
2029	31710.31749	179042	5.65
2030	32108	172736	5.38
2031	32718.052	167705	5.13
2032	33339.69499	163742	4.91
2033	33973.14919	160680	4.73
2034	34618.63903	158380	4.57
2035	35276.39317	159372	4.52
2036	35946.64464	160931	4.48
2037	37132.88391	162990	4.39
2038	38358.26908	165500	4.31
2039	39624.09196	168413	4.25
2040	40931.687	172091	4.20
2041	42282.43267	176127	4.17
2042	43677.75294	180499	4.13
2043	45119.11879	185182	4.10
2044	46608.04971	190165	4.08
2045	48146.11535	192173	3.99
2046	49734.93716	198402	3.99
2047	51376.19009	204840	3.99
2048	53071.60436	211486	3.98
2049	54822.9673	218350	3.98
2050	56090	225547.663	4.02

Year	Usage	CO2e	Output Name
2016			Annual Gas Combusted (scf / Year)
2016			Annual Landfill Gas Flared (scf / year)
2016			In-Boundary Energy From Solid Waste (MMBtu)
2016			Biogenic CO2 Emissions Factor Units
2016			Landfill Direct Emissions CH4 (MT)
2016			Collection Emissions - Total Waste Collected and/or Transported (wet tons)
2016			Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2016	21066	342	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2017	21214	337	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2018	21362	332	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2019	21512	327	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2020	21920	324	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2021	22337	322	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2022	22761	319	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2023	23194	317	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2024	23634	315	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2025	24083	313	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2026	24541	312	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2027	25007	310	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2028	25482	309	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2029	25967	308	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2030	26460	309	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2031	26963	310	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2032	27475	311	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2033	27997	312	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2034	28529	313	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2035	29470	321	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2036	30443	329	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2037	31447	337	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2038	32485	346	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2039	33557	354	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2040	34665	365	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2041	35809	376	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2042	36990	387	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2043	38211	398	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2044	39472	410	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2045	40774	424	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2046	42120	437	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2047	43510	451	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2048	44946	465	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2049	46429	480	Collection and Transportation Emissions - Total Waste Collected and/or Transported (wet tons)
2016			Total Waste Processed (wet tons)
2016			Green Waste - Waste Composted (tons)
2016			Biowaste - Waste Composted (tons)
2016	21066	3758	Waste Generated (wet tons)
2017	21214	3784	Waste Generated (wet tons)
2018	21362	3811	Waste Generated (wet tons)
2019	21512	3838	Waste Generated (wet tons)
2020	21920	3911	Waste Generated (wet tons)
2021	22337	3985	Waste Generated (wet tons)
2022	22761	4061	Waste Generated (wet tons)
2023	23194	4138	Waste Generated (wet tons)
2024	23634	4216	Waste Generated (wet tons)
2025	24083	4296	Waste Generated (wet tons)
2026	24541	4378	Waste Generated (wet tons)
2027	25007	4461	Waste Generated (wet tons)

2028	25482	4546	Waste Generated (wet tons)
2029	25967	4632	Waste Generated (wet tons)
2030	26460	4720	Waste Generated (wet tons)
2031	26963	4810	Waste Generated (wet tons)
2032	27475	4901	Waste Generated (wet tons)
2033	27997	4995	Waste Generated (wet tons)
2034	28529	5089	Waste Generated (wet tons)
2035	29470	5257	Waste Generated (wet tons)
2036	30443	5431	Waste Generated (wet tons)
2037	31447	5610	Waste Generated (wet tons)
2038	32485	5795	Waste Generated (wet tons)
2039	33557	5987	Waste Generated (wet tons)
2040	34665	6184	Waste Generated (wet tons)
2041	35809	6388	Waste Generated (wet tons)
2042	36990	6599	Waste Generated (wet tons)
2043	38211	6817	Waste Generated (wet tons)
2044	39472	7042	Waste Generated (wet tons)
2045	40774	7274	Waste Generated (wet tons)
2046	42120	7514	Waste Generated (wet tons)
2047	43510	7762	Waste Generated (wet tons)
2048	44946	8018	Waste Generated (wet tons)
2049	46429	8283	Waste Generated (wet tons)

Year	Usage	CO2e	Output Name
2016			Absorption Chiller - Cooling Demand (MMBtu)
2016			Engine-Driven Compressor - Cooling Demand (MMBtu)
2016			Electric-Driven Compressor - Cooling Demand (MMBtu)
2016			Other - Cooling Demand (MMBtu)
2016			Natural Gas - District Heat Energy Consumption (MMBtu)
2016			Anthracite Coal - District Heat Energy Consumption (MMBtu)
2016			Bituminous Coal - District Heat Energy Consumption (MMBtu)
2016			Subbituminous Coal - District Heat Energy Consumption (MMBtu)
2016			Lignite Coal - District Heat Energy Consumption (MMBtu)
2016			Distillate Fuel Oil No 1 - District Heat Energy Consumption (MMBtu)
2016			Distillate Fuel Oil No 2 - District Heat Energy Consumption (MMBtu)
2016			Distillate Fuel Oil No 4 - District Heat Energy Consumption (MMBtu)
2016			Residual Fuel Oil No 5 - District Heat Energy Consumption (MMBtu)
2016			Residual Fuel Oil No 6 - District Heat Energy Consumption (MMBtu)
2016			Other - District Heat Energy Consumption (MMBtu)
2016	22394	1419	Electricity Energy Equivalent (MMBtu)
2017	22551	1366	Electricity Energy Equivalent (MMBtu)
2018	22709	1315	Electricity Energy Equivalent (MMBtu)
2019	22868	1266	Electricity Energy Equivalent (MMBtu)
2020	23302	1234	Electricity Energy Equivalent (MMBtu)
2021	23745	1202	Electricity Energy Equivalent (MMBtu)
2022	24196	1171	Electricity Energy Equivalent (MMBtu)
2023	24656	1141	Electricity Energy Equivalent (MMBtu)
2024	25125	1111	Electricity Energy Equivalent (MMBtu)
2025	25602	1082	Electricity Energy Equivalent (MMBtu)
2026	26088	1054	Electricity Energy Equivalent (MMBtu)
2027	26584	1027	Electricity Energy Equivalent (MMBtu)
2028	27089	1001	Electricity Energy Equivalent (MMBtu)
2029	27604	975	Electricity Energy Equivalent (MMBtu)
2030	28128	818	Electricity Energy Equivalent (MMBtu)
2031	28663	687	Electricity Energy Equivalent (MMBtu)
2032	29207	577	Electricity Energy Equivalent (MMBtu)
2033	29762	485	Electricity Energy Equivalent (MMBtu)
2034	30328	407	Electricity Energy Equivalent (MMBtu)
2035	31329	346	Electricity Energy Equivalent (MMBtu)
2036	32362	295	Electricity Energy Equivalent (MMBtu)
2037	33430	251	Electricity Energy Equivalent (MMBtu)
2038	34534	214	Electricity Energy Equivalent (MMBtu)
2039	35673	182	Electricity Energy Equivalent (MMBtu)
2040	36850	155	Electricity Energy Equivalent (MMBtu)
2041	38066	132	Electricity Energy Equivalent (MMBtu)
2042	39323	112	Electricity Energy Equivalent (MMBtu)
2043	40620	95	Electricity Energy Equivalent (MMBtu)
2044	41961	81	Electricity Energy Equivalent (MMBtu)
2045	43345	0	Electricity Energy Equivalent (MMBtu)
2046	44776	0	Electricity Energy Equivalent (MMBtu)

2047	46253	0	Electricity Energy Equivalent (MMBtu)
2048	47780	0	Electricity Energy Equivalent (MMBtu)
2049	49357	0	Electricity Energy Equivalent (MMBtu)
2016			Natural Gas - Energy Equivalent (MMBtu)
2016			LPG - Energy Equivalent (MMBtu)
2016			Propane - Energy Equivalent (MMBtu)
2016			Butane - Energy Equivalent (MMBtu)
2016			Kerosene - Energy Equivalent (MMBtu)
2016			Gasoline - Energy Equivalent (MMBtu)
2016			Distillate Fuel Oil No. 2 - Energy Equivalent (MMBtu)
2016			Residual Fuel Oil No. 5 - Energy Equivalent (MMBtu)
2016			Residual Fuel Oil No. 6 - Energy Equivalent (MMBtu)
2016			Electricity - Purchased CHP Energy (MMBtu)
2016			Heat - Purchased CHP Energy (MMBtu)
2016	1837	116	T&D Energy Equivalent (MMBtu)
2017	1850	112	T&D Energy Equivalent (MMBtu)
2018	1863	108	T&D Energy Equivalent (MMBtu)
2019	1876	104	T&D Energy Equivalent (MMBtu)
2020	1912	101	T&D Energy Equivalent (MMBtu)
2021	1948	99	T&D Energy Equivalent (MMBtu)
2022	1985	96	T&D Energy Equivalent (MMBtu)
2023	2023	94	T&D Energy Equivalent (MMBtu)
2024	2061	91	T&D Energy Equivalent (MMBtu)
2025	2101	89	T&D Energy Equivalent (MMBtu)
2026	2140	87	T&D Energy Equivalent (MMBtu)
2027	2181	84	T&D Energy Equivalent (MMBtu)
2028	2223	82	T&D Energy Equivalent (MMBtu)
2029	2265	80	T&D Energy Equivalent (MMBtu)
2030	2308	67	T&D Energy Equivalent (MMBtu)
2031	2352	56	T&D Energy Equivalent (MMBtu)
2032	2396	47	T&D Energy Equivalent (MMBtu)
2033	2442	40	T&D Energy Equivalent (MMBtu)
2034	2488	33	T&D Energy Equivalent (MMBtu)
2035	2570	28	T&D Energy Equivalent (MMBtu)
2036	2655	24	T&D Energy Equivalent (MMBtu)
2037	2743	21	T&D Energy Equivalent (MMBtu)
2038	2833	18	T&D Energy Equivalent (MMBtu)
2039	2927	15	T&D Energy Equivalent (MMBtu)
2040	3023	13	T&D Energy Equivalent (MMBtu)
2041	3123	11	T&D Energy Equivalent (MMBtu)
2042	3226	9	T&D Energy Equivalent (MMBtu)
2043	3333	8	T&D Energy Equivalent (MMBtu)
2044	3443	7	T&D Energy Equivalent (MMBtu)
2045	3556	0	T&D Energy Equivalent (MMBtu)
2046	3674	0	T&D Energy Equivalent (MMBtu)
2047	3795	0	T&D Energy Equivalent (MMBtu)
2048	3920	0	T&D Energy Equivalent (MMBtu)

2049	4050	0	T&D Energy Equivalent (MMBtu)

Year	Usage	CO2e	Output Name
2016	470612	394	Gasoline - Fleet Vehicle VMT
2017	473907	390	Gasoline - Fleet Vehicle VMT
2018	477224	386	Gasoline - Fleet Vehicle VMT
2019	480564	382	Gasoline - Fleet Vehicle VMT
2020	489695	381	Gasoline - Fleet Vehicle VMT
2021	498999	381	Gasoline - Fleet Vehicle VMT
2022	508480	380	Gasoline - Fleet Vehicle VMT
2023	518142	380	Gasoline - Fleet Vehicle VMT
2024	527986	379	Gasoline - Fleet Vehicle VMT
2025	538018	379	Gasoline - Fleet Vehicle VMT
2026	548240	380	Gasoline - Fleet Vehicle VMT
2027	558657	380	Gasoline - Fleet Vehicle VMT
2028	569271	380	Gasoline - Fleet Vehicle VMT
2029	580088	380	Gasoline - Fleet Vehicle VMT
2030	591109	383	Gasoline - Fleet Vehicle VMT
2031	602340	386	Gasoline - Fleet Vehicle VMT
2032	613785	388	Gasoline - Fleet Vehicle VMT
2033	625447	391	Gasoline - Fleet Vehicle VMT
2034	637330	394	Gasoline - Fleet Vehicle VMT
2035	658362	404	Gasoline - Fleet Vehicle VMT
2036	680088	415	Gasoline - Fleet Vehicle VMT
2037	702531	426	Gasoline - Fleet Vehicle VMT
2038	725714	437	Gasoline - Fleet Vehicle VMT
2039	749663	449	Gasoline - Fleet Vehicle VMT
2040	774402	463	Gasoline - Fleet Vehicle VMT
2041	799957	477	Gasoline - Fleet Vehicle VMT
2042	826356	492	Gasoline - Fleet Vehicle VMT
2043	853625	507	Gasoline - Fleet Vehicle VMT
2044	881795	523	Gasoline - Fleet Vehicle VMT
2045	910894	540	Gasoline - Fleet Vehicle VMT
2046	940954	557	Gasoline - Fleet Vehicle VMT
2047	972005	575	Gasoline - Fleet Vehicle VMT
2048	1004081	593	Gasoline - Fleet Vehicle VMT
2049	1037216	612	Gasoline - Fleet Vehicle VMT
2016	20623	19	Diesel - Fleet Vehicle VMT
2017	20767	18	Diesel - Fleet Vehicle VMT
2018	20913	18	Diesel - Fleet Vehicle VMT
2019	21059	18	Diesel - Fleet Vehicle VMT
2020	21459	18	Diesel - Fleet Vehicle VMT
2021	21867	18	Diesel - Fleet Vehicle VMT
2022	22282	18	Diesel - Fleet Vehicle VMT
2023	22706	18	Diesel - Fleet Vehicle VMT
2024	23137	18	Diesel - Fleet Vehicle VMT
2025	23577	18	Diesel - Fleet Vehicle VMT
2026	24025	18	Diesel - Fleet Vehicle VMT
2027	24481	18	Diesel - Fleet Vehicle VMT

2028	24946	18	Diesel - Fleet Vehicle VMT
2029	25420	18	Diesel - Fleet Vehicle VMT
2030	25903	18	Diesel - Fleet Vehicle VMT
2031	26396	18	Diesel - Fleet Vehicle VMT
2032	26897	18	Diesel - Fleet Vehicle VMT
2033	27408	18	Diesel - Fleet Vehicle VMT
2034	27929	19	Diesel - Fleet Vehicle VMT
2035	28850	19	Diesel - Fleet Vehicle VMT
2036	29803	20	Diesel - Fleet Vehicle VMT
2037	30786	20	Diesel - Fleet Vehicle VMT
2038	31802	21	Diesel - Fleet Vehicle VMT
2039	32851	21	Diesel - Fleet Vehicle VMT
2040	33936	22	Diesel - Fleet Vehicle VMT
2041	35055	23	Diesel - Fleet Vehicle VMT
2042	36212	23	Diesel - Fleet Vehicle VMT
2043	37407	24	Diesel - Fleet Vehicle VMT
2044	38642	25	Diesel - Fleet Vehicle VMT
2045	39917	25	Diesel - Fleet Vehicle VMT
2046	41234	26	Diesel - Fleet Vehicle VMT
2047	42595	27	Diesel - Fleet Vehicle VMT
2048	44000	28	Diesel - Fleet Vehicle VMT
2049	45453	29	Diesel - Fleet Vehicle VMT
2016			CNG - Fleet Vehicle VMT
2016			LNG - Fleet Vehicle VMT
2016			LPG - Fleet Vehicle VMT
2016			Methanol - Fleet Vehicle VMT
2016			Ethanol - Fleet Vehicle VMT
2016			Biodiesel - Fleet Vehicle VMT
2016			Electricity - Fleet Vehicle VMT
2016			Ships and Boats - Off Road Fuel Use
2016			Locomotives - Off Road Fuel Use
2016			Agricultural - Off Road Fuel Use
2016			Construction - Off Road Fuel Use
2016			Snowmobiles and Recreational - Off Road Fuel Use
2016			Small Utility - Off Road Fuel Use
2016			Large Utility - Off Road Fuel Use
2016			Aircraft - Off Road Fuel Use

