Community Climate Action Plan

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CITY OF ONTARIO

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Acronyms and Abbreviations

AB	Assembly Bill
ARB	California Air Resources Board
BAU	Business-As-Usual
BE	Building Energy
BMP	best management practice
C_2F_6	hexafluoroethane
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
Cal-EPA	California Environmental Protection Agency
CAPTAC	Climate Action Plan Technical Advisory Committee
CCAs	Community Choice Aggregations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFLs	Compact Fluorescent Light bulbs
CH_4	methane
City	City of Ontario
CO_2	carbon dioxide
CO_2e	CO2 equivalent
CPUC	California Public Utilities Commission
EIR	Environmental Impact Report
EM	existing measure
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESPs	energy service providers
FED	Functional Equivalent Document
GHG	greenhouse gas
GPS	Global Positioning Systems
GWh	gigawatt hours
GWP	global warming potential
HFCs	hydrofluorocarbons
ICF	ICF International
IEUA	Inland Empire Utilities Agency
IOUs	investor-owned utilities
IPCC	Intergovernmental Panel on Climate Change
kWh	kilowatt hours
LCFS	Low Carbon Fuel Standard
LGOP	Local Governments Operations Protocol
MCAP	Municipal Climate Action Plan
MPOs	metropolitan planning organizations
MT	metric ton
MW	megawatts
N_2O	nitrous oxide
NGOs	non-governmental organizations
NO_2	nitrous oxide
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
ODS	ozone-depleting substances
PACE	Property Assessment for Clean Energy
PFCs	perfluorocarbons

PM	planned measure
ppb	parts per billion
ppm	parts per million
ppt	parts per thousand
PS	Performance Standard for New Development
RAD	responsible appliance disposal
RPS	Renewable Portfolio Standard
RTPs	Regional Transportation Plans
SANBAG	San Bernardino Associated Governments
SAR	Second Assessment Report
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAMQD	South Coast Air Quality Management District
SCE	Southern California Edison
SCGC	Southern California Gas Company
SF_6	sulfur hexafluoride
UC	University of California
UNFCCC	United Nations Framework Convention on Climate Change
VMT	vehicle miles traveled
W	waste
WT	wastewater

CITY OF ONTARIO

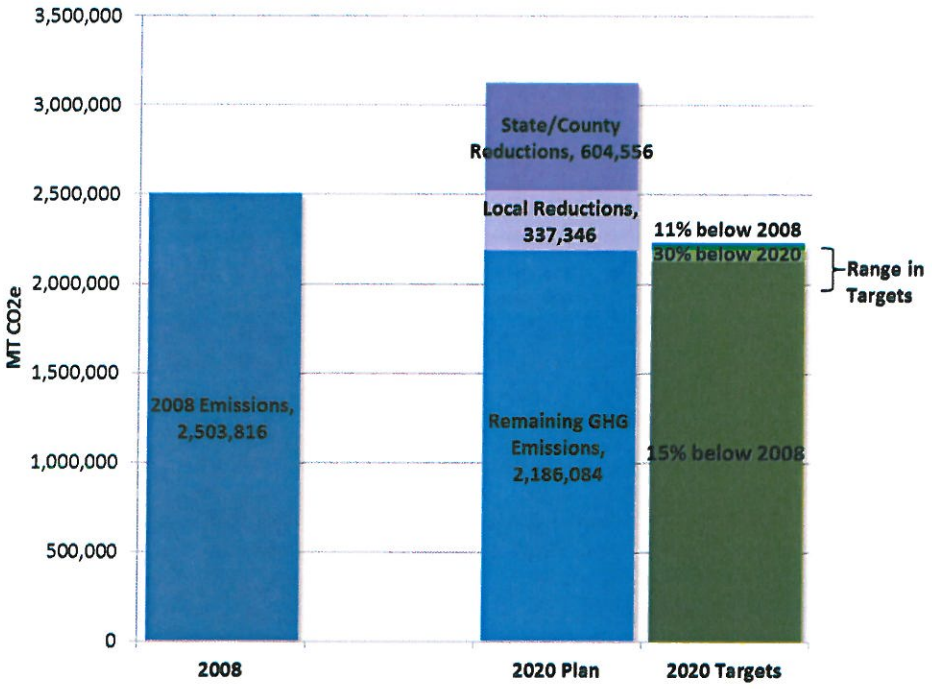
Community Climate Action Plan

Executive Summary

Executive Summary
Overview of the Community Climate Action Plan

With the approval of The Ontario Plan (TOP) and Final Environmental Impact Report (FEIR), the City of Ontario committed to the development of a Community Climate Action Plan with the GHG emissions reduction goal of 30% below business-as-usual (BAU)[1] 2020 levels. This goal is roughly equivalent to the Scoping Plan adopted by the State of California in 2008 that recommends a target of 15% below current emissions levels. The Scoping Plan was developed to implement Assembly Bill (AB) 32 and provides a recommended goal that local communities adopt a GHG reduction target of 15% below "current" (2005-2008) levels by the year 2020. Subsequently, based on the Air Resources Board's (ARB) latest GHG inventory data for California, the state would have to reduce statewide emissions by 10 – 11% (not 15%) to meet 1990 levels. As shown within Figure ES-1, the City is within the recommended target range of the Scoping Plan.

Figure ES-1. Summary of GHG Emissions Reductions and Range in Targets (MT CO_2e)



[1] Business-As-Usual for 2020 refers to no additional efficiency measures (e.g. Cal Green code, Title 24 revisions, etc.) being applied to future growth for projection purposes to determine 2020 baseline emissions.

The primary purpose of the Community Climate Action Plan (CAP) is to design a feasible strategy to reduce GHG emissions generated from community activities that is consistent with statewide Scoping Plan GHG reduction efforts. Community activities are defined as those activities occurring in association with the land uses and activities within the City's jurisdictional boundary, generally from sources of emissions that the City's community can influence or control.

To develop the CAP, a GHG inventory of community emissions for calendar year 2008 and a forecasted future-year community emissions inventory for calendar year 2020, was prepared. For a detailed description of the city's GHG inventory, see Appendix A. Simultaneous with the inventory development work, the City began reviewing the measures listed within the TOP Final EIR. Upon further research of feasible measures and refinements, a listing of candidate measures was selected and analyzed in greater detail. Based on each measure's reduction effectiveness and feasibility to reduce emissions, the draft list of measures was developed for inclusion in this CAP.

City of Ontario Community Greenhouse Gas Emissions

The City of Ontario has committed to preparing both a community climate action plan and a municipal climate action plan. Emissions generated by the City's municipal operations are encapsulated in the overall community emissions inventory (i.e., most municipal emissions are a small subset of the larger community emissions).

The 2008 inventory of community GHG emissions was calculated for sectors identified by AB 32. This 2008 inventory is a baseline from which to forecast future-year (2020) emissions and establish GHG reduction targets. The 2020 emissions estimate, or forecast, represents *business as usual* (BAU) emissions and does not take into account any new reduction measures. The GHG emissions inventory was developed using methods and procedures approved by the state and local air quality management agencies. The primary protocols consulted for the analysis were as follows:

- Local Governments Operations Protocol (LGOP) for the quantification and reporting of greenhouse gas emissions inventories (California Air Resources Board 2010b).
- 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories (IPCC 2006).
- 2009 General Reporting Protocol (Version 3.1) for reporting entity-wide GHG emissions (California Climate Action Registry 2009).
- 2012 ICLEI U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (ICLEI 2012).

As is the standard practice, the GHG inventory is presented in metric tons (MT) of CO_2 equivalent (CO_2e) in all figures and tables, unless otherwise denoted. Presenting inventories in CO_2e allows one to characterize the complex mixture of GHG as a single unit, taking into account that each GHG has a different global warming potential (GWP).

GHG emissions can be defined as either direct (emissions that occur at the end use location, such as natural gas combustion for building heating) or indirect (emissions that result from consumption at the end use location but occur at another location, such as emissions that occur at the power plant itself but result from residential electricity use of in-home appliances or other uses). This report addresses both types of emissions.

In 2008, the City's community activities resulted in the release of approximately 2.5 million MT CO_2e—roughly equivalent to the amount of GHGs released by the consumption of more than 280 million gallons of gasoline. In 2008, the largest source of emissions, representing 38% of the inventory, was emissions associated with on-road transportation (~940,000 MT CO_2e). The second largest source of emissions was from building energy use (~930,000 MT CO_2e; 37%).

Under business-as-usual conditions, emissions associated with community activities are projected to increase to 3.1 million MT CO_2e by 2020—an increase of approximately 25% over 2008 levels. On-road transportation and building energy use are expected to remain the largest sources of emissions in 2020 (Table ES-1).

Table ES-1. City of Ontario Community GHG Inventories: 2008 Baseline and 2020 BAU Forecast (MT CO2e)[a]

	2008		2020	
Emissions Sector	**MT CO_2**	**% of Total**	**MT CO_2**	**% of Total**
Building Energy Use	928,409	37%	1,237,006	40%
On-Road Transportation	942,020	38%	1,219,767	39%
Off-Road Equipment	176,314	7%	229,069	7%
Agriculture	356,131	14%	323,390	10%
Solid Waste Management	60,000	2%	64,326	2%
Wastewater Treatment	6,587	0.3%	8,781	0.3%
Water Transport, Distribution, and Treatment	29,044	1%	38,575	1%
SF_6 from Electricity Consumption[b]	5,310	0.2%	7,072	0.2%
Total Emissions	**2,503,816**	**100%**	**3,127,987**	**100%**
Excluded Emissions[c]				
Stationary Sources	405,195	N/A	511,548	N/A
Airport-Related Traffic	28,736	N/A	75,976	N/A
Subtotal Excluded Emissions	**433,932**	**N/A**	**587,525**	**N/A**

Values may not sum due to rounding. For a detailed description of the city's 2008 GHG inventory and 2020 forecast, see Appendix A.

[a] The calculations presented above contain a certain amount of uncertainty. Quantitative error analyses are complicated, require detailed statistical equations, and are outside the scope of the consultant's work. The U.S. Environmental Protection Agency (EPA) estimates an error range of -1% to 6% for the 2009 national inventory. Given that the City's 2008 inventory employed similar methods and analysis factors, a similar level of error can be expected, yielding an emissions range of 2,478,778 MT CO_2e to 2,654,045 MT CO_2e. The uncertainty associated with the 2020 forecast is likely higher due to the assumptions associated with future socioeconomic data.

[b] SF_6 = sulfur hexafluoride

[c] The City elected not to include these emissions in its inventory. Amounts are provided for informational purposes only and were not used to develop the CAP reduction goal.

City of Ontario Greenhouse Gas Reduction Plan

The City of Ontario has committed to a greenhouse gas emissions reduction target of 30% below business-as-usual 2020 levels, through the development of a Community Climate Action Plan (CAP). The measures described in this CAP would, if fully implemented, result in 2020 emissions of 30% below 2020 business-as-usual levels, with reductions of approximately 942,000 MT CO_2e.