Year	Usage	CO2e	Output Name
2016	4571	290	Electricity Energy Equivalent (MMBTU)
2017	4603	279	Electricity Energy Equivalent (MMBTU)
2018	4635	269	Electricity Energy Equivalent (MMBTU)
2019	4668	258	Electricity Energy Equivalent (MMBTU)
2020	4756	252	Electricity Energy Equivalent (MMBTU)
2021	4847	245	Electricity Energy Equivalent (MMBTU)
2022	4939	239	Electricity Energy Equivalent (MMBTU)
2023	5033	233	Electricity Energy Equivalent (MMBTU)
2024	5128	227	Electricity Energy Equivalent (MMBTU)
2025	5226	221	Electricity Energy Equivalent (MMBTU)
2026	5325	215	Electricity Energy Equivalent (MMBTU)
2027	5426	210	Electricity Energy Equivalent (MMBTU)
2028	5529	204	Electricity Energy Equivalent (MMBTU)
2029	5634	199	Electricity Energy Equivalent (MMBTU)
2030	5741	167	Electricity Energy Equivalent (MMBTU)
2031	5850	140	Electricity Energy Equivalent (MMBTU)
2032	5962	118	Electricity Energy Equivalent (MMBTU)
2033	6075	99	Electricity Energy Equivalent (MMBTU)
2034	6190	83	Electricity Energy Equivalent (MMBTU)
2035	6395	71	Electricity Energy Equivalent (MMBTU)
2036	6606	60	Electricity Energy Equivalent (MMBTU)
2037	6824	51	Electricity Energy Equivalent (MMBTU)
2038	7049	44	Electricity Energy Equivalent (MMBTU)
2039	7281	37	Electricity Energy Equivalent (MMBTU)
2040	7522	32	Electricity Energy Equivalent (MMBTU)
2041	7770	27	Electricity Energy Equivalent (MMBTU)
2042	8026	23	Electricity Energy Equivalent (MMBTU)
2043	8291	19	Electricity Energy Equivalent (MMBTU)
2044	8565	17	Electricity Energy Equivalent (MMBTU)
2045	8847	0	Electricity Energy Equivalent (MMBTU)
2046	9139	0	Electricity Energy Equivalent (MMBTU)
2047	9441	0	Electricity Energy Equivalent (MMBTU)
2048	9752	0	Electricity Energy Equivalent (MMBTU)
2049	10074	0	Electricity Energy Equivalent (MMBTU)
2016			Natural Gas Energy Equivalent (MMBtu)
2016	382	24	T&D Energy Equivalent (MMBtu)
2017	384	23	T&D Energy Equivalent (MMBtu)
2018	387	22	T&D Energy Equivalent (MMBtu)
2019	390	22	T&D Energy Equivalent (MMBtu)
2020	397	21	T&D Energy Equivalent (MMBtu)
2021	405	20	T&D Energy Equivalent (MMBtu)
2022	412	20	T&D Energy Equivalent (MMBtu)
2023	420	19	T&D Energy Equivalent (MMBtu)
2024	428	19	T&D Energy Equivalent (MMBtu)
2025	436	18	T&D Energy Equivalent (MMBtu)
2026	445	18	T&D Energy Equivalent (MMBtu)

2027	453	18	T&D Energy Equivalent (MMBtu)
2028	462	17	T&D Energy Equivalent (MMBtu)
2029	471	17	T&D Energy Equivalent (MMBtu)
2030	479	14	T&D Energy Equivalent (MMBtu)
2031	489	12	T&D Energy Equivalent (MMBtu)
2032	498	10	T&D Energy Equivalent (MMBtu)
2033	507	8	T&D Energy Equivalent (MMBtu)
2034	517	7	T&D Energy Equivalent (MMBtu)
2035	534	6	T&D Energy Equivalent (MMBtu)
2036	552	5	T&D Energy Equivalent (MMBtu)
2037	570	4	T&D Energy Equivalent (MMBtu)
2038	589	4	T&D Energy Equivalent (MMBtu)
2039	608	3	T&D Energy Equivalent (MMBtu)
2040	628	3	T&D Energy Equivalent (MMBtu)
2041	649	2	T&D Energy Equivalent (MMBtu)
2042	670	2	T&D Energy Equivalent (MMBtu)
2043	692	2	T&D Energy Equivalent (MMBtu)
2044	715	1	T&D Energy Equivalent (MMBtu)
2045	739	0	T&D Energy Equivalent (MMBtu)
2046	763	0	T&D Energy Equivalent (MMBtu)
2047	788	0	T&D Energy Equivalent (MMBtu)
2048	814	0	T&D Energy Equivalent (MMBtu)
2049	841	0	T&D Energy Equivalent (MMBtu)

Year	Usage	CO2e	Output Name
2016			HFC-23 - CO2e (MT)
2016			HFC-32 - CO2e (MT)
2016			HFC-125 - CO2e (MT)
2016			HFC-134a - CO2e (MT)
2016			HFC-143a - CO2e (MT)
2016			HFC-152a - CO2e (MT)
2016			HFC-236fa - CO2e (MT)
2016			HFC-43-10mee - CO2e (MT)
2016			HFC-227ea - CO2e (MT)
2016			HCFC-22 - CO2e (MT)
2016			HFC-404a - CO2e (MT)
2016			HFC-407c - CO2e (MT)
2016			HFC-410a - CO2e (MT)
2016			Natural Gas Released (MT)
2016	1	9636	Other Process and Fugitive Gas (MT)
2017	1	9703	Other Process and Fugitive Gas (MT)
2018	1	9771	Other Process and Fugitive Gas (MT)
2019	1	9840	Other Process and Fugitive Gas (MT)
2020	1	10027	Other Process and Fugitive Gas (MT)
2021	1	10217	Other Process and Fugitive Gas (MT)
2022	1	10411	Other Process and Fugitive Gas (MT)
2023	1	10609	Other Process and Fugitive Gas (MT)
2024	1	10811	Other Process and Fugitive Gas (MT)
2025	1	11016	Other Process and Fugitive Gas (MT)
2026	1	11225	Other Process and Fugitive Gas (MT)
2027	1	11439	Other Process and Fugitive Gas (MT)
2028	1	11656	Other Process and Fugitive Gas (MT)
2029	1	11878	Other Process and Fugitive Gas (MT)
2030	1	12103	Other Process and Fugitive Gas (MT)
2031	1	12333	Other Process and Fugitive Gas (MT)
2032	1	12568	Other Process and Fugitive Gas (MT)
2033	1	12806	Other Process and Fugitive Gas (MT)
2034	1	13050	Other Process and Fugitive Gas (MT)
2035	1	13480	Other Process and Fugitive Gas (MT)
2036	1	13925	Other Process and Fugitive Gas (MT)
2037	1	14385	Other Process and Fugitive Gas (MT)
2038	2	14859	Other Process and Fugitive Gas (MT)
2039	2	15350	Other Process and Fugitive Gas (MT)
2040	2	15856	Other Process and Fugitive Gas (MT)
2041	2	16379	Other Process and Fugitive Gas (MT)
2042	2	16920	Other Process and Fugitive Gas (MT)
2043	2	17478	Other Process and Fugitive Gas (MT)
2044	2	18055	Other Process and Fugitive Gas (MT)
2045	2	18651	Other Process and Fugitive Gas (MT)
2046	2	19266	Other Process and Fugitive Gas (MT)
2047	2	19902	Other Process and Fugitive Gas (MT)

2048	2	20559	Other Process and Fugitive Gas (MT)
2049	2	21237	Other Process and Fugitive Gas (MT)
2016			Coal Processing CH4 (MT)
2016			Oil System CH4 (MT)

Year	Usage	CO2e	Output Name
2016			Aviation Energy (MMBtu)
2016			Energy Equivalent (MMBtu)
2016			Ships and Boats - Off Road Fuel Use
2016			Locomotives - Off Road Fuel Use
2016			Agricultural - Off Road Fuel Use
2016			Construction - Off Road Fuel Use
2016	1	9960	Snowmobiles and Recreational - Off Road Fuel Use
2017	1	10030	Snowmobiles and Recreational - Off Road Fuel Use
2018	1	10100	Snowmobiles and Recreational - Off Road Fuel Use
2019	1	10171	Snowmobiles and Recreational - Off Road Fuel Use
2020	1	10364	Snowmobiles and Recreational - Off Road Fuel Use
2021	1	10561	Snowmobiles and Recreational - Off Road Fuel Use
2022	1	10761	Snowmobiles and Recreational - Off Road Fuel Use
2023	1	10966	Snowmobiles and Recreational - Off Road Fuel Use
2024	1	11174	Snowmobiles and Recreational - Off Road Fuel Use
2025	1	11387	Snowmobiles and Recreational - Off Road Fuel Use
2026	1	11603	Snowmobiles and Recreational - Off Road Fuel Use
2027	1	11823	Snowmobiles and Recreational - Off Road Fuel Use
2028	1	12048	Snowmobiles and Recreational - Off Road Fuel Use
2029	1	12277	Snowmobiles and Recreational - Off Road Fuel Use
2030	1	12510	Snowmobiles and Recreational - Off Road Fuel Use
2031	1	12748	Snowmobiles and Recreational - Off Road Fuel Use
2032	1	12990	Snowmobiles and Recreational - Off Road Fuel Use
2033	1	13237	Snowmobiles and Recreational - Off Road Fuel Use
2034	1	13488	Snowmobiles and Recreational - Off Road Fuel Use
2035	1	13934	Snowmobiles and Recreational - Off Road Fuel Use
2036	1	14393	Snowmobiles and Recreational - Off Road Fuel Use
2037	1	14868	Snowmobiles and Recreational - Off Road Fuel Use
2038	2	15359	Snowmobiles and Recreational - Off Road Fuel Use
2039	2	15866	Snowmobiles and Recreational - Off Road Fuel Use
2040	2	16389	Snowmobiles and Recreational - Off Road Fuel Use
2041	2	16930	Snowmobiles and Recreational - Off Road Fuel Use
2042	2	17489	Snowmobiles and Recreational - Off Road Fuel Use
2043	2	18066	Snowmobiles and Recreational - Off Road Fuel Use
2044	2	18662	Snowmobiles and Recreational - Off Road Fuel Use
2045	2	19278	Snowmobiles and Recreational - Off Road Fuel Use
2046	2	19914	Snowmobiles and Recreational - Off Road Fuel Use
2047	2	20571	Snowmobiles and Recreational - Off Road Fuel Use
2048	2	21250	Snowmobiles and Recreational - Off Road Fuel Use
2049	2	21952	Snowmobiles and Recreational - Off Road Fuel Use
2016			Small Utility - Off Road Fuel Use
2016			Large Utility - Off Road Fuel Use
2016			Aircraft - Off Road Fuel Use
2016	150553553	59572	Gasoline - On Road VMT
2017	151607428	58669	Gasoline - On Road VMT
2018	152668680	57780	Gasoline - On Road VMT

2019	153737360	56904	Gasoline - On Road VMT
2020	156658370	56478	Gasoline - On Road VMT
2021	159634879	56055	Gasoline - On Road VMT
2022	162667942	55634	Gasoline - On Road VMT
2023	165758633	55218	Gasoline - On Road VMT
2024	168908047	54804	Gasoline - On Road VMT
2025	172117300	54561	Gasoline - On Road VMT
2026	175387528	54318	Gasoline - On Road VMT
2027	178719891	54077	Gasoline - On Road VMT
2028	182115569	53838	Gasoline - On Road VMT
2029	185575765	53599	Gasoline - On Road VMT
2030	189101705	53798	Gasoline - On Road VMT
2031	192694637	53998	Gasoline - On Road VMT
2032	196355835	54198	Gasoline - On Road VMT
2033	200086596	54400	Gasoline - On Road VMT
2034	203888241	54602	Gasoline - On Road VMT
2035	210616553	55952	Gasoline - On Road VMT
2036	217566900	57336	Gasoline - On Road VMT
2037	224746607	58755	Gasoline - On Road VMT
2038	232163245	60208	Gasoline - On Road VMT
2039	239824633	61697	Gasoline - On Road VMT
2040	247738845	63542	Gasoline - On Road VMT
2041	255914227	65442	Gasoline - On Road VMT
2042	264359397	67399	Gasoline - On Road VMT
2043	273083257	69414	Gasoline - On Road VMT
2044	282095004	71490	Gasoline - On Road VMT
2045	291404140	73775	Gasoline - On Road VMT
2046	301020476	76133	Gasoline - On Road VMT
2047	310954152	78567	Gasoline - On Road VMT
2048	321215639	81079	Gasoline - On Road VMT
2049	331815755	83671	Gasoline - On Road VMT
2016	150553553	15555	Diesel - On Road VMT
2017	151607428	15398	Diesel - On Road VMT
2018	152668680	15242	Diesel - On Road VMT
2019	153737360	15088	Diesel - On Road VMT
2020	156658370	15067	Diesel - On Road VMT
2021	159634879	15046	Diesel - On Road VMT
2022	162667942	15025	Diesel - On Road VMT
2023	165758633	15004	Diesel - On Road VMT
2024	168908047	14984	Diesel - On Road VMT
2025	172117300	14994	Diesel - On Road VMT
2026	175387528	15003	Diesel - On Road VMT
2027	178719891	15013	Diesel - On Road VMT
2028	182115569	15023	Diesel - On Road VMT
2029	185575765	15033	Diesel - On Road VMT
2030	189101705	15135	Diesel - On Road VMT
2031	192694637	15237	Diesel - On Road VMT

2032	196355835	15341	Diesel - On Road VMT
2033	200086596	15444	Diesel - On Road VMT
2034	203888241	15549	Diesel - On Road VMT
2035	210616553	15966	Diesel - On Road VMT
2036	217566900	16394	Diesel - On Road VMT
2037	224746607	16833	Diesel - On Road VMT
2038	232163245	17284	Diesel - On Road VMT
2039	239824633	17747	Diesel - On Road VMT
2040	247738845	18296	Diesel - On Road VMT
2041	255914227	18862	Diesel - On Road VMT
2042	264359397	19446	Diesel - On Road VMT
2043	273083257	20047	Diesel - On Road VMT
2044	282095004	20668	Diesel - On Road VMT
2045	291404140	21328	Diesel - On Road VMT
2046	301020476	22010	Diesel - On Road VMT
2047	310954152	22714	Diesel - On Road VMT
2048	321215639	23440	Diesel - On Road VMT
2049	331815755	24189	Diesel - On Road VMT
2016			Biodiesel - On Road VMT
2016			Ethanol - On Road VMT
2016			CNG - On Road VMT
2016			LPG - On Road VMT
2016			LNG - On Road VMT
2016			Methanol - On Road VMT
2016			Electric - On Road VMT
2016			Diesel - Transit VMT
2016			Gasoline - Transit VMT
2016			CNG - Transit VMT
2016			LNG - Transit VMT
2016			LPG - Transit VMT
2016			Methanol - Transit VMT
2016			Ethanol - Transit VMT
2016			Biodiesel - Transit VMT
2016			Electricity - Transit VMT
2016			Diesel - Waterborne Energy (MMBtu)
2016			Gasoline - Waterborne Energy (MMBtu)
2016			Residual Fuel Oil - Waterborne Energy (MMBtu)
2016			Electricity - Waterborne Energy (MMBtu)

Year	Usage	CO2e	Output Name
2016	1016196	67114	Electricity Energy Equivalent (MMBtu)
2017	1023309	64610	Electricity Energy Equivalent (MMBtu)
2018	1030472	62200	Electricity Energy Equivalent (MMBtu)
2019	1037686	59879	Electricity Energy Equivalent (MMBtu)
2020	1057402	58332	Electricity Energy Equivalent (MMBtu)
2021	1077492	56825	Electricity Energy Equivalent (MMBtu)
2022	1097965	55357	Electricity Energy Equivalent (MMBtu)
2023	1118826	53927	Electricity Energy Equivalent (MMBtu)
2024	1140084	52533	Electricity Energy Equivalent (MMBtu)
2025	1161745	51176	Electricity Energy Equivalent (MMBtu)
2026	1183819	49854	Electricity Energy Equivalent (MMBtu)
2027	1206311	48566	Electricity Energy Equivalent (MMBtu)
2028	1229231	47311	Electricity Energy Equivalent (MMBtu)
2029	1252586	46089	Electricity Energy Equivalent (MMBtu)
2030	1276386	38699	Electricity Energy Equivalent (MMBtu)
2031	1300637	32494	Electricity Energy Equivalent (MMBtu)
2032	1325349	27284	Electricity Energy Equivalent (MMBtu)
2033	1350531	22909	Electricity Energy Equivalent (MMBtu)
2034	1376191	19235	Electricity Energy Equivalent (MMBtu)
2035	1421605	16373	Electricity Energy Equivalent (MMBtu)
2036	1468518	13937	Electricity Energy Equivalent (MMBtu)
2037	1516979	11863	Electricity Energy Equivalent (MMBtu)
2038	1567039	10097	Electricity Energy Equivalent (MMBtu)
2039	1618752	8595	Electricity Energy Equivalent (MMBtu)
2040	1672171	7316	Electricity Energy Equivalent (MMBtu)
2041	1727352	6227	Electricity Energy Equivalent (MMBtu)
2042	1784355	5301	Electricity Energy Equivalent (MMBtu)
2043	1843238	4512	Electricity Energy Equivalent (MMBtu)
2044	1904065	3840	Electricity Energy Equivalent (MMBtu)
2045	1966900	4	Electricity Energy Equivalent (MMBtu)
2046	2031807	0	Electricity Energy Equivalent (MMBtu)
2047	2098857	0	Electricity Energy Equivalent (MMBtu)
2048	2168119	0	Electricity Energy Equivalent (MMBtu)
2049	2239667	0	Electricity Energy Equivalent (MMBtu)
2016	475398	20232	Natural Gas - Energy Equivalent (MMBtu)
2017	478726	20374	Natural Gas - Energy Equivalent (MMBtu)
2018	482077	20516	Natural Gas - Energy Equivalent (MMBtu)
2019	485451	20660	Natural Gas - Energy Equivalent (MMBtu)
2020	494675	21052	Natural Gas - Energy Equivalent (MMBtu)
2021	504074	21452	Natural Gas - Energy Equivalent (MMBtu)
2022	513651	21860	Natural Gas - Energy Equivalent (MMBtu)
2023	523411	22275	Natural Gas - Energy Equivalent (MMBtu)
2024	533355	22699	Natural Gas - Energy Equivalent (MMBtu)
2025	543489	23130	Natural Gas - Energy Equivalent (MMBtu)
2026	553815	23569	Natural Gas - Energy Equivalent (MMBtu)
2027	564338	24017	Natural Gas - Energy Equivalent (MMBtu)

2028	575060	24473	Natural Gas - Energy Equivalent (MMBtu)
2029	585986	24938	Natural Gas - Energy Equivalent (MMBtu)
2030	597120	25412	Natural Gas - Energy Equivalent (MMBtu)
2031	608466	25895	Natural Gas - Energy Equivalent (MMBtu)
2032	620026	26387	Natural Gas - Energy Equivalent (MMBtu)
2033	631807	26888	Natural Gas - Energy Equivalent (MMBtu)
2034	643811	27399	Natural Gas - Energy Equivalent (MMBtu)
2035	665057	28304	Natural Gas - Energy Equivalent (MMBtu)
2036	687004	29238	Natural Gas - Energy Equivalent (MMBtu)
2037	709675	30202	Natural Gas - Energy Equivalent (MMBtu)
2038	733094	31199	Natural Gas - Energy Equivalent (MMBtu)
2039	757286	32229	Natural Gas - Energy Equivalent (MMBtu)
2040	782277	33292	Natural Gas - Energy Equivalent (MMBtu)
2041	808092	34391	Natural Gas - Energy Equivalent (MMBtu)
2042	834759	35526	Natural Gas - Energy Equivalent (MMBtu)
2043	862306	36698	Natural Gas - Energy Equivalent (MMBtu)
2044	890762	37909	Natural Gas - Energy Equivalent (MMBtu)
2045	920157	39160	Natural Gas - Energy Equivalent (MMBtu)
2046	950522	40452	Natural Gas - Energy Equivalent (MMBtu)
2047	981890	41787	Natural Gas - Energy Equivalent (MMBtu)
2048	1014292	43166	Natural Gas - Energy Equivalent (MMBtu)
2049	1047764	44591	Natural Gas - Energy Equivalent (MMBtu)
2016			Natural Gas - Energy Equivalent (MMBtu)
2016			LPG - Energy Equivalent (MMBtu)
2016			Propane - Energy Equivalent (MMBtu)
2016			Butane - Energy Equivalent (MMBtu)
2016			Kerosene - Energy Equivalent (MMBtu)
2016			Gasoline - Energy Equivalent (MMBtu)
2016			Distillate Fuel Oil No. 2 - Energy Equivalent (MMBtu)
2016			Residual Fuel Oil No. 5 - Energy Equivalent (MMBtu)
2016			Residual Fuel Oil No. 6 - Energy Equivalent (MMBtu)
2016			Wood - Energy Equivalent (MMBtu)

Year	Usage	CO2e	Output Name
2016			Annual Biosolids Incinerated (MT)
2016			Annual Digester Gas Flared (scf / year)
2016			Annual Gas Production (scf / Year)
2016			Annual Methanol Load (MT CH3OH / year)
2016			Daily Lagoon BOD5 Load (kg/day)
2016			Daily Septic System BOD5 Load (kg/day)
2016			Process N2O Population Served
2016			Wastewater Electric Energy Equivalent (MMBtu)
2016	1	1539	Water Supply Energy Equivalent (MMBtu)
2017	1	1482	Water Supply Energy Equivalent (MMBtu)
2018	1	1426	Water Supply Energy Equivalent (MMBtu)
2019	1	1373	Water Supply Energy Equivalent (MMBtu)
2020	1	1338	Water Supply Energy Equivalent (MMBtu)
2021	1	1303	Water Supply Energy Equivalent (MMBtu)
2022	1	1269	Water Supply Energy Equivalent (MMBtu)
2023	1	1237	Water Supply Energy Equivalent (MMBtu)
2024	1	1205	Water Supply Energy Equivalent (MMBtu)
2025	1	1174	Water Supply Energy Equivalent (MMBtu)
2026	1	1143	Water Supply Energy Equivalent (MMBtu)
2027	1	1114	Water Supply Energy Equivalent (MMBtu)
2028	1	1085	Water Supply Energy Equivalent (MMBtu)
2029	1	1057	Water Supply Energy Equivalent (MMBtu)
2030	1	887	Water Supply Energy Equivalent (MMBtu)
2031	1	745	Water Supply Energy Equivalent (MMBtu)
2032	1	626	Water Supply Energy Equivalent (MMBtu)
2033	1	525	Water Supply Energy Equivalent (MMBtu)
2034	1	441	Water Supply Energy Equivalent (MMBtu)
2035	1	375	Water Supply Energy Equivalent (MMBtu)
2036	1	320	Water Supply Energy Equivalent (MMBtu)
2037	1	272	Water Supply Energy Equivalent (MMBtu)
2038	2	232	Water Supply Energy Equivalent (MMBtu)
2039	2	197	Water Supply Energy Equivalent (MMBtu)
2040	2	168	Water Supply Energy Equivalent (MMBtu)
2041	2	143	Water Supply Energy Equivalent (MMBtu)
2042	2	122	Water Supply Energy Equivalent (MMBtu)
2043	2	103	Water Supply Energy Equivalent (MMBtu)
2044	2	88	Water Supply Energy Equivalent (MMBtu)
2045	2	0	Water Supply Energy Equivalent (MMBtu)
2046	2	0	Water Supply Energy Equivalent (MMBtu)
2047	2	0	Water Supply Energy Equivalent (MMBtu)
2048	2	0	Water Supply Energy Equivalent (MMBtu)
2049	2	0	Water Supply Energy Equivalent (MMBtu)
2016			Daily N Load at Facility with Release to Environment (kg N/day)

Year	Usage	CO2e	Output Name
2016	1	474	Gasoline - Transit VMT
2017	1	348	Gasoline - Transit VMT
2018	1	256	Gasoline - Transit VMT
2019	1	188	Gasoline - Transit VMT
2020	1	139	Gasoline - Transit VMT
2021	1	104	Gasoline - Transit VMT
2022	1	77	Gasoline - Transit VMT
2023	1	57	Gasoline - Transit VMT
2024	1	42	Gasoline - Transit VMT
2025	1	32	Gasoline - Transit VMT
2026	1	23	Gasoline - Transit VMT
2027	1	17	Gasoline - Transit VMT
2028	1	13	Gasoline - Transit VMT
2029	1	10	Gasoline - Transit VMT
2030	1	7	Gasoline - Transit VMT
2031	1	5	Gasoline - Transit VMT
2032	1	4	Gasoline - Transit VMT
2033	1	3	Gasoline - Transit VMT
2034	1	2	Gasoline - Transit VMT
2035	1	2	Gasoline - Transit VMT
2036	1	1	Gasoline - Transit VMT
2037	1	1	Gasoline - Transit VMT
2038	2	1	Gasoline - Transit VMT
2039	2	1	Gasoline - Transit VMT
2040	2	0	Gasoline - Transit VMT
2041	2	0	Gasoline - Transit VMT
2042	2	0	Gasoline - Transit VMT
2043	2	0	Gasoline - Transit VMT
2044	2	0	Gasoline - Transit VMT
2045	2	0	Gasoline - Transit VMT
2046	2	0	Gasoline - Transit VMT
2047	2	0	Gasoline - Transit VMT
2048	2	0	Gasoline - Transit VMT
2049	2	0	Gasoline - Transit VMT
2016	1	162	Diesel - Transit VMT
2017	1	123	Diesel - Transit VMT
2018	1	93	Diesel - Transit VMT
2019	1	70	Diesel - Transit VMT
2020	1	54	Diesel - Transit VMT
2021	1	41	Diesel - Transit VMT
2022	1	32	Diesel - Transit VMT
2023	1	24	Diesel - Transit VMT
2024	1	19	Diesel - Transit VMT
2025	1	14	Diesel - Transit VMT
2026	1	11	Diesel - Transit VMT
2027	1	8	Diesel - Transit VMT

2028	1	6	Diesel - Transit VMT
2029	1	5	Diesel - Transit VMT
2030	1	4	Diesel - Transit VMT
2031	1	3	Diesel - Transit VMT
2032	1	2	Diesel - Transit VMT
2033	1	2	Diesel - Transit VMT
2034	1	1	Diesel - Transit VMT
2035	1	1	Diesel - Transit VMT
2036	1	1	Diesel - Transit VMT
2037	1	1	Diesel - Transit VMT
2038	2	0	Diesel - Transit VMT
2039	2	0	Diesel - Transit VMT
2040	2	0	Diesel - Transit VMT
2041	2	0	Diesel - Transit VMT
2042	2	0	Diesel - Transit VMT
2043	2	0	Diesel - Transit VMT
2044	2	0	Diesel - Transit VMT
2045	2	0	Diesel - Transit VMT
2046	2	0	Diesel - Transit VMT
2047	2	0	Diesel - Transit VMT
2048	2	0	Diesel - Transit VMT
2049	2	0	Diesel - Transit VMT
2016			CNG - Transit VMT
2016			LNG - Transit VMT
2016			LPG - Transit VMT
2016			Methanol - Transit VMT
2016			Ethanol - Transit VMT
2016			Biodiesel - Transit VMT
2016			Electric - Transit VMT

Year	Usage	CO2e	Output Name
2016			Annual Biosolids Incinerated (MT)
2016			Annual Digester Gas Flared (scf / year)
2016			Annual Methanol Load (MT CH3OH / year)
2016	1325	5806	Daily Lagoon BOD5 Load (kg/day)
2017	1334	5846	Daily Lagoon BOD5 Load (kg/day)
2018	1343	5887	Daily Lagoon BOD5 Load (kg/day)
2019	1353	5928	Daily Lagoon BOD5 Load (kg/day)
2020	1378	6041	Daily Lagoon BOD5 Load (kg/day)
2021	1404	6156	Daily Lagoon BOD5 Load (kg/day)
2022	1431	6273	Daily Lagoon BOD5 Load (kg/day)
2023	1458	6392	Daily Lagoon BOD5 Load (kg/day)
2024	1486	6513	Daily Lagoon BOD5 Load (kg/day)
2025	1514	6637	Daily Lagoon BOD5 Load (kg/day)
2026	1543	6763	Daily Lagoon BOD5 Load (kg/day)
2027	1572	6892	Daily Lagoon BOD5 Load (kg/day)
2028	1602	7023	Daily Lagoon BOD5 Load (kg/day)
2029	1633	7156	Daily Lagoon BOD5 Load (kg/day)
2030	1664	7292	Daily Lagoon BOD5 Load (kg/day)
2031	1695	7431	Daily Lagoon BOD5 Load (kg/day)
2032	1728	7572	Daily Lagoon BOD5 Load (kg/day)
2033	1760	7716	Daily Lagoon BOD5 Load (kg/day)
2034	1794	7862	Daily Lagoon BOD5 Load (kg/day)
2035	1853	8122	Daily Lagoon BOD5 Load (kg/day)
2036	1914	8390	Daily Lagoon BOD5 Load (kg/day)
2037	1977	8667	Daily Lagoon BOD5 Load (kg/day)
2038	2043	8953	Daily Lagoon BOD5 Load (kg/day)
2039	2110	9248	Daily Lagoon BOD5 Load (kg/day)
2040	2180	9553	Daily Lagoon BOD5 Load (kg/day)
2041	2252	9869	Daily Lagoon BOD5 Load (kg/day)
2042	2326	10194	Daily Lagoon BOD5 Load (kg/day)
2043	2403	10531	Daily Lagoon BOD5 Load (kg/day)
2044	2482	10878	Daily Lagoon BOD5 Load (kg/day)
2045	2564	11237	Daily Lagoon BOD5 Load (kg/day)
2046	2648	11608	Daily Lagoon BOD5 Load (kg/day)
2047	2736	11991	Daily Lagoon BOD5 Load (kg/day)
2048	2826	12387	Daily Lagoon BOD5 Load (kg/day)
2049	2919	12796	Daily Lagoon BOD5 Load (kg/day)
2016			Daily Septic System BOD5 Load (kg/day)
2016			Digester Annual Gas Production (scf / Year)
2016			Electricity Energy Equivalent (MMBtu)
2016			Natural Gas - Energy Equivalent (MMBtu)
2016			LPG - Energy Equivalent (MMBtu)
2016			Propane - Energy Equivalent (MMBtu)
2016			Butane - Energy Equivalent (MMBtu)
2016			Kerosene - Energy Equivalent (MMBtu)
2016			Gasoline - Energy Equivalent (MMBtu)