The City's Community CAP includes existing state measures and existing and proposed local measures that would result in GHG emissions reductions from 2008-2020.[2] Existing programs that affected emissions in 2008 were already incorporated into the GHG inventory and forecast. Any reductions from existing or planned programs in the CAP come from actions not implemented yet in 2008. State mandates do not require additional local legislative or administrative action (e.g., approving any new or additional regulations), but would result in local GHG reductions and would often require local effort to implement state mandates. To supplement statewide initiatives, the City has identified a series of reduction measures that are either currently being implemented or would be implemented by the City before 2020. The reduction measures are grouped into nine broad sectors that would affect emissions throughout community activities. The measures include programs that improve building energy efficiency, increase use of renewable energy, reduce water consumption, reduce waste, and other measures. A summary of the community GHG reduction measures selected for inclusion in the Community CAP are presented in Table ES-2. This table presents the measure name and a simple definition of each. The definition is based on the practical application of each measure, and indicates the action necessary in order to achieve each measure. The official measure descriptions are presented in Chapter 3. For a detailed description of the City's GHG reduction measures, including quantification methods, sources and assumptions, see Appendix C.

Approximately 64% of the reductions needed to achieve the City's GHG reduction goal are achieved through state- and county-level programs, and 36% through City-level programs. The largest GHG reductions are identified in the areas of building energy (both energy efficiency and renewable energy), agriculture, and transportation (Table ES-2 and Figure ES-2).

The measures described in this Community CAP outline a path for reducing community emissions in conjunction with planned state actions. When combined with state efforts, the GHG reduction measures described in the City's Community CAP would enable the City to reduce its GHG emissions by an estimated 942,000 MT CO2e, which meets the emissions reduction target of 30% below 2020 levels. Actions not currently quantified, as well as local effects of the state's cap-and-trade program,[3] will likely contribute additional reductions to the City's goal.

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[2] Currently, the only federal mandate that would specifically reduce GHG emissions in Ontario are the Corporate Average Fuel Economy (CAFE) standards. These standards were adopted to be consistent with previously passed California vehicle efficiency standards per AB 1493 (Pavley). As a result, these standards are subsumed in the state regulations.

[3] The effects of California's cap-and-trade system, which took effect in 2013, are not included in the analysis in this CAP. However, it is expected that by 2020, the cap-and-trade system will result in additional reductions in the building energy and transportation sectors due to changes in energy prices directly (at the consumer level) or indirectly (at the producer level). It has been estimated that the cap-and-trade system might result in the following energy price changes by 2020: electricity increase of 1 to 3%, natural gas increase of 7 to 16%, gasoline increase of 4 to 8%, and diesel increase of 2 to 4% (California Air Resources Board 2010b). Consumer response to these changes in energy prices might result in additional reductions in building energy and transportation fuel consumption beyond those included in estimates of the state and local measures included in this CAP, but are not estimated at this time.

Table ES-2. Summary of Community GHG Reduction Measures

Measure Name	Measure Description
Performance Standard For New Development	
PS-1	**Performance Standard for New Development**: New projects emitting more than 3,000 MT CO_2e per year need to reduce emissions by 25%.
BMP-1	**Performance Standard for New Development; Best Management Practices**: New projects emitting less than 3,000 MT CO_2e per year to exceed Title 24 Energy Efficiency Standards by at least 5%, or equivalent level of GHG emission reduction.
Building Energy	
Energy-1	**CAP Consistency:** Ensure that the City's local Climate Action, Land Use, Housing, and Transportation Plans are aligned with, support, and enhance any regional plans that have been developed consistent with state guidance to achieve reductions in GHG emissions.
Energy-2	**Regional Cooperation:** Coordinate with special districts, nonprofits, and other public organizations to share resources, achieve economies of scale, and develop green building policies and programs that are optimized on a regional scale.
Energy-3	**Energy Efficiency Funding for Existing Low-Income Residents**: Partner with community services agencies to fund energy efficiency projects, including heating, ventilation, air conditioning, lighting, water heating equipment, insulation, and weatherization, for low income residents. Provide permitting-related and other incentives for energy efficient building project.
Energy-4	**Energy Efficiency Incentives and Programs to Promote Retrofits for Existing Residential Buildings:** Incentivize, or otherwise support, voluntary energy efficiency retrofits of existing residential buildings to achieve reductions in natural gas and electricity usage. Adopt standards and/or promote voluntary programs that retrofit indoor lights, electric clothes dryers, energy-star thermostats, window seals, duct sealing, air sealing, and attic insulation.
Energy-5	**Energy Efficiency Incentives and Programs to Promote Retrofits for Existing Non-Residential Buildings:** Voluntary programs for existing non-residential facilities improve building-wide energy efficiency by 20% by 2020.
Energy-6	**Streetlights**: Adopt outdoor lighting standards to reduce electricity consumption. Require 40% reduction in energy use from traffic signals and streetlights by 2020.
Renewable Energy	
Renewable Energy-1	**Solar Installation for Existing Non-Residential for Major Rehabilitations or Expansions:** Install solar photovoltaic panels on nonresidential buildings greater or equal to 25,000 square feet in size requiring discretionary permits for major rehabilitations or expansions (additions of 25,000 square feet of office retail/commercial or 100,000 square feet of industrial/warehouse floor area).
Renewable Energy-2	**Solar Installation in Existing Single Family Housing:** Install solar panels on 22% of existing single-family homes by 2020.
Renewable Energy-3	**Solar Installation in Existing Nonresidential Buildings:** Install solar panels on 32% of existing nonresidential buildings by 2020.

Measure Name	Measure Description
Wastewater Treatment	
Wastewater-1	**Recycled Water:** Require 50% of all water used for non-potable sources to be recycled water by 2020. Require all new parks and schools to use 100% recycled water for non-potable outdoor uses, as feasible. Develop public educational materials that support and encourage the use of recycled water. Adopt a City Municipal facility goal of 50% use of recycled water for non-potable sources.
Wastewater-2	**Waste-to-energy/Methane Recovery:** Encourage Inland Empire Utilities Agency (IEUA) to implement waste-to-energy projects at the IEUA RP-1 wastewater treatment plant by 2020, and to utilize collected gas to fuel onsite stationary sources.
Solid Waste Management	
Waste-1	**Waste Diversion:** Divert 75% of city-generated waste from landfills.
Waste-2	**Construction and Demolition Waste Recovery Ordinance:** Implement an ordinance requiring building projects to recycle or reuse at least 50% of unused or leftover building materials.
On-Road Transportation	
Trans-1	**Expand Public Transportation Infrastructure:** Work with appropriate agencies to create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car-sharing, bicycling, and walking.
Trans-2	**Transit Frequency and Speed:** To the extent feasible, support shorter transit passenger travel time through reduced headways and increased speed. Support regional transit operator to reduce average fleet travel time by 5 minutes.
Trans-3	**"Smart Bus" Technology**: Collaborate with LA Metro, Metrolink, and Omnitrans to implement "Smart Bus" technology.
Trans-4	**Expand Public Transportation Participation:** Collaborate with regional transit operator on programs to increase use of the City's public transportation system.
Trans-5	**Low- and Zero-Emission Vehicles:** Support and promote the use of low-and zero-emission vehicles in the City.
Trans-6	**Vehicle Idling**: Prohibit idling of Heavy Duty Trucks (greater than 26,000 gross vehicle weight) for longer than 3 minutes.
Trans-7	**Parking Policy:** Adopt a comprehensive parking policy that encourages carpooling and the use of alternative transportation, including providing parking spaces for car-share vehicles at convenient locations accessible by public transportation. Consider requirements for the following to reduce vehicle miles traveled (VMT) within the City by 2%. Designate 5% of downtown parking spaces for ride-sharing vehicles.
Trans-8	**Event Parking:** Consider establishing policies and programs to reduce onsite parking demand and promote ride-sharing during events at the Ontario Convention Center and other event venues. Consider a goal to reduce VMT at major events by 2%.
Trans-9	**Roadway Management:** Implement traffic and roadway management strategies to improve mobility and efficiency, and reduce associated emissions. Consider a goal to reduce community vehicle fuel consumption by 2%.

Measure Name	Measure Description
Trans-10	**Signal Synchronization:** Evaluate potential efficiency gains from further signal synchronization. Synchronize traffic signals throughout the City and with adjoining cities while allowing free flow of mass transit systems. Require continuous maintenance of the synchronization system. Consider a goal to reduce City-wide vehicle fuel consumption by 2%.
Trans-11	**School Transit Plan:** Encourage local school districts to develop school transit plans to substantially reduce automobile trips to, and congestion surrounding, schools. (According to some estimates, parents driving their children to school account for 20–25% of the morning commute.) Plans may address, e.g., necessary infrastructure improvements and potential funding sources, replacing older diesel buses with low or zero-emission vehicles, mitigation fees to expand school bus service, Safe Routes to School programs, and other formal efforts to increase walking and biking by students. Although this measure is not within the City's authority, Ontario can work with local school districts to develop these plans.
Trans-12	**Ridesharing Programs:** Coordinate with local agencies to promote ride sharing programs in Ontario (CAPCOA 2010). Although the City does not have the legal authority to impose trip demand management programs on project applicants or employers, Ontario can work with local agencies to develop these programs. Consider a goal to reduce City-wide VMT by 2% through mode-shifts from single-occupancy vehicles to carpools. Facilitate employment opportunities that minimize the need for private vehicle trips. The City could also work with the County to participate in their rideshare measure, which includes exploring financial programs for the purchase or lease of rideshare vehicles, encouraging community car sharing through city employers, and encouraging creation of community rideshare incentives (gas cards, commuter-tax benefits, guaranteed ride home programs, etc.).
Trans-13	**Bicycle and Pedestrian Infrastructure Plan:** Adopt a comprehensive bicycle and pedestrian infrastructure plan to expand the City's bicycle and pedestrian network. This plan would encourage residents and employees to use bicycles and walking as a method of transportation. Consider a goal to reduce City-wide VMT by 2% through mode-shifts from single-occupancy vehicles to bicycles.
Trans-14	**Development Standards for Bicycles:** Establish standards for new development and redevelopment projects to support bicycle use. Consider a goal to reduce VMT resulting from new development by 4% through mode-shifts from single-occupancy vehicles to bicycles.
Trans-15	**Smart Growth and Infill:** Encourage high-density, mixed-use, infill development and creative reuse of brownfield, under-utilized and/or defunct properties within the urban core. Consider a goal to reduce VMT resulting from new development by 5%.
Trans-16	**Transit-Oriented Development:** Identify transit centers appropriate for mixed-use development, and promote transit-oriented, mixed-use development within these targeted areas. Consider a goal to reduce VMT resulting from new development by 2%.
Off-Road Equipment	
Off Road-1	**Idling Ordinance:** Prohibit idling of heavy duty off-road construction vehicles to no more than 3 minutes.
Off Road-2	**Landscaping Equipment:** Support landscape equipment replacement programs to replace 75% of all landscaping equipment with electric equipment (945 total pieces of landscaping equipment replaced).