2016			Distillate Fuel Oil No. 2 - Energy Equivalent (MMBtu)
2016			Residual Fuel Oil No. 5 - Energy Equivalent (MMBtu)
2016			Residual Fuel Oil No. 6 - Energy Equivalent (MMBtu)
2016			Biodiesel - Energy Equivalent (MMBtu)
2016	24848	65	Process N2O Population Served
2017	25022	65	Process N2O Population Served
2018	25197	66	Process N2O Population Served
2019	25373	66	Process N2O Population Served
2020	25856	67	Process N2O Population Served
2021	26347	69	Process N2O Population Served
2022	26847	70	Process N2O Population Served
2023	27358	71	Process N2O Population Served
2024	27877	73	Process N2O Population Served
2025	28407	74	Process N2O Population Served
2026	28947	75	Process N2O Population Served
2027	29497	77	Process N2O Population Served
2028	30057	78	Process N2O Population Served
2029	30628	80	Process N2O Population Served
2030	31210	81	Process N2O Population Served
2031	31803	83	Process N2O Population Served
2032	32407	85	Process N2O Population Served
2033	33023	86	Process N2O Population Served
2034	33651	88	Process N2O Population Served
2035	34761	91	Process N2O Population Served
2036	35908	94	Process N2O Population Served
2037	37093	97	Process N2O Population Served
2038	38317	100	Process N2O Population Served
2039	39582	103	Process N2O Population Served
2040	40888	107	Process N2O Population Served
2041	42237	110	Process N2O Population Served
2042	43631	114	Process N2O Population Served
2043	45071	118	Process N2O Population Served
2044	46558	121	Process N2O Population Served
2045	48095	125	Process N2O Population Served
2046	49682	130	Process N2O Population Served
2047	51321	134	Process N2O Population Served
2048	53015	138	Process N2O Population Served
2049	54764	143	Process N2O Population Served
2016			T&D Energy Equivalent (MMBtu)
2016	68	58	Daily N Load at Facility with Release to Environment (kg N/day)
2017	69	59	Daily N Load at Facility with Release to Environment (kg N/day)
2018	69	59	Daily N Load at Facility with Release to Environment (kg N/day)
2019	70	59	Daily N Load at Facility with Release to Environment (kg N/day)
2020	71	61	Daily N Load at Facility with Release to Environment (kg N/day)
2021	72	62	Daily N Load at Facility with Release to Environment (kg N/day)
2022	74	63	Daily N Load at Facility with Release to Environment (kg N/day)
2023	75	64	Daily N Load at Facility with Release to Environment (kg N/day)

2024	76	65	Daily N Load at Facility with Release to Environment (kg N/day)
2025	78	67	Daily N Load at Facility with Release to Environment (kg N/day)
2026	79	68	Daily N Load at Facility with Release to Environment (kg N/day)
2027	81	69	Daily N Load at Facility with Release to Environment (kg N/day)
2028	82	70	Daily N Load at Facility with Release to Environment (kg N/day)
2029	84	72	Daily N Load at Facility with Release to Environment (kg N/day)
2030	86	73	Daily N Load at Facility with Release to Environment (kg N/day)
2031	87	75	Daily N Load at Facility with Release to Environment (kg N/day)
2032	89	76	Daily N Load at Facility with Release to Environment (kg N/day)
2033	91	77	Daily N Load at Facility with Release to Environment (kg N/day)
2034	92	79	Daily N Load at Facility with Release to Environment (kg N/day)
2035	95	81	Daily N Load at Facility with Release to Environment (kg N/day)
2036	98	84	Daily N Load at Facility with Release to Environment (kg N/day)
2037	102	87	Daily N Load at Facility with Release to Environment (kg N/day)
2038	105	90	Daily N Load at Facility with Release to Environment (kg N/day)
2039	109	93	Daily N Load at Facility with Release to Environment (kg N/day)
2040	112	96	Daily N Load at Facility with Release to Environment (kg N/day)
2041	116	99	Daily N Load at Facility with Release to Environment (kg N/day)
2042	120	102	Daily N Load at Facility with Release to Environment (kg N/day)
2043	124	106	Daily N Load at Facility with Release to Environment (kg N/day)
2044	128	109	Daily N Load at Facility with Release to Environment (kg N/day)
2045	132	113	Daily N Load at Facility with Release to Environment (kg N/day)
2046	136	116	Daily N Load at Facility with Release to Environment (kg N/day)
2047	141	120	Daily N Load at Facility with Release to Environment (kg N/day)
2048	145	124	Daily N Load at Facility with Release to Environment (kg N/day)
2049	150	128	Daily N Load at Facility with Release to Environment (kg N/day)

City of Galt
Reductions Strategy Summary

2050

	Community GHG	Municipal GHG	Total GHG Emissions	Residents	Per Capita	
Prior to Reduction Strategies	211387	14160.364	225548	56090	4.021174	
With On-Model Reduction Strategies	204973	13740	218713	56090	3.899327	
With On & Off-Model Reductions	138922	13740	152662	56090	2.721739	204973
Remaining Reduction Need	40,482.34					

Off-Model Reduction Results

Urban Tree Planting	1363	
TMA	5323	*5% VMT reduction per SMAQMD Guidance*
Traffic Calming	553.105715	*On 50% of streets, results in 0.5% VMT reduction*
Farmland Preservation	3300	
Safe Routes to School	395.4468913	
Solid Waste 100%	9052	
Tier 4 Requirement	1133.8208	
Process and Fugitive	3164.0821	
Natural Gas Emissions Reductions	30,766.50	
Biodigester	11,000.00	Low end assumption based on Sacramento & Davis facility data
Sum of Off-Model Emissions Reductions	66051	

Total Reducitons Achieved on and off model	72,885.33
Remaining Reduction needed by 2050	40,482.34

Municipal GHG Emissions with On-Model Measures

Year	Category	CO2e
2016	Buildings & Facilities	1536
2017	Buildings & Facilities	1479
2018	Buildings & Facilities	1423
2019	Buildings & Facilities	1370
2020	Buildings & Facilities	1335
2021	Buildings & Facilities	1300
2022	Buildings & Facilities	1267
2023	Buildings & Facilities	1234
2024	Buildings & Facilities	1202
2025	Buildings & Facilities	1171
2026	Buildings & Facilities	1141
2027	Buildings & Facilities	1111
2028	Buildings & Facilities	1083
2029	Buildings & Facilities	1055
2030	Buildings & Facilities	886
2031	Buildings & Facilities	744
2032	Buildings & Facilities	624
2033	Buildings & Facilities	524
2034	Buildings & Facilities	440
2035	Buildings & Facilities	375
2036	Buildings & Facilities	319
2037	Buildings & Facilities	271
2038	Buildings & Facilities	231
2039	Buildings & Facilities	197
2040	Buildings & Facilities	167
2041	Buildings & Facilities	143
2042	Buildings & Facilities	121
2043	Buildings & Facilities	103
2044	Buildings & Facilities	88
2045	Buildings & Facilities	0
2046	Buildings & Facilities	0
2047	Buildings & Facilities	0
2048	Buildings & Facilities	0
2049	Buildings & Facilities	0
2050	Buildings & Facilities	0
2016	Street Lights & Traffic Signals	314
2017	Street Lights & Traffic Signals	302
2018	Street Lights & Traffic Signals	291
2019	Street Lights & Traffic Signals	280
2020	Street Lights & Traffic Signals	273
2021	Street Lights & Traffic Signals	266
2022	Street Lights & Traffic Signals	259
2023	Street Lights & Traffic Signals	252
2024	Street Lights & Traffic Signals	246

2025	Street Lights & Traffic Signals	239
2026	Street Lights & Traffic Signals	233
2027	Street Lights & Traffic Signals	227
2028	Street Lights & Traffic Signals	221
2029	Street Lights & Traffic Signals	216
2030	Street Lights & Traffic Signals	181
2031	Street Lights & Traffic Signals	152
2032	Street Lights & Traffic Signals	128
2033	Street Lights & Traffic Signals	107
2034	Street Lights & Traffic Signals	90
2035	Street Lights & Traffic Signals	77
2036	Street Lights & Traffic Signals	65
2037	Street Lights & Traffic Signals	55
2038	Street Lights & Traffic Signals	47
2039	Street Lights & Traffic Signals	40
2040	Street Lights & Traffic Signals	34
2041	Street Lights & Traffic Signals	29
2042	Street Lights & Traffic Signals	25
2043	Street Lights & Traffic Signals	21
2044	Street Lights & Traffic Signals	18
2045	Street Lights & Traffic Signals	0
2046	Street Lights & Traffic Signals	0
2047	Street Lights & Traffic Signals	0
2048	Street Lights & Traffic Signals	0
2049	Street Lights & Traffic Signals	0
2050	Street Lights & Traffic Signals	0
2016	Transit Fleet	636
2017	Transit Fleet	471
2018	Transit Fleet	348
2019	Transit Fleet	258
2020	Transit Fleet	193
2021	Transit Fleet	145
2022	Transit Fleet	109
2023	Transit Fleet	81
2024	Transit Fleet	61
2025	Transit Fleet	46
2026	Transit Fleet	34
2027	Transit Fleet	26
2028	Transit Fleet	19
2029	Transit Fleet	15
2030	Transit Fleet	11
2031	Transit Fleet	8
2032	Transit Fleet	6
2033	Transit Fleet	5
2034	Transit Fleet	3
2035	Transit Fleet	3
2036	Transit Fleet	2

2037	Transit Fleet	2
2038	Transit Fleet	1
2039	Transit Fleet	1
2040	Transit Fleet	1
2041	Transit Fleet	1
2042	Transit Fleet	0
2043	Transit Fleet	0
2044	Transit Fleet	0
2045	Transit Fleet	0
2046	Transit Fleet	0
2047	Transit Fleet	0
2048	Transit Fleet	0
2049	Transit Fleet	0
2050	Transit Fleet	0
2016	Vehicle Fleet	412
2017	Vehicle Fleet	408
2018	Vehicle Fleet	404
2019	Vehicle Fleet	146
2020	Vehicle Fleet	146
2021	Vehicle Fleet	146
2022	Vehicle Fleet	146
2023	Vehicle Fleet	145
2024	Vehicle Fleet	145
2025	Vehicle Fleet	145
2026	Vehicle Fleet	145
2027	Vehicle Fleet	145
2028	Vehicle Fleet	146
2029	Vehicle Fleet	146
2030	Vehicle Fleet	147
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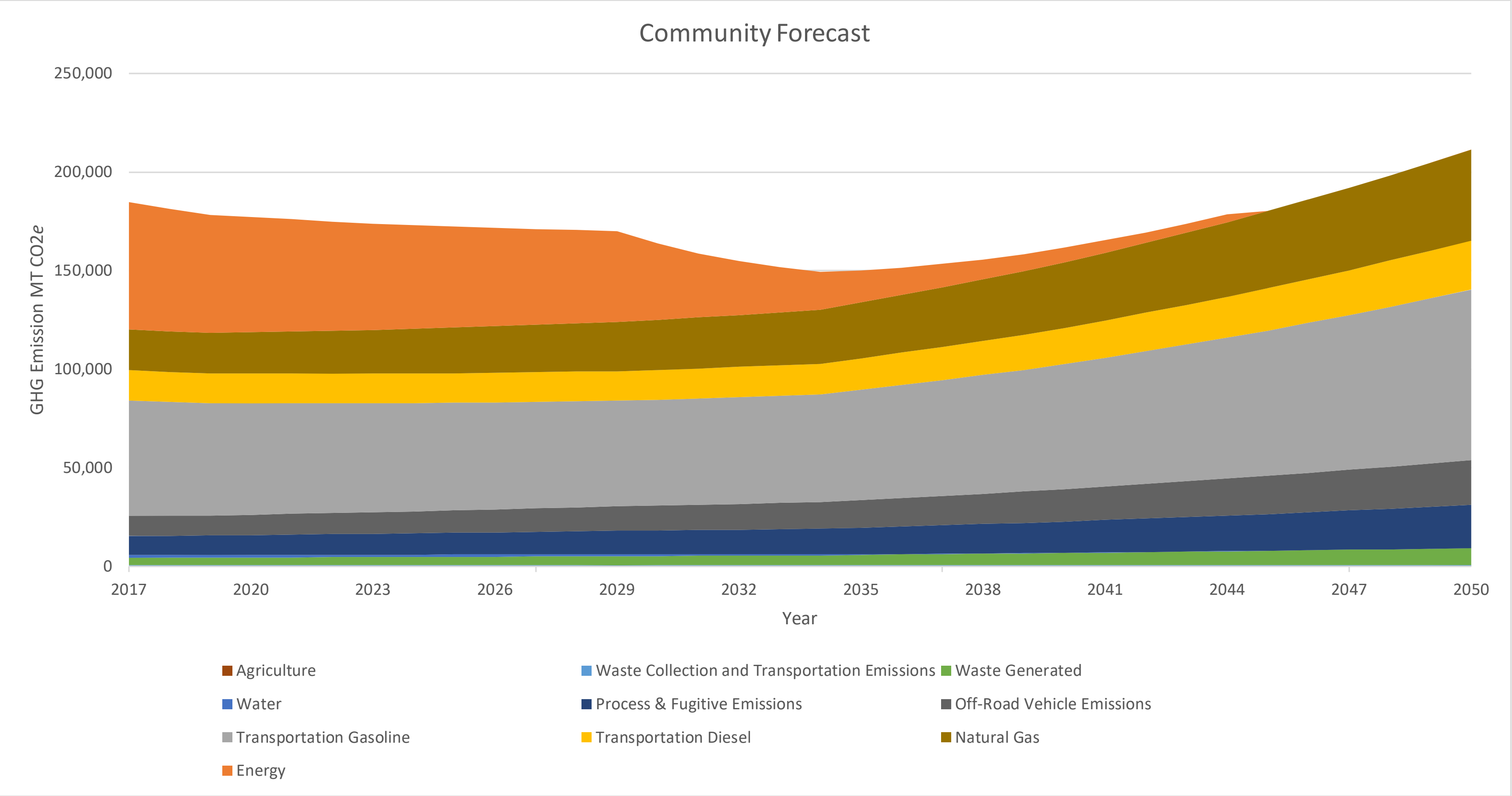
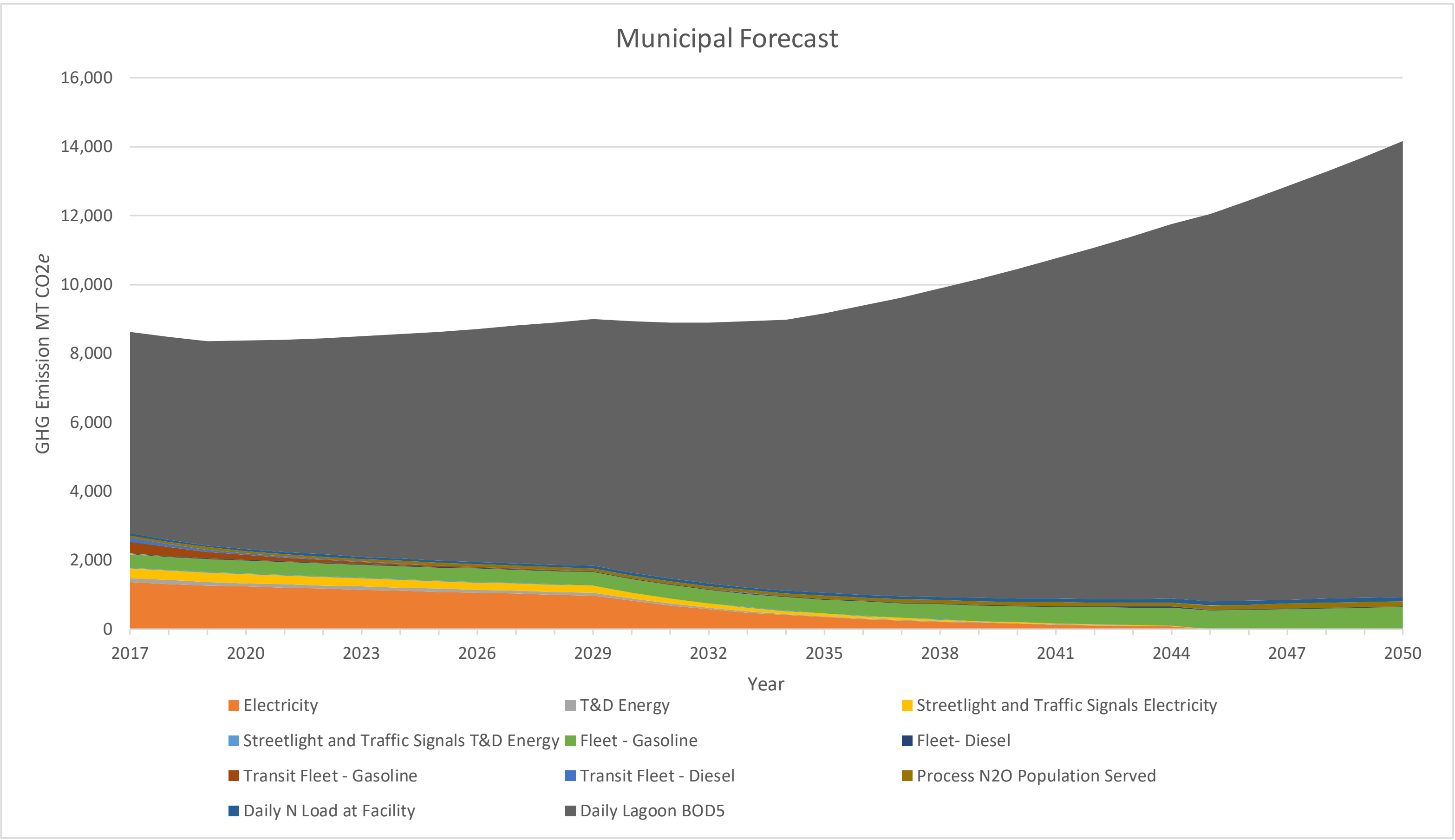
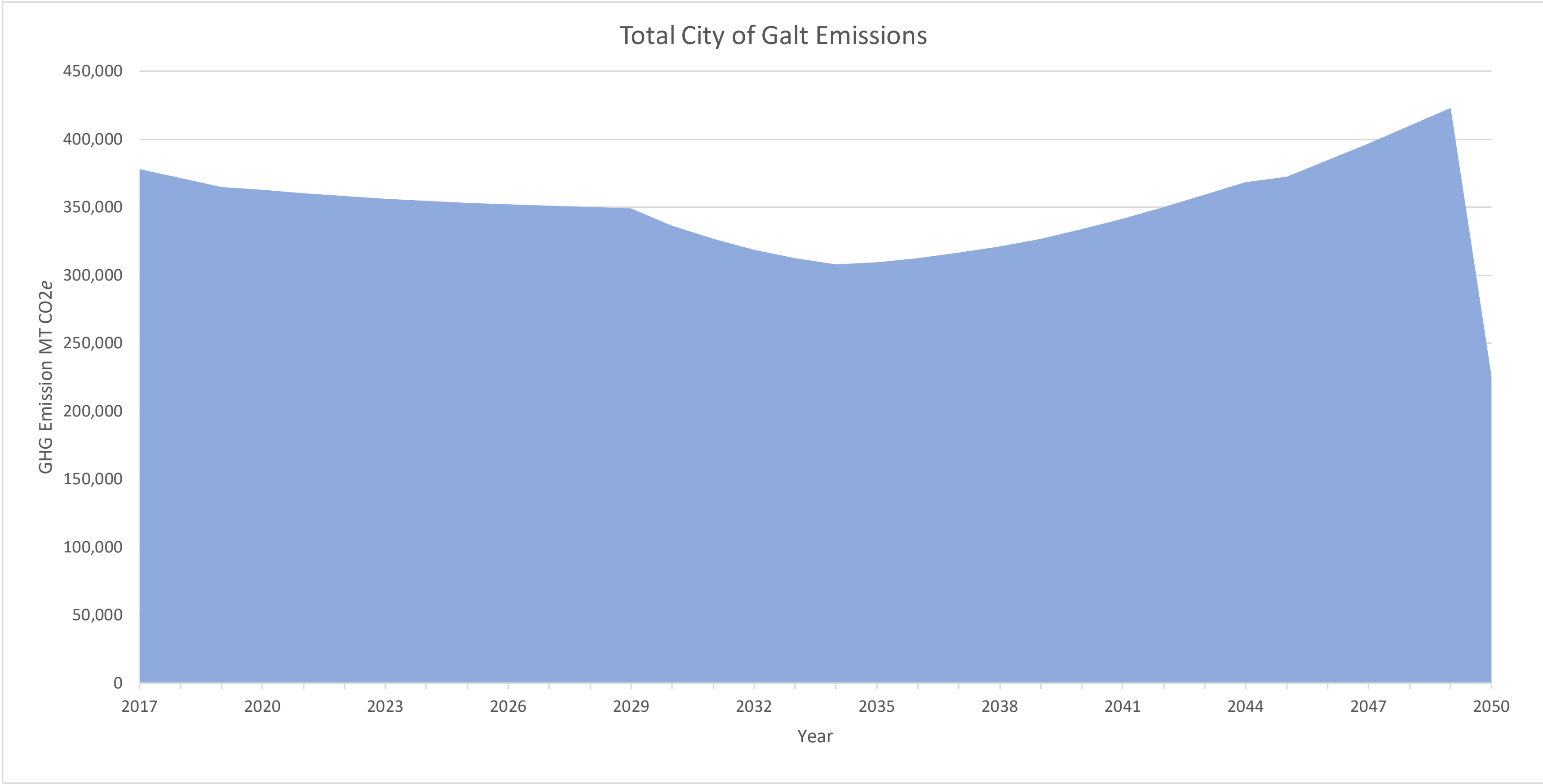
2036	Vehicle Fleet	159
2037	Vehicle Fleet	163
2038	Vehicle Fleet	167
2039	Vehicle Fleet	172
2040	Vehicle Fleet	177
2041	Vehicle Fleet	183
2042	Vehicle Fleet	188
2043	Vehicle Fleet	194
2044	Vehicle Fleet	200
2045	Vehicle Fleet	207
2046	Vehicle Fleet	213
2047	Vehicle Fleet	220
2048	Vehicle Fleet	227