Measure Name	Measure Description
Agriculture	
Agriculture-1	**Methane Emissions Reduction for Animal Operations:** Support dairies (and other animal operations) to consider existing and new technologies and methods to control emissions from enteric fermentation and manure management and assess the feasibility and cost effectiveness of these technologies. Animal operations should strive to capture as much methane from manure management as feasible. Captured biogas can also be used in place of natural gas for heating, converted to vehicle fuel, used to replace gasoline and diesel, or combusted in a generator to produce renewable electricity.
Water Transport, Distribution, and Treatment	
Water-1	**Water Conservation for Existing Buildings:** Implement a program to renovate existing buildings to a higher level of water efficiency. Require 25% of existing buildings within the community to achieve a 25% reduction in water use. This measure will reduce both indoor and outdoor water use.
Water-2	**Irrigation Monitoring and Management System (Outdoor):** Install water monitoring and management systems (Smart controllers, etc.) across the community to reduce irrigation water needs and reduce the City's total community-wide water consumption by 10% by 2020. This measure will reduce outdoor water use.
Water-3	**Water System Efficiency:** Maximize efficiency at drinking water treatment, pumping, and distribution facilities, including development of off-peak demand schedules for heavy commercial and industrial users. Design and implement peak load management and demand response programs for water supply, treatment, and distribution, including interface with existing automated systems for building energy management and supervisory control and data acquisition (SCADA) systems.
Water-4	**SB X7:** Urban water agencies throughout California are required to increase water conservation to achieve a statewide goal of a 20% reduction in urban per capita use by 2020 per SB X7. The Ontario 2010 Urban Water Management Plan outlines the approaches to achieving that reduction.
Miscellaneous	
Misc-1	**Climate Change Awareness:** Utilize a variety of media outlets to promote climate change awareness and GHG reduction.
Misc-2	**Carbon Sequestration:** Establish a City-wide carbon sequestration project and sequestration goal of 1,000 metric tons of CO_2 per year.
Misc-3	**Shade Tree Planting:** Plant 1,000 trees per year from 2012–2020 for a total of 9,000 trees by 2020.
Misc-4	**Refrigeration and Air Conditioning Disposal:** Institute an ordinance requiring residences, businesses, and city facilities to practice responsible appliance disposal (RAD) for all decommissioned units, including refrigerators/freezers, window air-conditioning units, and dehumidifiers.
Misc-5	**Pervious Paving:** Promote the use of pervious concrete for pavement projects. Explore grant funding opportunities for pervious concrete.
Misc-6	**Infiltration:** Promote onsite infiltration, as required by the National Pollutant Discharge Elimination System (NPDES) Permit. Promote the use of pervious concrete and asphalt for pavement and parking lot projects.

Table ES-3. Summary of GHG Reductions—Sector View

GHG Emissions Sector	GHG Emission Reductions (MT CO_2e)	Percent Reduction in Sector
Building and Renewable Energy[a]	393,300	31.8%
On-Road Transportation[b]	365,212	29.9%
Off-Road Equipment[b]	28,166	12.3%
Solid Waste Management[c]	26,265	40.8%
Wastewater[d]	649	7.4%
Water Transport, Distribution, and Treatment[e]	6,511	16.9%
Agriculture	80,352	24.8%
SF_6 From Electricity Consumption[f]	1,678	23.7%
Performance Standard for New Development[g]	39,769	N/A
Projected Measure Reduction 2020 Totals	**941,902**	**N/A**
30% Reduction Target	***938,396***	
Exceeds Reduction Target	***3,506***	
% Below Projected Levels	***30.1%***	

For a detailed description of the City's GHG reduction measures, including quantification methods, sources and assumptions, see Appendix C.

[a] Includes GHG benefits from the Renewables Portfolio Standard (state), energy conservation measures, increased use of renewable power sources, shade tree planting, and reductions in building energy use related to wastewater treatment measures (increased wastewater treatment operational efficiency) and water conservation measures. When water consumption in buildings is reduced, and much of that water would have been heated (dishwashing, clothes washing, sinks, showers, etc.) using natural gas or electric heaters, building energy use is reduced at the same time.

[b] Includes GHG benefits from the Low Carbon Fuel Standard.

[c] Includes GHG benefits from San Bernardino County Landfill Methane Capture Systems (County-1).

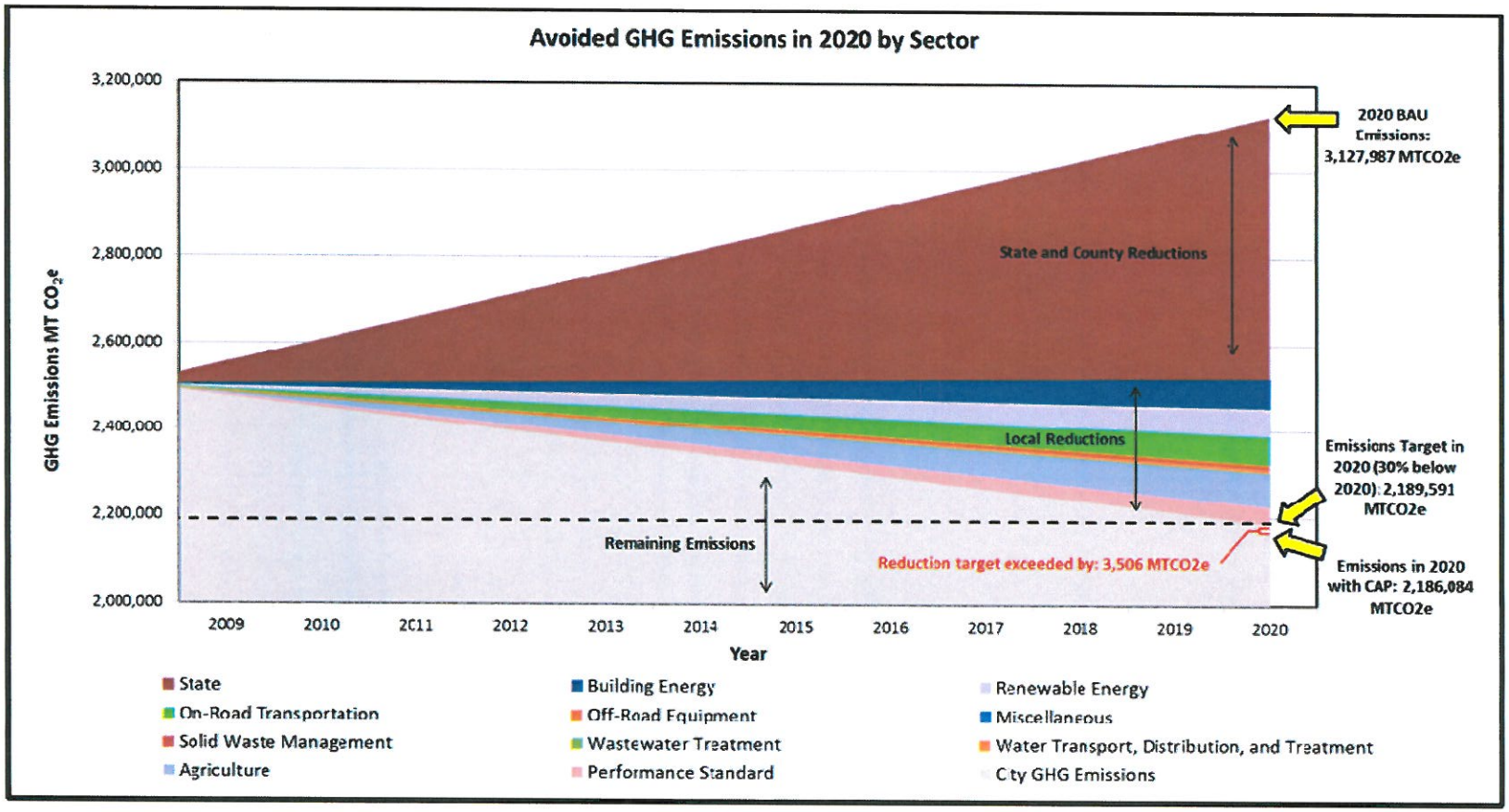
[d] Includes reductions in wastewater treatment fugitive emissions only.

[e] Includes GHG benefits from embedded energy savings from water transport, distribution, and treatment.

[f] Includes reductions in SF_6 due to any measure that reduces grid electricity.

[g] Not a sector of the inventory.

Figure ES-2. Summary of GHG Emissions Reductions by Sector (MT CO_2e)



Relationship to the City's Municipal Climate Action Plan

The primary purpose of the City's Municipal Climate Action Plan (MCAP) was to design a feasible strategy to reduce GHG emissions generated by the City's municipal operations (e.g., City-owned facilities, vehicle fleets) consistent with the goal of a 30% reduction of GHG emissions by year 2020. The MCAP includes a GHG inventory of municipal emissions for calendar year 2008 and a forecasted future-year municipal emissions inventory for calendar year 2020. Simultaneous with the inventory development work, the City selected candidate measures based on each measure's reduction effectiveness and feasibility. When combined with state efforts, the GHG reduction measures described in the City's MCAP would enable the City to reduce its municipal GHG emissions by an estimated 10,000 MT CO_2e, which exceeds the emissions reduction target of 30% below 2020 levels or approximately 8,500 MT CO_2e.

The majority of emissions generated by the City's municipal operations are encapsulated in the overall community emissions inventory detailed in this Community CAP (i.e., municipal emissions are a small subset of the larger community emissions). While those reduction measures detailed in the MCAP would solely address municipal emissions, the measures detailed in this Community CAP would address community-wide activities (those activities occurring in association with the land uses and activities within the City's jurisdictional boundary).

Relationship to California Environmental Quality Act

In order to comply with the California Environmental Quality Act (CEQA), the environmental impacts of this Community CAP must be analyzed, and any potentially significant impacts must be reduced to the extent feasible. The City of Ontario has adopted The Ontario Plan FEIR that includes a programmatic GHG analysis of mitigation measures set forth under Mitigation Measures 6-1 through 6-6. Consistent with CEQA (Public Resources Code section 21000 et seq.) and the State CEQA Guidelines (Title 14 of the California Code of Regulations section 15000 et seq.) Ontario proposes to tier the environmental review of this Community CAP from the previously adopted TOP FEIR. The previously adopted TOP FEIR addressed development impacts in Ontario comprehensively and a review of the potential secondary environmental impacts of implementation of the Community CAP does not indicate that it would result in any new significant environmental impacts or substantially more severe environmental impacts than already disclosed in the adopted TOP FEIR.

Future projects within the City limits must also comply with CEQA. However, once this Community CAP is adopted, analysis of environmental impacts associated with greenhouse gas emissions must simply prove project compliance with the Community CAP, rather than produce the traditional analysis of all GHG emissions associated with the proposed project and project compliance with all relevant policies and regulations. This approach is allowed per CEQA Guidelines Section 15183.5, which specifically set forth the requirements for comprehensive greenhouse gas reduction plans and tiering of analysis for project CEQA compliance.