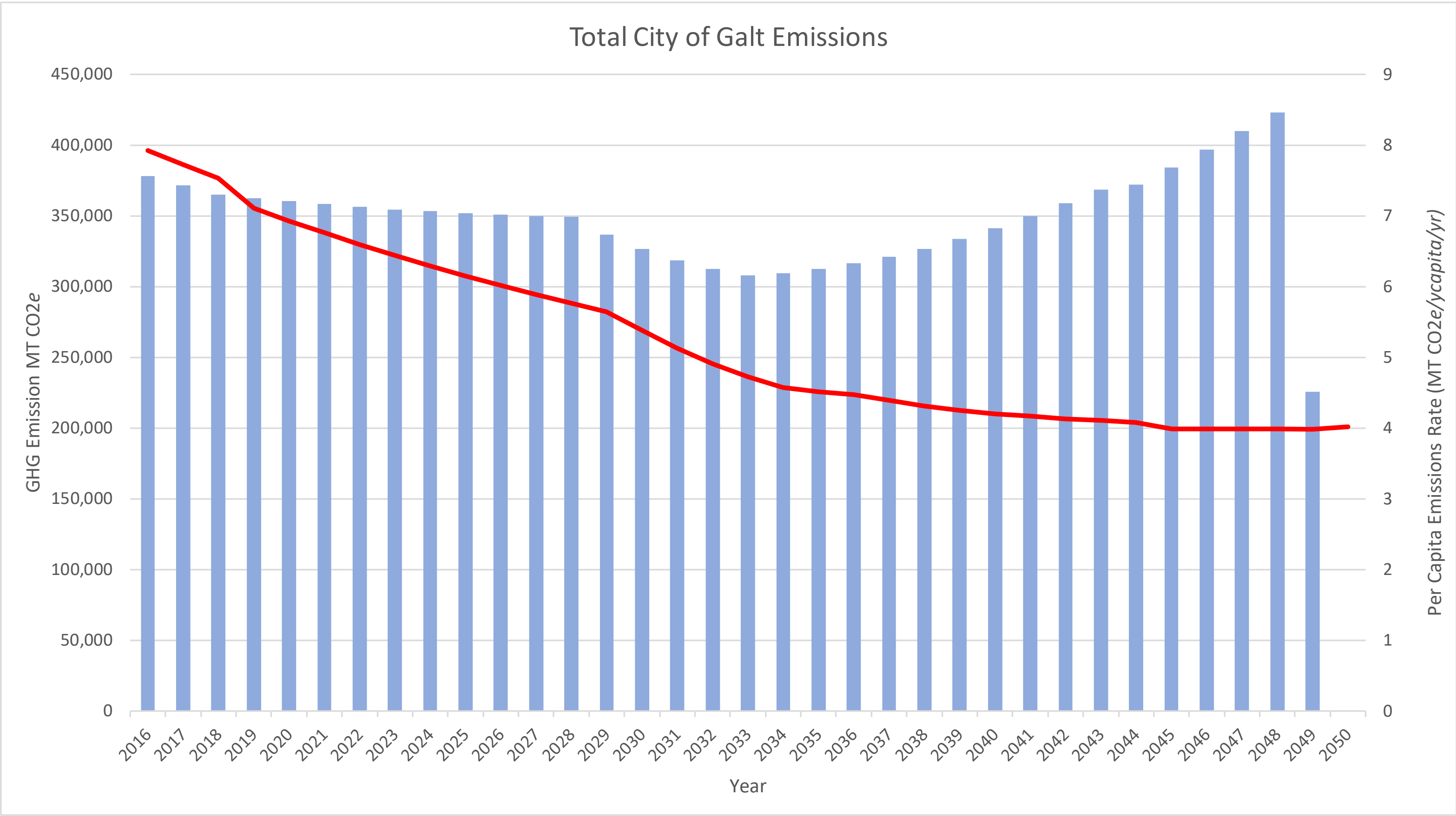
2049	Vehicle Fleet	234
2050	Vehicle Fleet	242
2016	Water & Wastewater Treatment Facilities	5929
2017	Water & Wastewater Treatment Facilities	5970
2018	Water & Wastewater Treatment Facilities	6012
2019	Water & Wastewater Treatment Facilities	6054
2020	Water & Wastewater Treatment Facilities	6169
2021	Water & Wastewater Treatment Facilities	6286
2022	Water & Wastewater Treatment Facilities	6406
2023	Water & Wastewater Treatment Facilities	6527
2024	Water & Wastewater Treatment Facilities	6651
2025	Water & Wastewater Treatment Facilities	6778
2026	Water & Wastewater Treatment Facilities	6907
2027	Water & Wastewater Treatment Facilities	7038
2028	Water & Wastewater Treatment Facilities	7172
2029	Water & Wastewater Treatment Facilities	7308
2030	Water & Wastewater Treatment Facilities	7447
2031	Water & Wastewater Treatment Facilities	7588
2032	Water & Wastewater Treatment Facilities	7732
2033	Water & Wastewater Treatment Facilities	7879
2034	Water & Wastewater Treatment Facilities	8029
2035	Water & Wastewater Treatment Facilities	8294
2036	Water & Wastewater Treatment Facilities	8568
2037	Water & Wastewater Treatment Facilities	8850
2038	Water & Wastewater Treatment Facilities	9142
2039	Water & Wastewater Treatment Facilities	9444
2040	Water & Wastewater Treatment Facilities	9756
2041	Water & Wastewater Treatment Facilities	10078
2042	Water & Wastewater Treatment Facilities	10410
2043	Water & Wastewater Treatment Facilities	10754
2044	Water & Wastewater Treatment Facilities	11109
2045	Water & Wastewater Treatment Facilities	11475
2046	Water & Wastewater Treatment Facilities	11854
2047	Water & Wastewater Treatment Facilities	12245
2048	Water & Wastewater Treatment Facilities	12649
2049	Water & Wastewater Treatment Facilities	13067
2050	Water & Wastewater Treatment Facilities	13498
2050	Total	13740

		Community Inventory											Municipal Inventory												
	Year	Energy	Natural Gas	Transportation Gasoline	Transportation Diesel	Off-Road Vehicle Emissions	Waste Collection and Transportation Emissions	Water	Waste Generated	Process & Fugitive Emissions	Agriculture	Sub-total Community	Electricity	T&D Energy	Streetlight and Traffic Signals Electricity	Streetlight and Traffic Signals T&D Energy	Fleet - Gasoline	Fleet- Diesel	Transit Fleet - Gasoline	Transit Fleet - Diesel	Daily Lagoon BOD5	Process N2O Population Served	Daily N Load at Facility	Sub-Total Municipal	Total
	2017	64610	20374	58669	15398	10030	337	1482	3784	9703	239	184626	1366	112	279	23	390	18	348	123	5846	65	59	8629	377881
	2018	62200	20516	57780	15242	10100	332	1426	3811	9771	239	181417	1315	108	269	22	386	18	256	93	5887	66	59	8479	371313
	2019	59879	20660	56904	15088	10171	327	1373	3838	9840	239	178319	1266	104	258	22	382	18	188	70	5928	66	59	8361	364999
	2020	58332	21052	56478	15067	10364	324	1338	3911	10027	239	177132	1234	101	252	21	381	18	139	54	6041	67	61	8369	362633
	2021	56825	21452	56055	15046	10561	322	1303	3985	10217	239	176005	1202	99	245	20	381	18	104	41	6156	69	62	8397	360407
	2022	55357	21860	55634	15025	10761	319	1269	4061	10411	239	174936	1171	96	239	20	380	18	77	32	6273	70	63	8439	358311
	2023	53927	22275	55218	15004	10966	317	1237	4138	10609	239	173930	1141	94	233	19	380	18	57	24	6392	71	64	8493	356353
	2024	52533	22699	54804	14984	11174	315	1205	4216	10811	239	172980	1111	91	227	19	379	18	42	19	6513	73	65	8557	354517
	2025	51176	23130	54561	14994	11387	313	1174	4296	11016	239	172286	1082	89	221	18	379	18	32	14	6637	74	67	8631	353203
	2026	49854	23569	54318	15003	11603	312	1143	4378	11225	239	171644	1054	87	215	18	380	18	23	11	6763	75	68	8712	352000
	2027	48566	24017	54077	15013	11823	310	1114	4461	11439	239	171059	1027	84	210	18	380	18	17	8	6892	77	69	8800	350918
	2028	47311	24473	53838	15023	12048	309	1085	4546	11656	239	170528	1001	82	204	17	380	18	13	6	7023	78	70	8892	349948
	2029	46089	24938	53599	15033	12277	308	1057	4632	11878	239	170050	975	80	199	17	380	18	10	5	7156	80	72	8992	349092
	2030	38699	25412	53798	15135	12510	309	887	4720	12103	239	163812	818	67	167	14	383	18	7	4	7292	81	73	8924	336548
	2031	32494	25895	53998	15237	12748	310	745	4810	12333	239	158809	687	56	140	12	386	18	5	3	7431	83	75	8896	326514
	2032	27284	26387	54198	15341	12990	311	626	4901	12568	239	154845	577	47	118	10	388	18	4	2	7572	85	76	8897	318587
	2033	22909	26888	54400	15444	13237	312	525	4995	12806	239	151755	485	40	99	8	391	18	3	2	7716	86	77	8925	312435
	2034	19235	27399	54602	15549	13488	313	441	5089	13050	239	149405	407	33	83	7	394	19	2	1	7862	88	79	8975	307785
	2035	16373	28304	55952	15966	13934	321	375	5257	13480	239	150201	346	28	71	6	404	19	2	1	8122	91	81	9171	309573
	2036	13937	29238	57336	16394	14393	329	320	5431	13925	239	151542	295	24	60	5	415	20	1	1	8390	94	84	9389	312473
	2037	11863	30202	58755	16833	14868	337	272	5610	14385	239	153364	251	21	51	4	426	20	1	1	8667	97	87	9626	316354
	2038	10097	31199	60208	17284	15359	346	232	5795	14859	239	155618	214	18	44	4	437	21	1	0	8953	100	90	9882	321118
	2039	8595	32229	61697	17747	15866	354	197	5987	15350	239	158261	182	15	37	3	449	21	1	0	9248	103	93	10152	326674
	2040	7316	33292	63542	18296	16389	365	168	6184	15856	239	161647	155	13	32	3	463	22	0	0	9553	107	96	10444	333738
	2041	6227	34391	65442	18862	16930	376	143	6388	16379	239	165377	132	11	27	2	477	23	0	0	9869	110	99	10750	341504
	2042	5301	35526	67399	19446	17489	387	122	6599	16920	239	169428	112	9	23	2	492	23	0	0	10194	114	102	11071	349927
	2043	4512	36698	69414	20047	18066	398	103	6817	17478	239	173772	95	8	19	2	507	24	0	0	10531	118	106	11410	358954
	2044	3840	37909	71490	20668	18662	410	88	7042	18055	239	178403	81	7	17	1	523	25	0	0	10878	121	109	11762	368568
	2045	4	39160	73775	21328	19278	424	0	7274	18651	239	180133	0	0	0	0	540	25	0	0	11237	125	113	12040	372306
	2046	0	40452	76133	22010	19914	437	0	7514	19266	239	185965	0	0	0	0	557	26	0	0	11608	130	116	12437	384367
	2047	0	41787	78567	22714	20571	451	0	7762	19902	239	191993	0	0	0	0	575	27	0	0	11991	134	120	12847	396833
	2048	0	43166	81079	23440	21250	465	0	8018	20559	239	198216	0	0	0	0	593	28	0	0	12387	138	124	13270	409702
	2049	0	44591	83671	24189	21952	480	0	8283	21237	239	204642	0	0	0	0	612	29	0	0	12796	143	128	13708	422992
14160	2050	0	46063	86432	24987	22676	496	0	8556	21938	239	211387	0	0	0	0	632	30	0	0	13218	148	132	14160.36	225548
				0.123333746																					









Summary of Sacramento's Biodigester off-sets

22.38	lbs CO2 per gallon of diesel bu	*From EIA data saved to references
700000	diesel gallons equivalent created at SAC location	
15666000	lbs of CO2 avoided	
18250	MT CO2e off-set	

Summary of UCD Biodigester

50	tons of organic waste treated at digester/day	
13500	MT CO2e	reduced due to operation of digester per year

Summary of wastewater treatment biodigester

	1	cubic foot digester gas per person per day
550	650	Low Range BTU per cubic foot bio gas
610	715	High Range Range BTU per cubic foot bio gas
	600	Assume Avg
	137381	Btu/gallon diesel

	City Population	BTU Produced p	Diesel offset	Carbon offset (lbs)	Carbon offset (MT CO2/day)	Carbon offset (MT CO2/yr)
2030	32180	19308000	140.5434522	3145.362459	1.426714109	520.7506
2050	56090	33654000	244.9683726	5482.392179	2.486774219	907.6726

Year	Process & Fugitive Emissions	Emissions After Reduction Strategy	Difference	
2017	9703	8732.7	970.3	
2018	9771	8793.9	977.1	
2019	9840	8856	984	
2020	10027	9024.3	1002.7	
2021	10217	9195.3	1021.7	
2022	10411	9369.9	1041.1	
2023	10609	9548.1	1060.9	
2024	10811	9729.9	1081.1	
2025	11016	9914.4	1101.6	
2026	11225	10102.5	1122.5	
2027	11439	10295.1	1143.9	
2028	11656	10490.4	1165.6	
2029	11878	10690.2	1187.8	
2030	12103	10892.7	1210.3	
2031	12333	11099.7	1233.3	3164.082
2032	12568	11311.2	1256.8	
2033	12806	11525.4	1280.6	
2034	13050	11745	1305	
2035	13480	12132	1348	
2036	13925	12532.5	1392.5	
2037	14385	12946.5	1438.5	
2038	14859	13373.1	1485.9	
2039	15350	13815	1535	
2040	15856	14270.4	1585.6	
2041	16379	14741.1	1637.9	
2042	16920	15228	1692	
2043	17478	15730.2	1747.8	
2044	18055	16249.5	1805.5	
2045	18651	16785.9	1865.1	
2046	19266	17339.4	1926.6	
2047	19902	17911.8	1990.2	
2048	20559	18503.1	2055.9	
2049	21237	19113.3	2123.7	
2050	21937.821	19744.0389	2193.782	

Year	Natural Gas
2016	20,232.00
2017	20,374.00
2018	20,516.00
2019	20,660.00
2020	21,052.00
2021	21,452.00
2022	21,860.00
2023	22,275.00
2024	22,699.00
2025	23,130.00
2026	23,569.00
2027	24,017.00
2028	24,473.00
2029	24,938.00
2030	25,412.00
2031	25,895.00
2032	26,387.00
2033	26,888.00
2034	27,399.00
2035	28,304.00
2036	29,238.00
2037	30,202.00
2038	31,199.00
2039	32,229.00
2040	33,292.00
2041	34,391.00
2042	35,526.00
2043	36,698.00
2044	37,909.00
2045	39,160.00
2046	40,452.00
2047	41,787.00
2048	43,166.00
2049	44,591.00
2050	46,062.50

Growth in emissions between 2016 and 2030	Reduce Existing Natural Gas Usage by 15%from 2016 level by 2030	Reduce Existing Natural Gas Usage by 50% from 2016 level by 2050
5,180.00	17,197.20	10,116.00

	2016	2030	2050
Forecasted Emissions	20,232.00	25,412.00	46,062.50
Emissions with Reduction Strategies		22,377.20	15,296.00
Emissions Reductions Achieved		3,034.80	30,766.50

Safe Routes to School

	New Housing Units	New Students	Students per household	
GP Anticipated Elementary	1250	785	0.628	Existing Students
GP Anticipated High School	1250	245	0.196	2425

2030 Elementary	2134	1340.152
2030 High School	2134	418.264
2050 Elementary	4916	3087.248
2050 High School	4916	963.536

GHG Reductions for Safe Route To School

Year	Total Students	Reduction per student	Total Reduction	Source
2030	4183.416	0.07	292.83912	*Reduction per Student from Appendix D-1: Calculation of GHG Emissions Reductions for Phase I Trasnportation Actions of the Chico CAP*
2050	6475.784	0.07	453.30488	*Reduction per Student from Appendix D-1: Calculation of GHG Emissions Reductions for Phase I Trasnportation Actions of the Chico CAP*
2030	4183.416	0.05213097	218.0855347	Marin County Safe Routes To Schools. *Safe Routes to Schools Program Evaluation 2003-2004* . August 2004.
2050	6475.784	0.05213097	337.5889025	Marin County Safe Routes To Schools. *Safe Routes to Schools Program Evaluation 2003-2004* . August 2004.

Program	Participants (# Students)	Emissions Reductions	Per Student Reductions
Marin County	13678	713.04741	0.05213097

Year	Low Reduction	High Reduction	Median Reduction
2030	218.0855347	292.83912	255.4623274
2050	337.5889025	453.30488	395.4468913

Year	Trees Planted Per Year	Years Elapsed	GHG Reduction per Tree (MT CO2*e*)	Total Trees Planted	GHG Reductions
2030	100	0	0.0354	100	3.54
2031	110	1	0.0354	210	7.434
2032	120	2	0.0354	330	11.682
2033	130	3	0.0354	460	16.284
2034	140	4	0.0354	600	21.24
2035	150	5	0.0354	750	26.55
2036	160	6	0.0354	910	32.214
2037	170	7	0.0354	1080	38.232
2038	180	8	0.0354	1260	44.604
2039	190	9	0.0354	1450	51.33
2040	200	10	0.0354	1650	58.41
2041	210	11	0.0354	1860	65.844
2042	220	12	0.0354	2080	73.632
2043	230	13	0.0354	2310	81.774
2044	240	14	0.0354	2550	90.27
2045	250	15	0.0354	2800	99.12
2046	260	16	0.0354	3060	108.324
2047	270	17	0.0354	3330	117.882
2048	280	18	0.0354	3610	127.794
2049	290	19	0.0354	3900	138.06
2050	300	20	0.0354	4200	148.68
				Total GHG Reductions	1,363

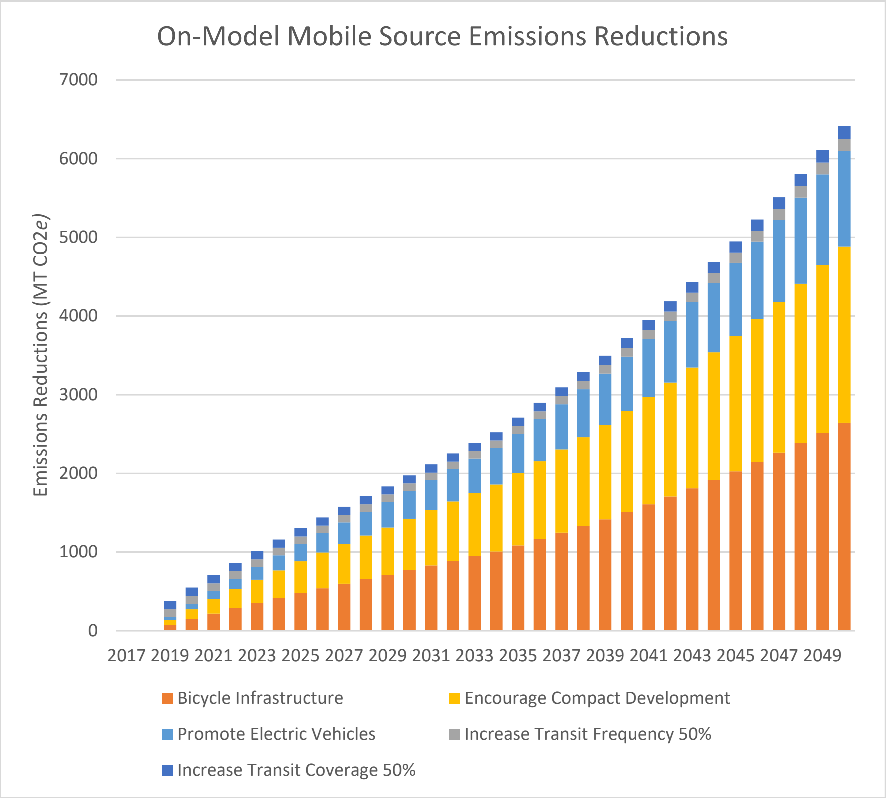
Note: Sequestration assumed to occur for 20 years

Source for Sequestration/Tree: BREEZE Software. *CalEEMod User Guide: Appendix A* [Page 61]. October 2017.

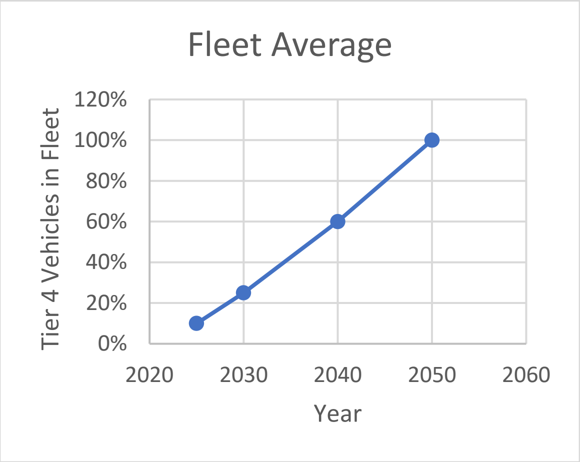
			Bicycle Infrastructure		Increase Transit Coverage 50%		Increase Transit Frequency 50%		Encourage Compact Development		Promote Electric Vehicles	
	Year	Unmitigated	Mitigated	Difference	Mitigated	Difference	Mitigated	Difference	Mitigated	Difference	Mitigated	Difference
Transportation & Mobile Sources	2017	84096	84096	0	84096	0	84096	0	84096	0	84096	0
Transportation & Mobile Sources	2018	83121	83121	0	83121	0	83121	0	83121	0	83121	0
Transportation & Mobile Sources	2019	82162	82087	75	82054	108	82062	100	82099	63	82128	34
Transportation & Mobile Sources	2020	81908	81761	147	81800	108	81808	100	81783	125	81840	68
Transportation & Mobile Sources	2021	81661	81443	218	81554	107	81562	99	81476	185	81561	100
Transportation & Mobile Sources	2022	81421	81135	286	81315	106	81323	98	81179	242	81290	131
Transportation & Mobile Sources	2023	81188	80837	351	81082	106	81090	98	80890	298	81027	161
Transportation & Mobile Sources	2024	80962	80547	415	80857	105	80865	97	80610	352	80771	191
Transportation & Mobile Sources	2025	80941	80464	477	80836	105	80844	97	80536	405	80722	219
Transportation & Mobile Sources	2026	80925	80387	538	80821	104	80829	96	80469	456	80678	247
Transportation & Mobile Sources	2027	80914	80317	597	80811	103	80818	96	80408	506	80640	274
Transportation & Mobile Sources	2028	80909	80254	655	80806	103	80813	96	80354	555	80608	301
Transportation & Mobile Sources	2029	80909	80199	710	80806	103	80814	95	80307	602	80583	326
Transportation & Mobile Sources	2030	81443	80672	771	81340	103	81348	95	80790	653	81089	354
Transportation & Mobile Sources	2031	81983	81153	830	81880	103	81887	96	81279	704	81602	381
Transportation & Mobile Sources	2032	82529	81640	889	82425	104	82433	96	81775	754	82120	409
Transportation & Mobile Sources	2033	83081	82133	948	82977	104	82985	96	82277	804	82646	435
Transportation & Mobile Sources	2034	83639	82633	1006	83535	104	83543	96	82786	853	83177	462
Transportation & Mobile Sources	2035	85852	84767	1085	85745	107	85753	99	84932	920	85354	498
Transportation & Mobile Sources	2036	88123	86958	1165	88014	109	88022	101	87136	987	87588	535
Transportation & Mobile Sources	2037	90456	89209	1247	90344	112	90352	104	89399	1057	89883	573
Transportation & Mobile Sources	2038	92851	91521	1330	92736	115	92745	106	91723	1128	92240	611
Transportation & Mobile Sources	2039	95311	93895	1416	95193	118	95201	110	94110	1201	94661	650
Transportation & Mobile Sources	2040	98228	96718	1510	98106	122	98116	112	96948	1280	97535	693
Transportation & Mobile Sources	2041	101235	99628	1607	101110	125	101119	116	99872	1363	100497	738
Transportation & Mobile Sources	2042	104334	102627	1707	104205	129	104214	120	102887	1447	103550	784
Transportation & Mobile Sources	2043	107528	105718	1810	107395	133	107405	123	105994	1534	106697	831
Transportation & Mobile Sources	2044	110820	108905	1915	110683	137	110693	127	109196	1624	109940	880
Transportation & Mobile Sources	2045	114381	112354	2027	114240	141	114251	130	112662	1719	113450	931
Transportation & Mobile Sources	2046	118058	115914	2144	117912	146	117923	135	116240	1818	117073	985
Transportation & Mobile Sources	2047	121852	119589	2263	121702	150	121713	139	119933	1919	120813	1039
Transportation & Mobile Sources	2048	125769	123382	2387	125614	155	125625	144	123745	2024	124673	1096
Transportation & Mobile Sources	2049	129811	127296	2515	129651	160	129663	148	127679	2132	128656	1155
Transportation & Mobile Sources	2050	133853	131210	2643	133688	165	133701	152	131613	2240	132639	1214

Municipal	Year	Unmitigated	Mitigated	Emissions Reductions
Vehicle Fleet	2017	408	408	0
Vehicle Fleet	2018	404	404	0
Vehicle Fleet	2019	400	146	254
Vehicle Fleet	2020	399	146	253

Vehicle Fleet	2021	399	146	253
Vehicle Fleet	2022	398	146	252
Vehicle Fleet	2023	398	145	253
Vehicle Fleet	2024	397	145	252
Vehicle Fleet	2025	397	145	252
Vehicle Fleet	2026	398	145	253
Vehicle Fleet	2027	398	145	253
Vehicle Fleet	2028	398	146	252
Vehicle Fleet	2029	398	146	252
Vehicle Fleet	2030	401	147	254
Vehicle Fleet	2031	404	148	256
Vehicle Fleet	2032	406	149	257
Vehicle Fleet	2033	409	150	259
Vehicle Fleet	2034	413	151	262
Vehicle Fleet	2035	423	155	268
Vehicle Fleet	2036	435	159	276
Vehicle Fleet	2037	446	163	283
Vehicle Fleet	2038	458	167	291
Vehicle Fleet	2039	470	172	298
Vehicle Fleet	2040	485	177	308
Vehicle Fleet	2041	500	183	317
Vehicle Fleet	2042	515	188	327
Vehicle Fleet	2043	531	194	337
Vehicle Fleet	2044	548	200	348
Vehicle Fleet	2045	565	207	358
Vehicle Fleet	2046	583	213	370
Vehicle Fleet	2047	602	220	382
Vehicle Fleet	2048	621	227	394
Vehicle Fleet	2049	641	234	407
Vehicle Fleet	2050	662.153	241	421.153