Implementing the Plan

The success of the Community CAP will depend on cooperation, commitment, and participation by stakeholders and all City departments. To that end, the City has developed an implementation plan that creates an infrastructure for ensuring the goals of the Community CAP are achieved.

In January 2011, the Climate Action Plan Technical Advisory Committee (CAPTAC) was formed. The 16-member CAPTAC is composed of department directors and managers designated by the heads of each City agency and responsible for development and implementation of the Community CAP. The CAPTAC is charged with assessing and refining the measures identified in the Community CAP.

In addition to formation of the CAPTAC, the City identified the need for a sustainability position to coordinate City efforts and the development of the Community CAP. The City appointed a Sustainability Program Manager in July 2010 to coordinate and implement the Community CAP efforts and sustainability programs.

The City recognizes that implementation of the Community CAP will require interagency collaboration coupled with strategic public funding by the City, regional government agencies, and the state for capital projects and outreach and education efforts. The City has committed to engaging in such collaboration and will continue to seek funding for those implementation measures not yet funded.

Regular monitoring is important to ensure programs are functioning as they were originally intended. The CAPTAC will be responsible for developing monitoring procedures and amending the Community CAP as opportunities arise. Each department will be responsible for specific Community CAP measure monitoring and will provide regular reports that track GHG emission reductions to the CAPTAC.

Consistent with the 2010 Certified EIR for TOP, the City will conduct periodic comprehensive reviews of the Community CAP on a 3-year schedule that will involve an appropriate level of re-inventorying of emission sources in order to obtain a more complete understanding of GHG conditions and results of Community CAP measure progress. The City shall update this Community CAP every three years, to incorporate improved methods, better data, and more accurate tools and methods, and to assess progress. If the City is not on-schedule to achieve the GHG reduction targets of the Community CAP, additional measures shall be implemented.

CITY OF ONTARIO

Community Climate Action Plan

Chapter 1: Overview

Chapter 1
Overview

1.1 Background

This document is the City of Ontario Community Climate Action Plan (CAP) for reducing greenhouse gas (GHG) emissions associated with community activities to a level that is 30% below projected 2020 levels. This CAP demonstrates that the City of Ontario (City) is doing its fair share to assist the state of California in reaching its GHG reduction goals by 2020 as set forth in State regulations (Assembly Bill [AB] 32). This CAP includes the following.

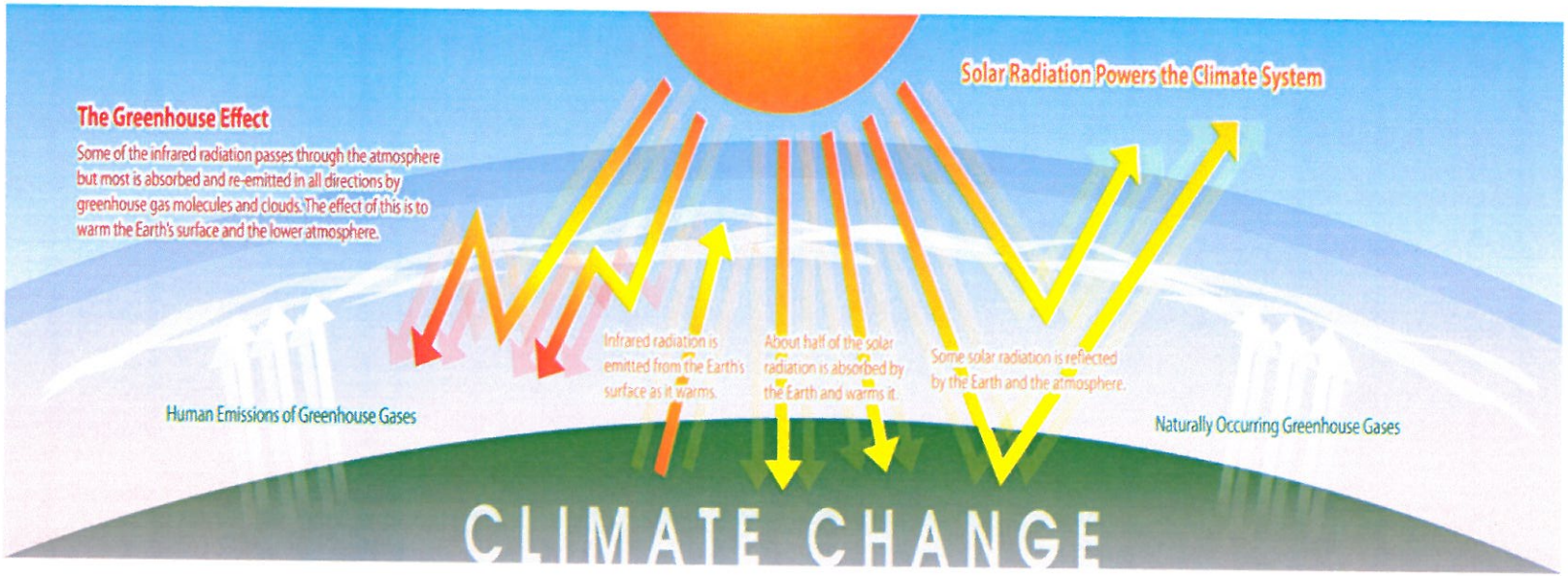
- Basic information about the science of climate change and a summary of state and federal level regulatory activity related to GHG emissions.
- An inventory of all GHG emissions that result from community activities in the City in 2008 (the baseline year).
- A projection of the GHG emissions that would result from community activities in the City in 2020 if the City or the state took no additional action to reduce emissions (the *business as usual* [BAU] forecast).
- A list of measures/programs that will likely be taken by the state and the City that will result in lower GHG emissions in 2020 than were projected.
- A prioritization of measures/programs that the City can pursue in order to reduce its emissions such that the CAP can be used as a decision-making tool.
- Recommendations for implementation, next steps, and future updates to this CAP.

1.1.1 Description of Greenhouse Gases

The temperature on Earth is regulated by a system commonly known as the "greenhouse effect," a natural process through which heat is retained in the troposphere. Greenhouse gases present in the Earth's lower atmosphere play a critical role in maintaining the Earth's temperature as they trap some of the long wave infrared radiation emitted from the Earth's surface that would otherwise escape to space, as shown in Figure 1-1. The Intergovernmental Panel on Climate Change (IPCC), state of California AB 32, and California Environmental Quality Act (CEQA) Guidelines define the following six GHGs in order of most abundance: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (NO_2), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor, although the most abundant GHG, is not included in this list because natural concentrations and fluctuations far outweigh anthropogenic influences. The sources and sinks[4] of each of these gases are discussed in detail below. Generally, GHG emissions are quantified in terms of metric tons (MT) of carbon dioxide equivalents (CO_2e) emitted per year.

[4] A sink removes and stores GHGs in another form. For example, vegetation is a sink because it removes atmospheric CO2 during respiration and stores the gas as a chemical compound in its tissues.

Figure 1-1. The Greenhouse Effect



To simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas, CO_2. GHGs are compared in terms of their respective global warming potentials (GWP), relative to that of CO_2 (which has a GWP standardized to 1). The GWP is used to compare GHGs based on their potential to trap heat and remain in the atmosphere, as shown in Table 1-1. Some gases, like methane, can absorb more heat than others, and thus have a greater impact related to greenhouse effects. When developing actions to reduce GHGs, it is therefore important to not only consider the abundance of a gas, but also its GWP (Intergovernmental Panel on Climate Change 2007).

Table 1-1. Lifetimes, Global Warming Potentials, and Abundances of Several Significant Greenhouse Gases

Gas	Global Warming Potential (100 years)	Lifetime (years)	Atmospheric Abundance
CO_2	1	50–200	393 ppm
CH_4	21	9–15	1,758-1,874 ppb
N_2O	310	120	323-324 ppb
HFC-23	11,700	264	18 ppt
HFC-134a	1,300	14.6	35 ppt
HFC-152a	140	1.5	3.9 ppt
CF_4	6,500	50,000	74 ppt[a]
C_2F_6	9,200	10,000	2.9 ppt[a]
SF_6	23,900	3,200	7.1-7.5 ppt

Sources: Intergovernmental Panel on Climate Change 1996, 2007; Carbon Dioxide Information Analysis Center 2013; National Oceanic & Atmospheric Administration 2013.

[a] CF_4 and C_2F_6 are PFCs. The GWP values presented above are based on the IPCC Second Assessment Report (SAR) and United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines (IPCC 1996, UNFCCC 2003). Although the IPCC Fourth Assessment Report (AR4) presents different GWP estimates, the current inventory standard relies on SAR GWPs to comply with reporting standards and consistency with regional and national inventories.

N_2O = nitrous oxide; C_2F_6 = hexafluoroethane; ppm = parts per million; ppb = parts per billion; ppt = parts per thousand.

GHGs are both naturally occurring and anthropogenic (i.e., human-made). Below are descriptions of the greenhouse gases.

CO_2 is the most important anthropogenic GHG and accounts for more than 75% of all GHG emissions caused by humans. Its long atmospheric lifetime ensures that atmospheric concentrations of CO_2 will remain elevated for decades even after mitigation efforts to reduce GHG concentrations are promulgated (Intergovernmental Panel on Climate Change 2007). Primary sources of anthropogenic CO_2 in the atmosphere are the burning of fossil fuels (including motor vehicles), gas flaring, cement production, land use changes, and deforestation.

CH_4, the main component of natural gas, is the second most abundant GHG, and has a GWP of 21 (Intergovernmental Panel on Climate Change 1996). Sources of anthropogenic emissions of CH_4 include agricultural practices, combusting natural gas, and landfill outgassing.

N_2O is a powerful GHG, with a GWP of 310 (Intergovernmental Panel on Climate Change 1996). Anthropogenic sources of N_2O include agricultural processes, nylon production, fuel-fired power

plants, nitric acid production, and vehicle emissions. In the United States more than 70% of N_2O emissions are related to agricultural soil management practices, particularly fertilizer application.

HFCs are anthropogenic chemicals used in commercial, industrial, and consumer products and have high GWPs (U.S. Environmental Protection Agency 2006). HFCs are generally used as substitutes for ozone-depleting substances (ODS) in automobile air conditioners and refrigerants. The most abundant HFCs, in descending order, are HFC-134a, HFC-23, and HFC-152a (Table 1-1).

PFCs are anthropogenic chemicals emitted largely from aluminum production and semiconductor manufacturing processes. PFCs are extremely stable compounds that are destroyed only by very high-energy ultraviolet rays, which results in their very long lifetimes.

SF_6, another anthropogenic chemical, is used as an electrical insulating fluid for power distribution equipment, in the magnesium industry, and in semiconductor manufacturing; and also as a trace chemical for the study of oceanic and atmospheric processes (U.S. Environmental Protection Agency 2006).

1.1.2 Emissions Sources in the United States and California

In the United States, 84% of GHG emissions are in the form of carbon dioxide, 9% are methane, and 5% are nitrous oxide; all are the result of the burning of fossil fuels. The remaining 2% of emissions are fluorinated gases (U.S. Environmental Protection Agency 2013). Fossil fuels are burned to create electricity that powers homes and commercial buildings, to create heat, and to power vehicles. In the United States, vehicle emissions represent approximately 28% of all emissions in 2011 (U.S. Environmental Protection Agency 2013). Vehicle emissions represented approximately 38% of all GHGs emitted by Californians in 2011. Energy used to power buildings is the other primary source of GHGs in the United States and California. Other sources of GHG emissions include agriculture, land clearing, the landfilling of waste, refrigerants, and certain industrial processes.

1.1.3 Impacts of Climate Change on the City of Ontario

Increases in the globally averaged atmospheric concentration of GHGs will cause the lower atmosphere to warm, in turn inducing a myriad of changes to the global climate system. These large-scale changes will have unique and potentially severe impacts in the western United States, California, and the region surrounding the City. Current research efforts coordinated through the California Air Resources Board (ARB), California Energy Commission (CEC), California Environmental Protection Agency (Cal-EPA), University of California (UC) system, and others are examining the specific changes to California's climate that will occur as the Earth's surface warms.

Existing evidence indicates that climate change could affect the natural environment in the City in the following ways, among others. It is important to note that these impacts are predictions based on the best available evidence and are not definitive, as there are uncertainties associated with utilizing research on global and regional climate change to predict local effects.

- Extreme heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent.
- An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality.
- Reduced water supplies for all end uses.

- Potential increase in the severity of winter storms, affecting peak stream flows and flooding.
- Changes in growing season conditions that could affect agriculture, causing variations in crop quality and yield.
- Changes in distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.
- Decreased Sierra Nevada snowpack and altered timing and amount of snowmelt; effects on California water supplies and water management (California Energy Commission 2005).

1.2 Climate Change Regulation

1.2.1 Federal and State Legislation

Although there is currently no federal overarching law or policy related to climate change or the regulation of GHGs, recent activity indicates that the U.S. Environmental Protection Agency (EPA) will take a lead role in regulating certain sources. Foremost among recent developments has been the EPA's progress in developing GHG regulations pursuant to its authority under the Clean Air Act which is further described in Table 1-2. The federal government has already adopted aggressive vehicle mileage standards. Regulation of stationary sources (such as refineries and electricity generation plants) while being pursued by the current administration remains somewhat uncertain, and will likely be subject to legal appeal on its road to implementation.

The State of California has adopted legislation, and regulatory agencies have enacted policies, addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation and policy activity is not directed at citizens or jurisdictions but rather establishes a broad framework for the State's long-term GHG mitigation and climate change adaptation program. The prior and current Governor has also issued several executive orders related to the State's evolving climate change policy. Of particular importance to local governments is the direction in the AB 32 Scoping Plan that recommends local governments reduce their GHG emissions by a level consistent with state goals (i.e., 15% below current levels, since adjusted to between 10 to 11%).

Summaries of key policies, legal cases, regulations and legislation at the federal and state levels that are relevant to the City are provided in Table 1-2. Figure 1-2 displays a timeline of key state and federal regulatory activity.

Table 1-2. Summary of Federal and State Legislation

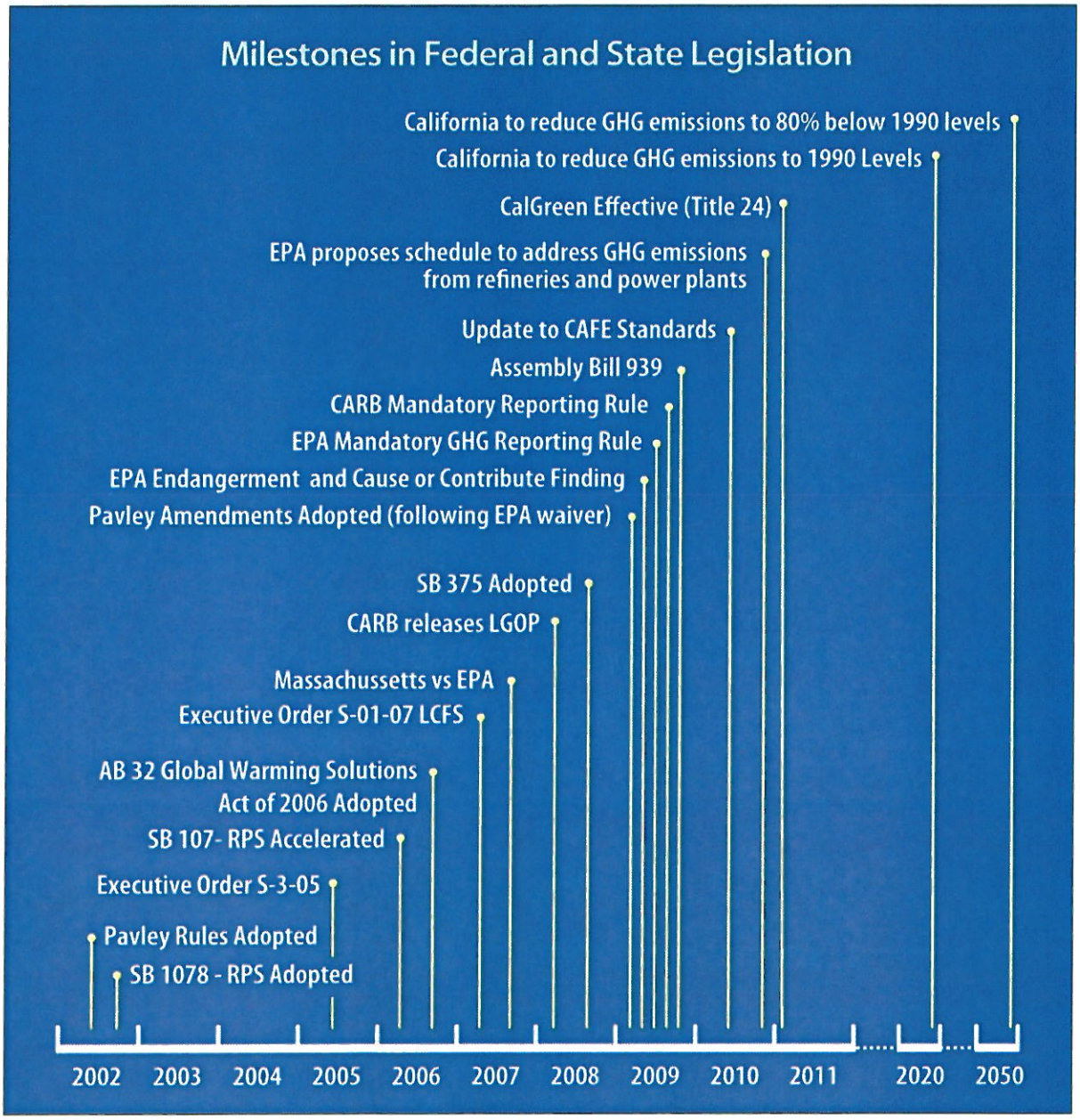
Legislation	Description
Federal	
Massachusetts et al. v. U.S. Environmental Protection Agency (2007)	Twelve U.S. states and cities including California, in conjunction with several environmental organizations, sued to force EPA to regulate GHGs as a pollutant pursuant to the Clean Air Act (CAA) in *Massachusetts et al. v. Environmental Protection Agency* (549 US 497) (2007). The court ruled that the plaintiffs had standing to sue, GHGs fit within the CAA's definition of a pollutant, and the EPA's reasons for not regulating GHGs were insufficiently grounded in the CAA.
U.S. Environmental Protection Agency Endangerment Finding (2009)	In its "Endangerment Finding," the Administrator of the EPA found that GHGs, as described above, threaten the public health and welfare of current and future generations. The Administrator also found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare. Although the Finding of Endangerment does not place requirements on industry, it is an important step in EPA's process to develop regulation. This measure was a prerequisite to finalizing EPA's proposed GHG emission standards for light-duty vehicles (U.S. Environmental Protection Agency 2010).
U.S. Environmental Protection Agency Cause or Contribute Finding (2010)	In its "Cause or Contribute Finding" the EPA Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare (U.S. Environmental Protection Agency 2010).
U.S. Environmental Protection Agency Mandatory Reporting Rule for GHGs (2009)	Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 MT or more per year of GHGs are required to report annual emissions to the EPA. The first annual reports for the largest emitting facilities, covering calendar year 2010, were submitted to the EPA in 2011. The mandatory reporting rule does not limit GHG emissions but establishes a standard framework for emissions reporting and tracking of large emitters (U.S. Environmental Protection Agency 2010).
U.S. Environmental Protection Agency regulation of Stationary Sources under the Clean Air Act	Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to the President's 2013 Climate Action Plan, the EPA has also been directed to also develop regulations for existing stationary sources.

Legislation	Description
Update to Corporate Average Fuel Economy Standards (2009)	The new Corporate Average Fuel Economy (CAFE) standards incorporate stricter fuel economy standards promulgated by the State of California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25% by 2016. EPA, National Highway Traffic Safety Administration (NHTSA), and ARB have established GHG emissions standards for 2017 to 2025 model year passenger vehicles, which require an industry-wide average of 54.5 miles per gallon in 2025 (U.S. Environmental Protection Agency et al. 2011a). The rule was finalized by the NHTSA in 2012 (National Highway Traffic Safety Administration 2012).
State	
Executive Order S-03-05 (2005)	Executive Order (EO) S-03-05 established the following GHG emission reduction targets for California's state agencies. • By 2010, reduce GHG emissions to 2000 levels. • By 2020, reduce GHG emissions to 1990 levels. • By 2050, reduce GHG emissions to 80% below 1990 levels. Executive orders are binding only on state agencies. Accordingly, EO S-03-05 will guide state agencies' efforts to control and regulate GHG emissions but will have no direct binding effect on local efforts. The Secretary of Cal-EPA is required to report to the Governor and state legislature biannually on the impacts of global warming on California, mitigation and adaptation plans, and progress made toward reducing GHG emissions to meet the targets established in this executive order.
Assembly Bill 1493 – Pavley Rules (2002, amendments 2009)	Known as "Pavley I," AB 1493 standards were the nation's first GHG standards for automobiles. AB 1493 requires ARB to adopt vehicle standards that will lower GHG emissions from new light-duty automobiles to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (Pavley II/Advanced Clean Cars) has been proposed for vehicle model years 2017–2025. Together, the two standards are expected to increase average fuel economy to roughly 43 miles per gallon (mpg) by 2020 and reduce GHG emissions from the transportation sector in California by approximately 14%. The new federal CAFE standards, described above, are the analogous national policy. EPA and ARB have adopted a joint rulemaking to establish GHG emissions standards for 2017 to 2025 model-year passenger vehicles. The Interim Joint Technical Assessment Report for the standards evaluated four potential future standards ranging from 47 to 62 miles per gallon in 2025. The standards were approved by ARB and NHTSA in 2012 (California Air Resources Board 2012, National Highway Traffic Safety Administration 2012).