Year	Tier 4 Vehicle Fleet Avg.
2025	10%
2030	25%
2040	60%
2050	100%



Year	Unmitigated Emissions	Tier 4 Fleet Requirement (%)	Emissions With Tier 4	Emissions Reductions
2017	10030	0	10030	0
2018	10100	0	10100	0
2019	10171	0	10171	0
2020	10364	0	10364	0
2021	10561	0	10561	0
2022	10761	0	10761	0
2023	10966	0	10966	0
2024	11174	0	11174	0
2025	11387	10	11330.065	56.935
2026	11603	13	11527.5805	75.4195
2027	11823	16	11728.416	94.584
2028	12048	19	11933.544	114.456
2029	12277	22	12141.953	135.047
2030	12510	25	12353.625	156.375
2031	12748	29	12566.341	181.659
2032	12990	32	12782.16	207.84
2033	13237	36	13002.0433	234.95675
2034	13488	39	13224.984	263.016
2035	13934	43	13637.9025	296.0975
2036	14393	46	14061.961	331.039
2037	14868	50	14500.017	367.983
2038	15359	53	14951.9865	407.0135
2039	15866	57	15417.7855	448.2145
2040	16389	60	15897.33	491.67
2041	16930	64	16388.24	541.76
2042	17489	68	16894.374	594.626
2043	18066	72	17415.624	650.376
2044	18662	76	17952.844	709.156
2045	19278	80	18506.88	771.12
2046	19914	84	19077.612	836.388
2047	20571	88	19665.876	905.124

2048	21250	92	20272.5	977.5
2049	21952	96	20898.304	1053.696
2050	22676	100	21542.5952	1133.8208

*Note: Per EMFAC, construction equipment accounts for 53% of emissions from off-road sources within SMAQMD's jurisdiction in 2016

*Note: According to Caterpillar Tier 4 compliant engines are 5% more fuel efficient

Year	Usage	CO2e	Output Name	Usage with TMA	CO2e with TMA	VMT Reductions from TMA	Emissions Reductions from TMA	Usage With Traffic Calming	CO2e with Traffic Calming	VMT reductions from Traffic Calming	Emissions Rductions from Traffic Calming
2016			Aviation Energy (MMBtu)								
2016			Energy Equivalent (MMBtu)								
2016			Ships and Boats - Off Road Fuel Use								
2016			Locomotives - Off Road Fuel Use								
2016			Agricultural - Off Road Fuel Use								
2016			Construction - Off Road Fuel Use								
2016	1	9960	Snowmobiles and Recreational - Off Road Fuel Use								
2017	1	10030	Snowmobiles and Recreational - Off Road Fuel Use								
2018	1	10100	Snowmobiles and Recreational - Off Road Fuel Use								
2019	1	10171	Snowmobiles and Recreational - Off Road Fuel Use								
2020	1	10364	Snowmobiles and Recreational - Off Road Fuel Use								
2021	1	10561	Snowmobiles and Recreational - Off Road Fuel Use								
2022	1	10761	Snowmobiles and Recreational - Off Road Fuel Use								
2023	1	10966	Snowmobiles and Recreational - Off Road Fuel Use								
2024	1	11174	Snowmobiles and Recreational - Off Road Fuel Use								
2025	1	11387	Snowmobiles and Recreational - Off Road Fuel Use								
2026	1	11603	Snowmobiles and Recreational - Off Road Fuel Use								
2027	1	11823	Snowmobiles and Recreational - Off Road Fuel Use								
2028	1	12048	Snowmobiles and Recreational - Off Road Fuel Use								
2029	1	12277	Snowmobiles and Recreational - Off Road Fuel Use								
2030	1	12510	Snowmobiles and Recreational - Off Road Fuel Use								
2031	1	12748	Snowmobiles and Recreational - Off Road Fuel Use								
2032	1	12990	Snowmobiles and Recreational - Off Road Fuel Use								
2033	1	13237	Snowmobiles and Recreational - Off Road Fuel Use								
2034	1	13488	Snowmobiles and Recreational - Off Road Fuel Use								
2035	1	13934	Snowmobiles and Recreational - Off Road Fuel Use								
2036	1	14393	Snowmobiles and Recreational - Off Road Fuel Use								
2037	1	14868	Snowmobiles and Recreational - Off Road Fuel Use								
2038	2	15359	Snowmobiles and Recreational - Off Road Fuel Use								
2039	2	15866	Snowmobiles and Recreational - Off Road Fuel Use								
2040	2	16389	Snowmobiles and Recreational - Off Road Fuel Use								
2041	2	16930	Snowmobiles and Recreational - Off Road Fuel Use								
2042	2	17489	Snowmobiles and Recreational - Off Road Fuel Use								
2043	2	18066	Snowmobiles and Recreational - Off Road Fuel Use								
2044	2	18662	Snowmobiles and Recreational - Off Road Fuel Use								
2045	2	19278	Snowmobiles and Recreational - Off Road Fuel Use								
2046	2	19914	Snowmobiles and Recreational - Off Road Fuel Use								
2047	2	20571	Snowmobiles and Recreational - Off Road Fuel Use								
2048	2	21250	Snowmobiles and Recreational - Off Road Fuel Use								
2049	2	21952	Snowmobiles and Recreational - Off Road Fuel Use								
2016			Small Utility - Off Road Fuel Use								
2016			Large Utility - Off Road Fuel Use								
2016			Aircraft - Off Road Fuel Use								
2016	140918125	59572	Gasoline - On Road VMT	140918125	59572	0	0	140918125	59572	0	0

2017	141904552	58669	Gasoline - On Road VMT	141904552	58669	0	0	141904552	58669	0	0
2018	142897884	57780	Gasoline - On Road VMT	142897884	57780	0	0	142897884	57780	0	0
2019	143898169	56904	Gasoline - On Road VMT	143898169	56904	0	0	143898169	56904	0	0
2020	146632235	56478	Gasoline - On Road VMT	146632235	56478	0	0	146632235	56478	0	0
2021	149418247	56055	Gasoline - On Road VMT	149418247	56055	0	0	149418247	56055	0	0
2022	152257194	55634	Gasoline - On Road VMT	152257194	55634	0	0	152257194	55634	0	0
2023	155150080	55218	Gasoline - On Road VMT	155150080	55218	0	0	155150080	55218	0	0
2024	158097932	54804	Gasoline - On Road VMT	158097932	54804	0	0	158097932	54804	0	0
2025	161101793	54561	Gasoline - On Road VMT	159520813	54025	1580980	536	160296284	54288.2	805508.965	272.805
2026	164162727	54318	Gasoline - On Road VMT	160956501	53258	3206226	1060	163341913.4	54046.41	820813.635	271.59
2027	167281818	54077	Gasoline - On Road VMT	162405109	52501	4876709	1576	166445408.9	53806.62	836409.09	270.385
2028	170460173	53838	Gasoline - On Road VMT	163866755	51755	6593418	2083	169607872.1	53568.81	852300.865	269.19
2029	173698916	53599	Gasoline - On Road VMT	165341556	51020	8357360	2579	172830421.4	53331.01	868494.58	267.995
2030	176999196	53798	Gasoline - On Road VMT	168483045	51209	8516151	2589	176114200	53529.01	884995.98	268.99
2031	180362180	53998	Gasoline - On Road VMT	171684223	51400	8677957	2598	179460369.1	53728.01	901810.9	269.99
2032	183789062	54198	Gasoline - On Road VMT	174946224	51591	8842838	2607	182870116.7	53927.01	918945.31	270.99
2033	187281054	54400	Gasoline - On Road VMT	178270202	51782	9010852	2618	186344648.7	54128	936405.27	272
2034	190839394	54602	Gasoline - On Road VMT	181657336	51975	9182058	2627	189885197	54328.99	954196.97	273.01
2035	197137094	55952	Gasoline - On Road VMT	187652028	53260	9485066	2692	196151408.5	55672.24	985685.47	279.76
2036	203642618	57336	Gasoline - On Road VMT	193844545	54578	9798073	2758	202624404.9	57049.32	1018213.09	286.68
2037	210362825	58755	Gasoline - On Road VMT	200241415	55928	10121410	2827	209311010.9	58461.23	1051814.125	293.775
2038	217304798	60208	Gasoline - On Road VMT	206849381	57311	10455417	2897	216218274	59906.96	1086523.99	301.04
2039	224475856	61697	Gasoline - On Road VMT	213675411	58729	10800445	2968	223353476.7	61388.52	1122379.28	308.485
2040	231883559	63542	Gasoline - On Road VMT	220726699	60485	11156860	3057	230724141.2	63224.29	1159417.795	317.71
2041	239535717	65442	Gasoline - On Road VMT	228010680	62293	11525037	3149	238338038.4	65114.79	1197678.585	327.21
2042	247440395	67399	Gasoline - On Road VMT	235535033	64156	11905362	3243	246203193	67062.01	1237201.975	336.995
2043	255605928	69414	Gasoline - On Road VMT	243307689	66074	12298239	3340	254327898.4	69066.93	1278029.64	347.07
2044	264040924	71490	Gasoline - On Road VMT	251336843	68050	12704081	3440	262720719.4	71132.55	1320204.62	357.45
2045	272754275	73775	Gasoline - On Road VMT	259630959	70225	13123316	3550	271390503.6	73406.13	1363771.375	368.875
2046	281755166	76133	Gasoline - On Road VMT	268198780	72470	13556386	3663	280346390.2	75752.34	1408775.83	380.665
2047	291053086	78567	Gasoline - On Road VMT	277049340	74787	14003746	3780	289597820.6	78174.17	1455265.43	392.835
2048	300657838	81079	Gasoline - On Road VMT	286191968	77178	14465870	3901	299154548.8	80673.61	1503289.19	405.395
2049	310579547	83671	Gasoline - On Road VMT	295636303	79645	14943244	4026	309026649.3	83252.65	1552897.735	418.355
2050	320828672.1	86432	Gasoline - On Road VMT	305392301	82273.285	15436371	4159	319224528.7	85999.98	1604143.36	432.160715
2016	10538749	15555	Diesel - On Road VMT	10538749	15555	0	0	10538749	15555	0	0
2017	10612520	15398	Diesel - On Road VMT	10612520	15398	0	0	10612520	15398	0	0
2018	10686808	15242	Diesel - On Road VMT	10686808	15242	0	0	10686808	15242	0	0
2019	10761615	15088	Diesel - On Road VMT	10761615	15088	0	0	10761615	15088	0	0
2020	10966086	15067	Diesel - On Road VMT	10966086	15067	0	0	10966086	15067	0	0
2021	11174442	15046	Diesel - On Road VMT	11174442	15046	0	0	11174442	15046	0	0
2022	11386756	15025	Diesel - On Road VMT	11386756	15025	0	0	11386756	15025	0	0
2023	11603104	15004	Diesel - On Road VMT	11603104	15004	0	0	11603104	15004	0	0
2024	11823563	14984	Diesel - On Road VMT	11823563	14984	0	0	11823563	14984	0	0
2025	12048211	14994	Diesel - On Road VMT	11929975	14846	118236	148	11987969.95	14919.03	60241.055	74.97
2026	12277127	15003	Diesel - On Road VMT	12037345	14710	239782	293	12215741.37	14927.99	61385.635	75.015
2027	12510392	15013	Diesel - On Road VMT	12145681	14576	364711	437	12447840.04	14937.94	62551.96	75.065
2028	12748090	15023	Diesel - On Road VMT	12254992	14442	493098	581	12684349.55	14947.89	63740.45	75.115
2029	12990304	15033	Diesel - On Road VMT	12365287	14310	625017	723	12925352.48	14957.84	64951.52	75.165

2030	13237119	15135	Diesel - On Road VMT	12600228	14407	636891	728	13170933.41	15059.33	66185.595	75.675
2031	13488625	15237	Diesel - On Road VMT	12839632	14504	648993	733	13421181.88	15160.82	67443.125	76.185
2032	13744908	15341	Diesel - On Road VMT	13083585	14602	661323	739	13676183.46	15264.3	68724.54	76.705
2033	14006062	15444	Diesel - On Road VMT	13332173	14701	673889	743	13936031.69	15366.78	70030.31	77.22
2034	14272177	15549	Diesel - On Road VMT	13585484	14801	686693	748	14200816.12	15471.26	71360.885	77.745
2035	14743159	15966	Diesel - On Road VMT	14033805	15198	709354	768	14669443.21	15886.17	73715.795	79.83
2036	15229683	16394	Diesel - On Road VMT	14496921	15605	732762	789	15153534.59	16312.03	76148.415	81.97
2037	15732263	16833	Diesel - On Road VMT	14975319	16023	756944	810	15653601.69	16748.84	78661.315	84.165
2038	16251427	17284	Diesel - On Road VMT	15469505	16453	781922	831	16170169.87	17197.58	81257.135	86.42
2039	16787724	17747	Diesel - On Road VMT	15979999	16894	807725	853	16703785.38	17658.27	83938.62	88.735
2040	17341719	18296	Diesel - On Road VMT	16507339	17416	834380	880	17255010.41	18204.52	86708.595	91.48
2041	17913996	18862	Diesel - On Road VMT	17052081	17955	861915	907	17824426.02	18767.69	89569.98	94.31
2042	18505158	19446	Diesel - On Road VMT	17614799	18510	890359	936	18412632.21	19348.77	92525.79	97.23
2043	19115828	20047	Diesel - On Road VMT	18196088	19083	919740	964	19020248.86	19946.77	95579.14	100.235
2044	19746650	20668	Diesel - On Road VMT	18796559	19673	950091	995	19647916.75	20564.66	98733.25	103.34
2045	20398290	21328	Diesel - On Road VMT	19416845	20302	981445	1026	20296298.55	21221.36	101991.45	106.64
2046	21071433	22010	Diesel - On Road VMT	20057601	20951	1013832	1059	20966075.84	21899.95	105357.165	110.05
2047	21766791	22714	Diesel - On Road VMT	20719502	21621	1047289	1093	21657957.05	22600.43	108833.955	113.57
2048	22485095	23440	Diesel - On Road VMT	21403245	22312	1081850	1128	22372669.53	23322.8	112425.475	117.2
2049	23227103	24189	Diesel - On Road VMT	22109553	23025	1117550	1164	23110967.49	24068.06	116135.515	120.945
2050											
2016			Biodiesel - On Road VMT								
2016			Ethanol - On Road VMT								
2016			CNG - On Road VMT								
2016			LPG - On Road VMT								
2016			LNG - On Road VMT								
2016			Methanol - On Road VMT								
2016	1	0	Electric - On Road VMT								
2016			Diesel - Transit VMT								
2016			Gasoline - Transit VMT								
2016			CNG - Transit VMT								
2016			LNG - Transit VMT								
2016			LPG - Transit VMT								
2016			Methanol - Transit VMT								
2016			Ethanol - Transit VMT								
2016			Biodiesel - Transit VMT								
2016			Electricity - Transit VMT								
2016			Diesel - Waterborne Energy (MMBtu)								
2016			Gasoline - Waterborne Energy (MMBtu)								
2016			Residual Fuel Oil - Waterborne Energy (MMBtu)								
2016			Electricity - Waterborne Energy (MMBtu)								