Legislation	Description
Senate Bills 1078 (2002), 107 (2006) and X1-2 (2011) and Executive Order S-21-09 - Renewable Portfolio Standard	Senate Bills (SBs) 1078, 107, California's Renewable Portfolio Standard (RPS), obligates investor-owned utilities (IOUs), energy service providers (ESPs), and Community Choice Aggregations (CCAs) to procure an additional 1% of retail sales per year from eligible renewable sources until 20% is reached, no later than 2010. Senate Bill 2 (2011) set forth a longer range target of procuring 33% of retail sales by 2020. Executive Order S-21-09, signed by California's Governor in September 2009, requires the ARB to adopt a renewable energy program requiring 33% renewable energy by 2020.
Assembly Bill 32 – California Global Warming Solutions Act (2006)	AB 32 codified the State's GHG emissions target by requiring that the state's global warming emissions be reduced to 1990 levels by 2020. Since being adopted, the ARB, CEC, the California Public Utilities Commission (CPUC), and Building Standards Commission have been developing regulations that will help meet the goals of AB 32 and EO S-03-05. The Scoping Plan for AB 32 identifies specific measures to reduce GHG emissions to 1990 levels by 2020, and requires ARB and other state agencies to develop and enforce regulations and other initiatives for reducing GHGs. On February 10, 2014, the ARB released the Draft Proposed First Update to the Scoping Plan. This update builds upon the initial Scoping Plan. It identifies new funding sources, defines ARB's climate change priorities for the next five years, highlights California's progress toward the 2020 goal, and sets the groundwork to reach longer-term goals beyond 2020.
Executive Order S-01-07 – Low Carbon Fuel Standard (2007)	EO S-01-07 mandates: (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020, and (2) that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established in California.
Assembly Bill 939, title 27 (2009) – Landfill Methane Regulation	In 2009 ARB approved regulations for methane emissions from municipal solid waste landfills. This regulation will reduce methane emissions from landfills primarily by requiring owners and operators of certain uncontrolled landfills to install gas collection and control systems, and by requiring existing and newly installed gas collection and control systems to operate optimally.

Legislation	Description
Senate Bill 375 – Sustainable Communities Strategy (2008)	SB 375 provides for a new planning process that coordinates land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans, developed by metropolitan planning organizations (MPOs) to incorporate a "sustainable communities strategy" (SCS) in their Regional Transportation Plans (RTPs). The goal of the SCS is to reduce regional vehicle miles traveled (VMT) through land use planning and consequent transportation patterns. ARB set regional GHG reduction targets that will focus each SCS. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. The SCS for the Southern California region was adopted by the Southern California Associated governments (SCAG) in 2012.
ARB GHG Mandatory Reporting Rule Title 17 – 2009	In December 2007, ARB approved a rule requiring mandatory reporting of GHG emissions from certain sources, pursuant to AB 32. Facilities subject to the mandatory reporting rule must report their emissions from the calendar year 2009 and have those emissions verified by a third party in 2010. In general, the rule applies to facilities emitting more than 25,000 MT CO_2e in any given calendar year or electricity-generating facilities with a nameplate generating capacity greater than 1 megawatt (MW) and/or emitting more than 2,500 MT CO_2e per year. Additional requirements also apply to cement plants and entities that buy and sell electricity in the state.
Senate Bill X7 – The Water Conservation Act of 2009 (2009)	SB X7 was enacted in November 2009 and requires urban water agencies throughout California to increase conservation to achieve a statewide goal of a 20% reduction in urban per capita use (compared to nominal 2005 levels) by December 31, 2020 (referred to as the "20X2020 goal"). Each urban water retailer in the county subject to the law has established a 2020 per-capita urban water use target to meet this goal.

Figure 1-2. Key Milestones in Federal and State Climate Legislation



1.2.2 Local Governments

The AB 32 Scoping Plan lays out California's plan for achieving the GHG reductions required by AB 32. Specifically, the Scoping Plan describes a list of measures that the state will undertake, and the expected GHG reductions associated with these measures that will be realized before 2020. Because the state does not have jurisdictional control over many of the activities that produce GHG emissions in California, the AB 32 Scoping Plan articulates a unique role for local governments in achieving the state's GHG reduction goals. The AB 32 Scoping Plan recommends that local governments reduce

GHG emissions from both their municipal operations and the community at large to a level that is 15% below current levels. The 15% recommendation was based on CARB's estimate of 2005–2008 emissions at the time of the scoping plan because at that time CARB had not yet completed actual inventories for those years. In subsequent years, CARB completed the inventories for the 2005–2011 years. In order to meet the AB 32 target of 1990 levels, the state would have to reduce its emissions by 10 to 11% below 2005–2008 levels. Based on the latest GHG inventories for 2009-2011, the state would have to reduce its emissions by 3 to 5% below 2009–2011 levels. The reason for the decline in the percent reduction in recent years is because statewide emissions dropped significantly in 2009 (largely due to the economic recession). The scoping plan update recommends that local governments should chart a reduction trajectory that is consistent with, or exceeds, the trajectory created by statewide goals.

The AB 32 scoping plan is a roadmap for achieving AB 32 goals. Reducing statewide emissions to 1990 levels by 2020 is equivalent to cutting annual per capita emissions by 4 tons per person. The AB 32 Scoping Plan identifies the following eight key sectors for meeting this challenge.

- **Cap-and-Trade:** Limit GHG emissions from certain sectors.
- **Electricity and Energy:** Improve energy efficiency and use of renewable power.
- **High Global Warming Potential GHGs:** Enhance capture technology and reduce refrigerant use.
- **Agriculture:** Increase equipment efficiency and enhance methane capture at dairies.
- **Transportation:** Improve engine efficiency, reduce carbon content of fuels, and improve the transportation network.
- **Industry:** Target the largest emitters through audits and restrictions.
- **Forestry:** Provide sequestration credits.
- **Waste and Recycling:** Reduce waste and increase recycling.

Together, strategies outlined in the AB 32 Scoping Plan will help transform California's economy into one that is more sustainable and less reliant on fossil fuels (California Air Resources Board 2010c).

In response to the directive of the AB 32 Scoping Plan, many jurisdictions across California have completed a GHG Inventory and Reduction Plan, commonly called a Climate Action Plan (CAP). These plans generally address two types of emissions.

- The community inventory and reduction plan, or Community CAP—emissions that arise from the community at large (residents, businesses, and their associated activities within the jurisdictional boundary).
- The municipal inventory and reduction plan, or Municipal CAP—emissions that arise from the City/City's operations only (City/City buildings, vehicle fleet, activities required to provide services to the jurisdiction).

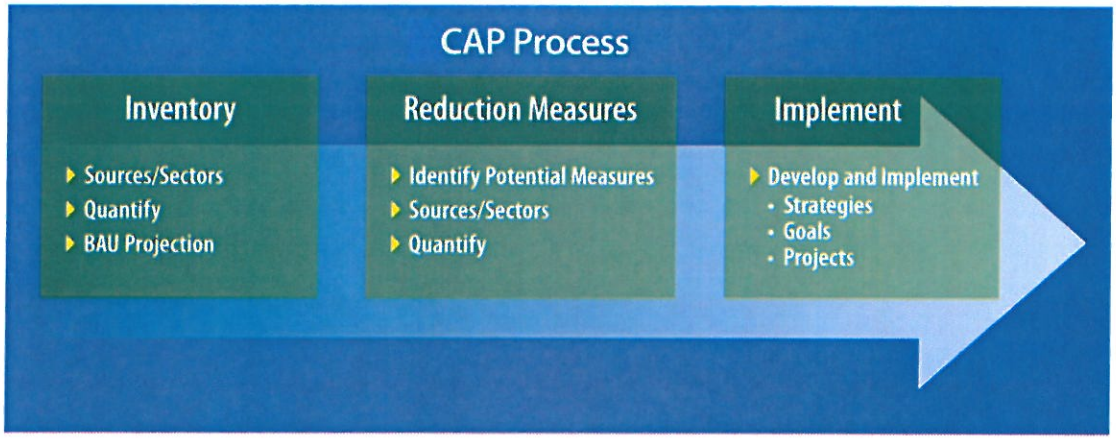
This plan is a Community CAP. It presents an inventory of GHG emissions from the City's community at large and details a strategy to reduce those emissions before 2020. More than 50 jurisdictions in Southern California have completed a CAP, a Community CAP, or both, including the City and County of San Bernardino and the cities of Los Angeles, Anaheim, Beverly Hills, Pasadena and many others.

1.3 Community Climate Action Planning Overview

The Community CAP planning process includes the following three main steps (Figure 1-3).

1. **Inventory Current and Project Future GHG Emissions.** The first step in developing a GHG reduction plan is to establish the amount of GHGs currently being emitted on a yearly basis within the boundary of interest (i.e., by all community activities within the City limits). Because GHG planning in California is driven by the state's 2020 goal, GHG inventories include not only an inventory of all GHG emissions in the baseline (current) year, but also a projection of what GHG emissions will likely be in 2020 when accounting for growth (i.e., the increased level of service and number of employees).
2. **Select and Quantify GHG Reduction Measures.** The second step is to identify measures that can be taken to reduce GHG emissions. Once selected, the amount of GHG emissions that will be avoided in 2020 (if the measures are implemented) are calculated. The final list of GHG reduction measures, when fully implemented, would result in a reduction of GHG emissions that meet AB 32 requirements.
3. **Implement GHG Reduction Measures.** The final step is to implement GHG reduction measures identified in Step 2 above. Reduction measures usually take the form of policies or programs that the City can implement and are usually tailored to complement existing programs. Implementation includes identification of responsible parties for each measure, identification of funding sources, scheduling and ongoing monitoring, and progress reporting.

Figure 1-3. The CAP Planning Process



CITY OF ONTARIO

Community Climate Action Plan

Chapter 2: Greenhouse Gas Emissions Inventory and Reduction Plan

Chapter 2
Greenhouse Gas Emissions Inventory and Reduction Plan

2.1 Emissions Inventory and Forecast

Beginning in 2011, the City conducted a detailed inventory of all GHG emissions for calendar year 2008, associated with community activities. The inventory was organized by these sectors.

- Building Energy (residential and commercial electricity and natural gas)
- On-Road Transportation (light-medium duty and heavy-duty vehicles)
- Off-Road Equipment
- Agriculture
- Solid Waste Management
- Wastewater Treatment
- Water Transport, Distribution, and Treatment
- SF_6 from Electricity Consumption

The following sectors were quantified and listed for informational purposes, but were excluded from the CAP inventory.

- Stationary Sources
- Airport-related traffic

Stationary sources were excluded to avoid duplication of state and federal regulatory efforts, such as the California Cap and Trade system, which will particularly affect large stationary sources. The stationary sources excluded from the inventory include fuel combustion other than natural gas for sources such as oil and gas production, manufacturing and industry, and food and agricultural processing. The vast majority of stationary source emissions in Ontario are from large industrial, commercial, and agricultural fuel combustion (please refer to Appendix A for a complete description of stationary sources including emissions broken down by major source category). These sources are generally subject to the California Cap and Trade regulations, and were therefore excluded from the CAP inventory to avoid duplication of state efforts to reduce these emissions. Airport-related traffic was excluded because the City has little or no influence over airport operations and passenger traffic patterns. Direct emissions associated with natural gas and indirect emissions related to electricity generation are included in the City inventory under the building energy sector.

The City also completed a projection of expected GHG emissions in 2020 accounting for a growing city population. The City is anticipated to grow from 2008 to 2020, increasing housing by 37% and total jobs by 32% (Minjares pers. comm.). Community activities will increase as the population in the City grows. GHG emissions from vehicle use, building energy use, and wastewater treatment will

therefore increase by 2020 as the City's population grows. For a detailed description of the city's 2008 GHG inventory and 2020 forecast, see Appendix A[5].

2.1.1 City of Ontario GHG Emissions in 2008

In 2008, community activities in the City resulted in the release of approximately 2.5 million MT CO_2e—roughly equivalent to the amount of GHGs released by the consumption of more than 280 million gallons of gasoline. GHG emissions in 2008 and projected emissions in 2020 are shown in Table 2-1 and Figure 2-1. As indicated, the largest source of community emissions for the City was on-road transportation, which represented 38% of total community emissions for 2008. Transportation emissions are often one of the largest sources of emissions in community inventories, and Ontario is no exception. The second largest source of emissions was from building energy use, which accounted for 37% of total community emissions for 2008. This sector includes emissions associated with natural gas combustion and electricity consumption in residential, commercial, and industrial buildings in Ontario. The third largest source was agriculture, with a contribution of 14% of the total 2008 emissions. The remaining sources in order of greatest contributions were off-road equipment (7%), solid waste management (2%), water transport, distribution, and treatment (1%), wastewater treatment (0.3%), and SF_6 from electricity consumption (0.2%). Table 2-1 and Figure 2-1 present all GHG emissions for the City for 2008.

2.1.2 City of Ontario Projected GHG Emissions in 2020

In 2020, community activities are projected to result in the release of 3.1 million MT CO_2e—an increase of approximately 25% over 2008 levels. The increase from 2008 to 2020 will occur primarily because of an increase in VMT and building energy use. As the population and employment in Ontario grow, transportation activity and energy consumption will increase. Emissions from all other sectors will increase under the BAU scenario by 2020 because of growth in the City across all economic sectors. The 2020 GHG emissions projection represents the BAU scenario, which assumes that the City and its residents and businesses will continue to utilize the same types of energy at the same rate as they do now. The BAU forecast also assumes that the United States, the state, or the City will take no action to curb emissions.

Building energy use (40%), on-road transportation (39%), and agriculture (10%) are still expected to be the largest sources of emissions in 2020. The only sector of the inventory for which emissions will not increase from 2008 to 2020 is agriculture (which will decrease by 9% due to decreased availability of agricultural land). GHG emissions from individual sectors are discussed in more detail, together with the measures that the City will take to curb them in Chapter 3, *Individual Sector Summaries.*

[5] The percentages in Appendix A do not match precisely the percentages listed in Table 2-1 because stationary sources and airport emissions are not included in Table 2-1 but are included in Appendix A.

Table 2-1. City of Ontario Community GHG Inventories: 2008 Baseline and 2020 BAU Forecast (MT CO_2e)[a]

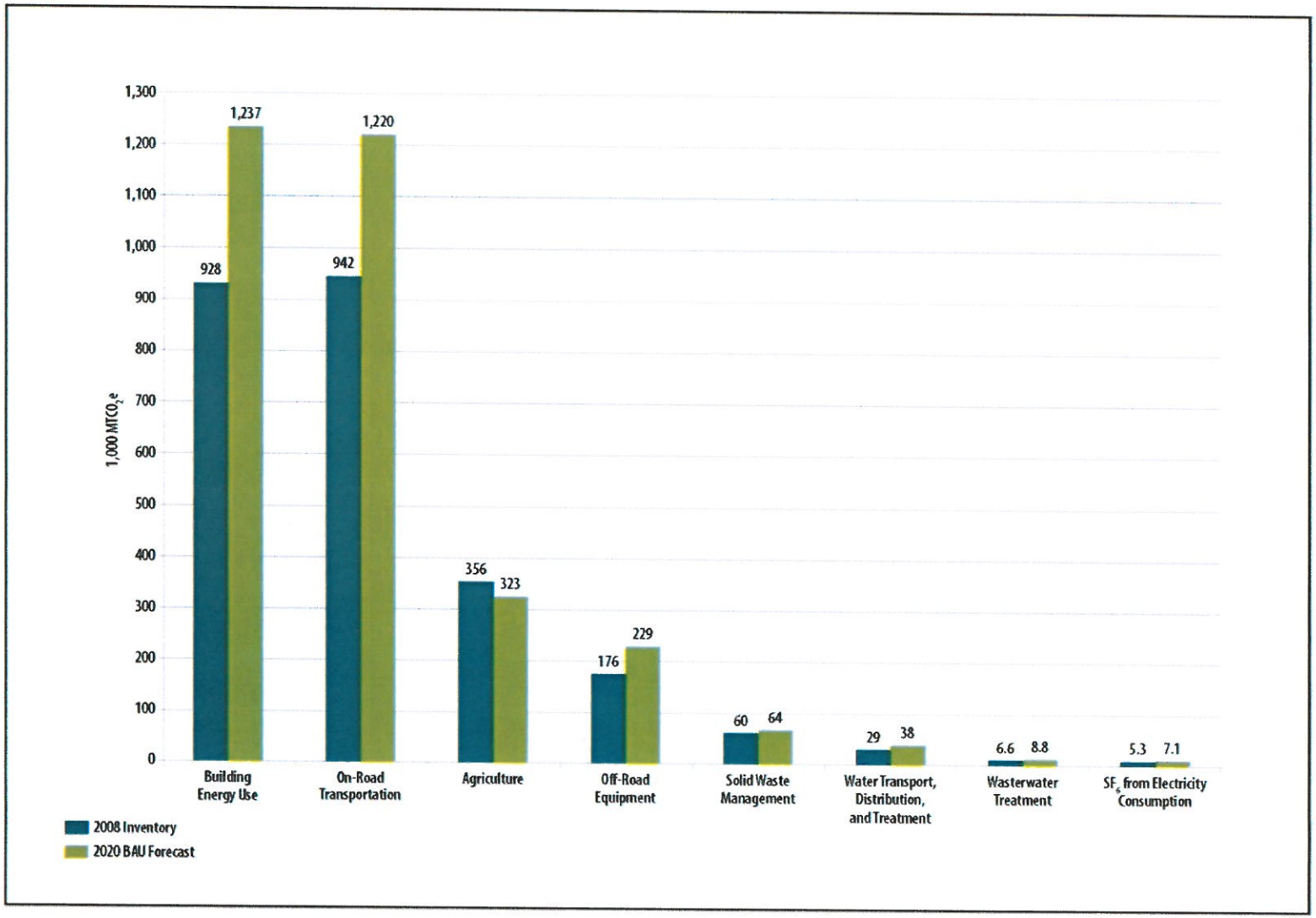
	2008		2020	
Emissions Sector	**MT CO_2**	**% of Total**	**MT CO_2**	**% of Total**
Building Energy Use	928,409	37%	1,237,006	40%
On-Road Transportation	942,020	38%	1,219,767	39%
Off-Road Equipment	176,314	7%	229,069	7%
Agriculture	356,131	14%	323,390	10%
Solid Waste Management	60,000	2%	64,326	2%
Wastewater Treatment	6,587	0.3%	8,781	0.3%
Water Transport, Distribution, and Treatment	29,044	1%	38,575	1%
SF_6 from Electricity Consumption	5,310	0.2%	7,072	0.2%
Total Emissions	**2,503,816**	**100%**	**3,127,987**	**100%**
Excluded Emissions[b]				
Stationary Sources	405,195	N/A	511,548	N/A
Airport-Related Traffic	28,736	N/A	75,976	N/A
Subtotal Excluded Emissions	**433,932**	**N/A**	**587,525**	**N/A**

Values may not sum due to rounding. For a detailed description of the city's 2008 GHG inventory and 2020 forecast, see Appendix A

[a] The calculations presented above contain a certain amount of uncertainty. Quantitative error analyses are complicated, require detailed statistical equations, and are outside the scope of the consultant's work. The EPA estimates an error range of -1 to 6% for the 2009 national inventory. Given that the City's 2008 inventory employed similar methods and analysis factors, a similar level of error can be expected, yielding an emissions range of 2,507,227 MT CO_2e to 2,380,599 MT CO_2e. The uncertainty associated with the 2020 forecast is likely higher due to the assumptions associated with future socioeconomic data.

[b] As stated above, the City elected not to include these emissions in its CAP inventory. Amounts are provided for informational purposes only, and were not used to develop the CAP reduction goal.

Figure 2-1. 2008 GHG Emissions and Projected Emissions in 2020 by Sector



2.2 City of Ontario's Emissions Reduction Target

The City's GHG emissions in 2008 were approximately 2.5 million MT CO_2e. Reducing emissions to 30% below 2020 levels would result in emissions of approximately 2.2 million MT CO_2e in 2020. In 2020, the City's GHG emissions are projected to be approximately 3.1 million MT CO_2e in the absence of any measures by either the State of California or the City. The reductions needed to reach the target are approximately 940,000 MT CO_2e (Table 2-2).

Table 2-2. How is the City of Ontario's GHG Reduction Target Calculated?

GHG Emissions		MT CO_2e
A	Projected in 2020 (based on projected growth from 2008 baseline)	3,127,987
B	Target for 2020—30% below 2020 levels	2,189,591
	Total Reductions Needed to Reach Target (A minus B)	**938,369**

To achieve the desired emissions reduction target, the City has selected 44 local mitigation measures in addition to those that will be implemented at the state level. Of the 44 measures, 21 have been quantified for GHG reductions. The remaining measures were not quantified due to insufficient data needed to quantify reductions. These measures were chosen based on the pattern of existing and future emissions sources, the suite of ongoing City efficiency and environmental programs, and areas where opportunities for significant GHG reductions overlapped favorably with the City jurisdictional control and financial concerns. Chapter 3, *Individual Sector Summaries*, discusses the individual measures by sector.

2.3 Reduction Measure Selection Process

The City reviewed a comprehensive list of potential measures, or candidate measures that could be taken to reduce GHG emissions from the City's community activities. This initial list drew from federal and state resources, recommendations from the attorney general, CAPs throughout California, and the City's current and proposed efficiency and environmental programs. From this initial list, the City identified measures or groups of measures as being feasible to pursue in order to reduce GHG emissions by 2020. These measures were then compared and tailored to be consistent with existing and planned City departmental programs. The City already had in place or was planning to initiate many programs that, although designed for a different purpose, would result in significant energy and GHG savings for the City in 2020. Examples of these programs include workforce development, water supply and demand management, and grants for waste reduction. Existing programs that already influenced activity and emissions in the community in 2008 were not counted toward the CAP reductions. Because these programs already influenced activity in 2008, such as by reducing energy use, water use, and waste generation, the 2008 activity data used to prepare the GHG inventory already accounted for any reductions achieved by 2008. Also, because the forecast uses the same carbon intensity values as the 2008 inventory without the influence of any additional state or local measures past 2008, the impact of existing local measures past 2008 were not counted in the BAU forecast. Reductions in the CAP for existing programs are only

associated with actions occurring from 2008 to2020, and these actions are not already counted in the BAU forecast as discussed above.