Appendix B
Draft Sustainability Checklist

CITY OF GALT

380 Civic Drive
Galt, California 95632
TELEPHONE (209) 366-7130

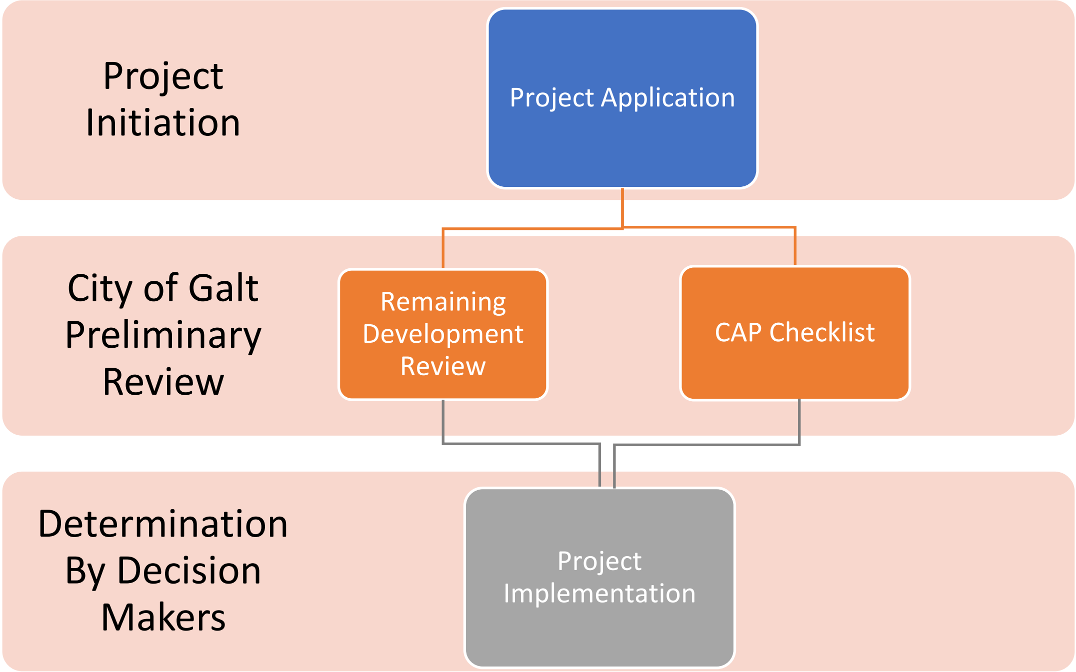
CLIMATE ACTION PLAN- DRAFT CONSISTENCY REVIEW CHECKLIST

The City of Galt's Climate Action Plan (CAP) establishes greenhouse gas (GHG) emission reduction targets for the City of Galt that are consistent with the State of California's. The purpose of the Draft CAP Consistency Review Checklist is to streamline the review process for new development projects which are subject to environmental review pursuant to the California Environmental Quality Act (CEQA). The Draft CAP Consistency Review Checklist will help the City and developers establish a project's compliance with the CAP and CEQA guidelines.

CEQA is a statute that requires state and local agencies to identify the significant environmental impacts of a project, and avoid or mitigate those impacts if feasible. The City of Galt's CAP qualifies under section 15183.5 of the CEQA Guidelines as a plan to reduce GHG emissions that may be used to analyze and mitigate significant impacts of the proposed project.

The diagram below shows the review process a project would follow under the checklist.

Streamlined Review of GHG Emissions in Development Projects



CLIMATE ACTION PLAN- DRAFT CONSISTENCY REVIEW CHECKLIST

Application Submittal Requirements

1. The CAP Consistency Review Checklist is required for all proposed new development.
2. The CAP Consistency Review Checklist must be submitted in addition to the basic set of requirements for project proposal.
3. All items listed to show that proposed project meets the requirements of the Checklist should also be listed in project description and shown on the submitted plans.

Application Information

Name of Applicant:____

Address: ____

Phone: ___________________________ E-mail: _______________________________

Address of Property: ____

APN of Property: ____

Applicant is owner of subject property: ☐ Yes ☐ No. If no, complete the following information and attach a letter of agency.

Name of Owner: ____

Address: ____

Phone: ___________________________ E-mail: _______________________________

Section 1- Sustainability Checklist Requirements

Instructions for answering the following questions can be found on page 10

Checklist Item (Check the appropriate box, and provide explanation for your answer)	**Yes**	**No**	**N/A**
1. Does the project include bicycle, pedestrian, and/or transit infrastructure? (Transportation Measure 1 & 2)			
Please explain how proposed project meets this requirement, or how it does not. If “not applicable,” please explain why.			
2. Are at least 50 percent of all proposed roadways and intersections within the project site designed with traffic calming and congestion management measures? (Transportation Measure 7)			
Please explain how proposed project meets this requirement, or how it does not. If “not applicable,” please explain why.			
3. Does the project include Electric Vehicle charging infrastructure and parking spaces as require by State or City standards? (Transportation Measure 5)			
Please explain how proposed project meets this requirement, or how it does not. If “not applicable,” please explain why			

Checklist Item (Check the appropriate box, and provide explanation for your answer)	**Yes**	**No**	**N/A**
4. If the project is located within a designated safe route to school, does the project include infrastructure supporting alternative transportation to school? Such infrastructure may include bicycle infrastructure (i.e. bicycle parking, bicycle lanes, bicycle paths) sidewalks, raised or signalized cross-walks, or areas for school busses to stop. (Transportation Measure 3)			
Please explain how proposed project meets this requirement, or how it does not. If “not applicable,” please explain why.			
5. If the project includes construction activity, will a sufficient proportion of project equipment meet the City’s mobile source emissions reductions requirements? Please refer to directions attached to this checklist to determine the mobile source emissions reduction requirements for your project. (Transportation Measure 9)			
Please explain how proposed project meets this requirement, or how it does not. If “not applicable,” please explain why.			
6. Does the project meet the City or State requirements for zero net energy (ZNE) structures and on-site renewable energy generation? (Building Efficiency Measure 2)			
Please explain how proposed project meets this requirement, or how it does not. If “not applicable,” please explain why.			

Checklist Item (Check the appropriate box, and provide explanation for your answer)	**Yes**	**No**	**N/A**
7. If the project includes the use of large amounts of high global warming potential gases (e.g. refrigerants, aerosol products such as paint, spray foam insulation, etc.) has the project been designed to minimize or off-set the release of such gases? (Building Efficiency Measure 3)			
Please explain how proposed project meets this requirement, or how it does not. If "not applicable," please explain why.			
8. Does the project include provision of adequate recycling and green waste facilities? (Waste Measure 1 & 2)			
Please explain how proposed project meets this requirement, or how it does not. If "not applicable," please explain why.			
9. Does the project include urban tree planting in compliance with the City's requirements? (Land Use Measure 3)			
Please explain how proposed project meets this requirement, or how it does not. If "not applicable," please explain why.			

Checklist Item (Check the appropriate box, and provide explanation for your answer)	**Yes**	**No**	**N/A**
10. Does the project include the provision of outdoor electrical outlets or infrastructure to support all electric landscaping equipment? Furthermore, if the project would include loading docks, does the project include electrical infrastructure sufficient to provide power to any transportation refrigeration units that may be used as part of project operations? (Transportation Measure 9)			
Please explain how proposed project meets this requirement, or how it does not. If "not applicable," please explain why.			

Section 2- Sustainable Design Options

In addition to the foregoing questions, new development shall also meet at least two of the following requirements:

☐ Does the project include reuse or redevelopment of an existing building or previously developed parcel?

☐ Does the project constitute an infill project?
Projects considered infill must be located in an urban area on a site that has either been previously developed or adjoins existing development on at least 75 percent of the site's perimeter.

☐ Does the project include a mix of land uses?
A mix of land uses includes any combination of at least two of the following: residential, commercial, institutional (e.g., elementary school, middle school, etc.), public park, or industrial. Uses may be mixed vertically or horizontally.

☐ Does the project include sustainable design practices (e.g. south facing windows, sustainable or local building materials, water efficient landscaping, natural ventilation, etc.)?

☐ Does the project include permanent protection of high-quality farmland through the use of conservation easements, or rezoning or general plan amendments to remove low-density residential development as a potential use of the farmland to be conserved?

☐ Does the project include the use of all electric appliances, or otherwise reduce the amount of natural gas consumed on-site (e.g. by installing electric or solar powered water heating systems)?

☐ Will the project participate in a Transportation Management Association established by the City or other agencies, which encompass the City?

☐ Does the project include the purchase of carbon off-set credits or implementation of a carbon sequestration program sufficient to off-set 15 percent or more of the project's anticipated greenhouse gas emissions?

☐ Does the project exceed the on-site renewable energy standards required by the applicable California Building Standards Code?

Certification

I hereby certify that the answers to the questions above and the information in the attached exhibits present the data and information required for this initial evaluation to the best of my ability and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Signature: ___________________________________ Date: _________________________________

Directions for filling out the Draft CAP Consistency Review Checklist

Question 1: Does the project include bicycle, pedestrian, and/or transit infrastructure?

Explanation: The applicant must demonstrate how the proposed project would support alternative means of transportation through the incorporation of bicycle, pedestrian and/or transit infrastructure. Examples of bicycle infrastructure include bicycle lanes on new/existing roads, designated bicycle/pedestrian paths, construction of sidewalks along the project frontage that connect to pedestrian features within the project site or to existing or planned off-site pedestrian infrastructure, installation of bicycle parking spots, provision of space for bus turnouts or transit shelters. Some pieces of infrastructure complying with this question may also satisfy the requirements of Question 2 of this document, such as intersection bulb outs, raised cross-walks, rumble strips, and chicanes may also support alternative transportation by calming traffic speeds.

Question 2: Are at least 50 percent of all proposed roadways and intersections designed with traffic calming and congestion management measures?

Explanation: At least 50 percent of the proposed roadway segments and/or intersections shall be designed with traffic calming or congestion management measures. Such measures may include intersection bulb outs, raised cross-walks, rumble strips, chicanes, roundabouts, and one-way roads. Should the City’s Public Works Department determine that incorporation of such measures infeasible at a proposed development, the City’s Public Works Department, or other qualified City entity, shall prepare a written statement explaining why such measures would not be feasible, and the statement shall be appended to this checklist.

Question 3: Does the project include Electric Vehicle charging infrastructure and parking spaces as required by State or City standards?

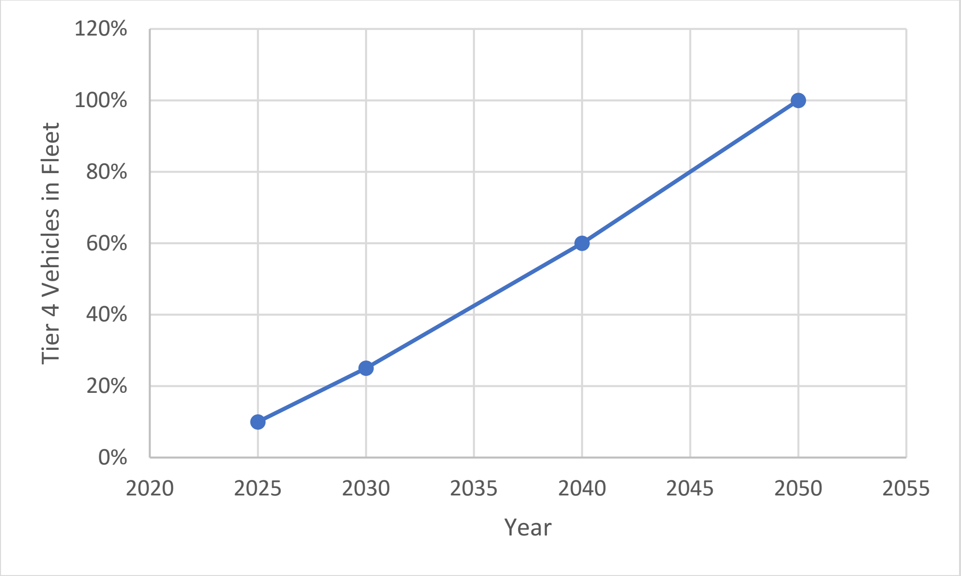
Explanation: The project shall provide for Electric Vehicle charging stations and preferential parking areas for such vehicles in compliance with City and State requirements. Electric Vehicle charging must be fully installed and operational prior to occupancy of proposed structures.

Question 4: If the project is located within a designated safe route to school, does the project include infrastructure supporting alternative transportation to school? Such infrastructure may include bicycle infrastructure (i.e. bicycle parking, bicycle lanes, bicycle paths) sidewalks, raised or signalized cross-walks, or areas for school busses to stop.

Explanation: If existing or planned transportation infrastructure adjacent to or within the project site has been designated for use as a safe route to school, the proposed project shall include pedestrian, bicycle, or school bus infrastructure. Such infrastructure shall comply with the City’s Bikeway Master Plan, and may be used to meet the requirements of Questions 1 or 2 of this section.

Question 5: If the project includes construction activity, will a sufficient proportion of project equipment meet the City’s mobile source emissions reductions requirements?

Explanation: The City’s CAP establishes a timeline for the use of U.S. EPA Tier 4 engines. Engines meeting the U.S. EPA Tier 4 engine requirements consume less fuel than non-tier engines, and emit fewer pollutants such as particulate matter and ozone pre-cursors. The City’s timeline for implementation of Tier 4 engines requires that 10 percent of construction fleets operating within the City in the year 2025 to meet the U.S. EPA's Tier 4 standard, with the proportion of vehicles in the fleet meeting such standards increasing to 30 percent in 2030, 60 percent in 2040 and 100 percent in 2050. The implementation schedule is depicted in the following graph



Project applicants may submit a construction equipment inventory to the City demonstrating compliance with the proposed measures. The City acknowledges that the use of alternatively fueled construction equipment, such as hybrid electric or natural gas powered equipment, could provide similar emissions reductions to Tier 4. As such, project applicants may meet the requirement of this measure through the use of alternatively fueled equipment, or increased use of grid powered equipment, to the satisfaction of the City.

Question 6: Does the project meet the City or State requirements for zero net energy (ZNE) structures and on-site renewable energy generation?

Explanation: Per the 2019 California Building Standards Code, all new residential buildings constructed within the State, which are three-stories tall or less, must include sufficient on-site renewable energy systems to meet 100 percent of the building's anticipate energy demand. For the purposes of this analysis, such standards represent ZNE for residential buildings, as all energy consumed on-site would be provided or off-set by energy created on-site. Non-residential structured developed within the City must be demonstrated to meet similar ZNE standards by the year 2030, or as required to meet the intervening California Building Standards Code.

Question 7: If the project includes the use of large amounts of high global warming potential gases (e.g. refrigerants, aerosol products such as paint, spray foam insulation, etc.) has the project been designed to minimize or off-set the release of such gases?

Explanation: If operation of the project includes the use of large amounts of high global warming potential gases, the project applicant shall provide the City with a comprehensive plan that demonstrates how releases of high global warming potential gases will be minimized to the extent practicable. Such plans may include demonstration of the efficiency measures incorporated into refrigeration systems, the use of air filtration devices, the substitution of non-high global warming potential gases where practicable, or other means to reduce or eliminate the release of such gases. If the reduction in releases of such gases cannot be demonstrated the project applicant shall demonstrate an alternative means of complying with this measure, for instance by entering into agreements to reduce the release of high global warming potential gases from other existing sources, or the purchase of greenhouse gas off-set credits equivalent to the level of emissions anticipated from project operations.

Question 8: Does the project include provision of adequate recycling and green waste facilities?

Explanation: Project plans shall show that new developments would include the provision of recycling and green waste collection services, unless the proposed development is itself a waste management-oriented development.

Question 9: Does the project include urban tree planting in compliance with the City’s requirements?

Explanation: Project plans shall show that new developments would include planting of trees sufficient to meet the City’s tree planting requirements in place at the time of project proposal.

Question 10: Does the project include the provision of outdoor electrical outlets or infrastructure to support all electric landscaping equipment? Furthermore, if the project would include loading docks, does the project include electrical infrastructure sufficient to provide power to any transportation refrigeration units that may be used as part of project operations?

Explanation: Project plans shall show that new developments include outdoor electrical outlets sufficient to power electric landscaping equipment. Should the project include loading docks, electrical infrastructure sufficient to provide supplemental power to any docked vehicles must be provided.