Finally, the GHG reductions associated with all of the selected measures were quantified in addition to GHG reductions expected from state-level programs whose actions will be implemented regardless of local action taken by the City. For a detailed description of the City's GHG reduction measures, including quantification methods, sources and assumptions, see Appendix C.

2.4 City of Ontario's Reduction Plan

The measures described in this Community CAP would, if fully implemented, result in 2020 emissions approximately 30.1% below 2020 levels, or approximately 2.2 million MT CO_2e, as shown in Table 2-3.

Table 2-3. Reaching the Target—Sector View

GHG Emissions		**(MT CO_2e)**
A	Projected in 2020 (BAU)	3,127,987
B	Target for 2020—30% below 2020 levels	2,189,591
	Reductions Needed to Reach Target (A minus B)	**938,369**
City Emissions Reductions By Sector		
	Building and Renewable Energy[a]	393,300
	On-Road Transportation[b]	365,212
	Off-Road Equipment[b]	28,166
	Solid Waste Management[c]	26,265
	Wastewater Treatment[d]	649
	Water Transport, Distribution, and Treatment[e]	6,511
	Agriculture	80,352
	SF_6 from Electricity Consumption[f]	1,678
	Performance Standard for New Development[g]	39,769
Total Reductions		**941,902**
	Exceeds Reduction Target by	**3,506**
	GHG Emissions in 2020 with Community CAP (all measures)	**2,186,084**
	% Below Projected Levels	**30.1%**

For a detailed description of the City's GHG reduction measures, including quantification methods, sources and assumptions, see Appendix C.

[a] Includes GHG benefits from the Renewables Portfolio Standard (state), energy conservation measures, increased use of renewable power sources, shade tree planting, and reductions in building energy use related to wastewater treatment measures (increased wastewater treatment operational efficiency) and water conservation measures. When water consumption in buildings is reduced, and much of that water would have been heated (dishwashing, clothes washing, sinks, showers, etc.) using natural gas or electric heaters, building energy use is reduced at the same time.

[b] Includes GHG benefits from the Low Carbon Fuel Standard.

[c] Includes GHG benefits from San Bernardino County Landfill Methane Capture Systems (County-1).

[d] Includes reductions in wastewater treatment fugitive emissions only.

[e] Includes GHG benefits from embedded energy savings from water transport, distribution, and treatment.

[f] Includes reductions in SF_6 due to any measure which reduces grid electricity.

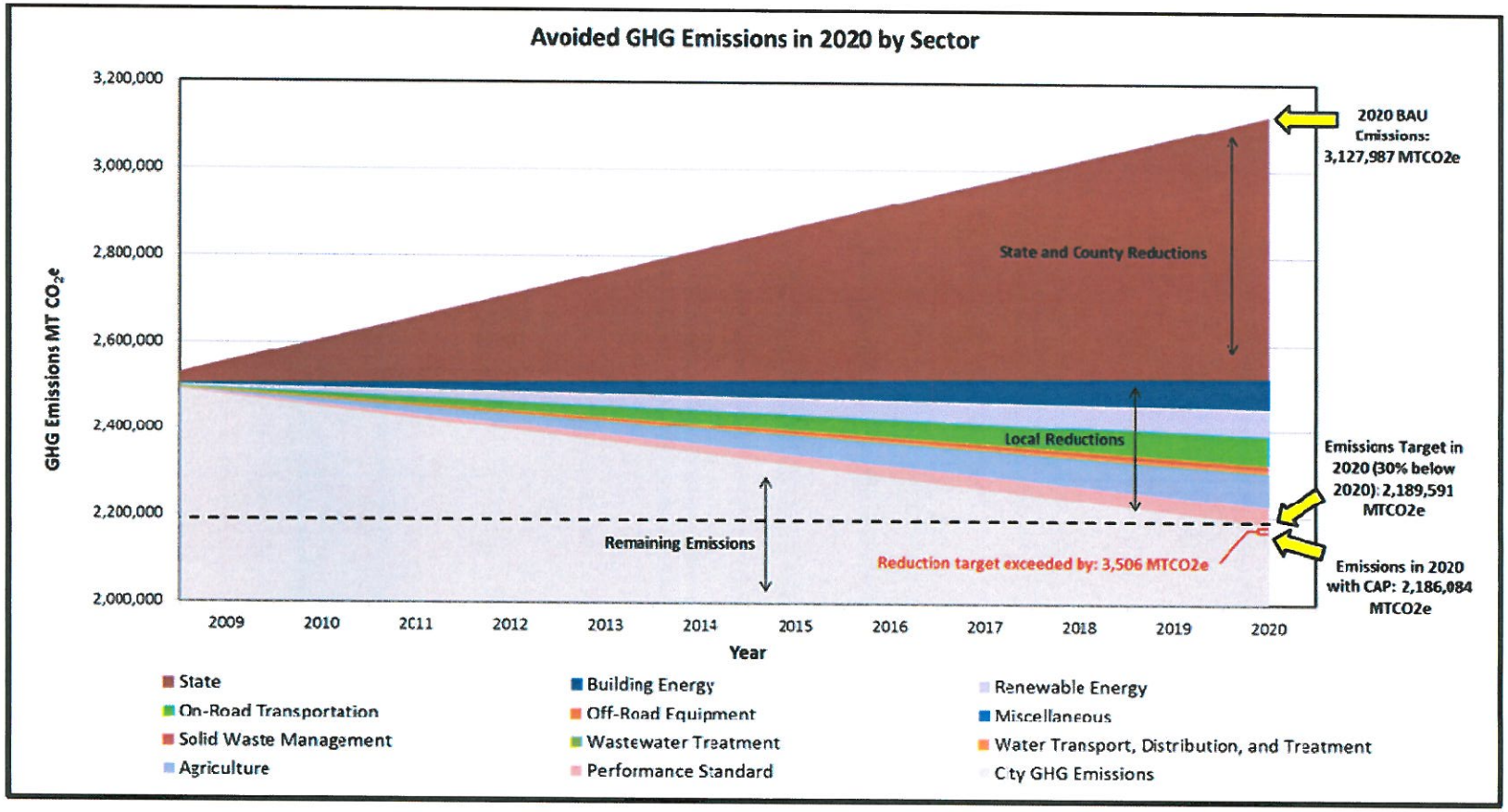
[g] Not a sector of the inventory.

Table 2-3 and Figure 2-2 show that the largest percentage of GHG reductions in the City's plan comes from reductions in building energy use and increased use of renewable energy (42% or approximately 393,000 MT CO_2e), reductions in emissions associated with transportation (39% or 365,000 MT CO_2e), and reductions in emissions associated with agriculture (9% or 80,000 MT CO_2e). Off-road equipment, solid waste management, wastewater treatment, water, and performance standard measures also contribute to overall GHG reductions achieved through City measures. Chapter 3, *Individual Sector Summaries*, provides a detailed description of avoided GHG emissions in each sector.

2.5 Other Measures to Reduce GHGs

The City's Community CAP includes many measures that do not have an associated absolute number of MT CO_2e; therefore, MT CO_2e could not be quantified and counted toward the reduction goal. However, these measures likely result in GHG savings and are listed as Non-Quantifiable (NQ) in the sector summaries in Chapter 3. Many of these measures have already been implemented or are currently planned to be implemented, and are considered best management practices (BMPs) for a particular sector. Data necessary to estimate the GHG emissions avoided by these practices or analytical methods to estimate the avoided GHG emissions are currently unknown.

Figure 2-2. Reaching the Target: Sector View



CITY OF ONTARIO

Community Climate Action Plan

Chapter 3: Individual Sector Summaries

Chapter 3
Individual Sector Summaries

The City's Community CAP sets forth a framework for reducing 2020 community emissions that is consistent with AB 32. Successful implementation of the Community CAP would require commitment and action throughout the City's buildings and operations. Based on the City's GHG emissions inventory, the CAP targets the following eleven sectors.


Performance Standard for New Development


Building Energy


Renewable Energy


Wastewater Treatment


Solid Waste Management


On-Road Transportation


Off-Road Equipment


Agriculture


Water Transport, Distribution, and Treatment


SF_6 from Electricity Consumption


Miscellaneous

Not all of these are specific sectors of the inventory, but are rather refined CAP measures organized to more logically categorize the measures. For example, renewable energy is not a sector of the inventory; renewable energy measures were separated from building energy measures to show a distinction between these two types of measures. Both building energy measures and renewable energy measures reduce emissions in the building energy sector.

The following sector discussions describe how implementation of the Community CAP results in avoided GHG emissions. A detailed table provides a listing of sector measures and categorizes them as state measures (e.g. State-1), municipal measures (e.g. Muni-1)[6], and local sector-specific measures (e.g. Energy-1). Each table also includes brief measure descriptions and associated emissions reductions that will be achieved by 2020. Those measures that could not be quantified due to unavailable data, overlap with other measures, or have already been implemented are identified as non-quantifiable (NQ); however, they are supportive measures.

[6] Municipal measures were developed in the City of Ontario Municipal Climate Action Plan. Some of these measures will not overlap with community measures, and were included in the CCAP because they contribute additional GHG reductions beyond community measures.

3.1 Performance Standard for New Development

New development in the City has the potential to be an important contributor to the City's GHG emissions reductions efforts. Through ensuring quantification of GHG emissions associated with new projects and the development of reduction measures to reduce these emissions, the Performance Standard for New Development would result in reductions in GHG emissions in 2020 of approximately 40,000 MT CO_2e (Table 3-1).

Table 3-1. GHG Reduction Measures from the Performance Standard for New Development

GHG Reduction Measures		Simple Definition	GHG Reductions Achieved by 2020 (MT CO_2e)
PS-1	**Performance Standard for New Development**: The City's Performance Standard for New Development (PS) would provide a streamlined and flexible program for new residential and nonresidential projects to reduce their emissions. The PS would include performance standards for new private developments as part of the discretionary approval process under CEQA. Under the PS new projects would be required to quantify project-generated GHG emissions and adopt feasible reduction measures to reduce project emissions to 25% below 2020 BAU project emissions. The PS does not require that project applicants implement a predetermined set of measures. Rather, project applicants are encouraged to choose the most appropriate measures for achieving the percent reduction goal, while taking into consideration cost, environmental or economic benefits, schedule, and other project requirements. The PS applies to all projects emitting more than 3,000 MT CO_2e per year, which is roughly equivalent to 90% of projects. Projects emitting less than this amount must implement a suite of BMPs. Refer to Appendix C for more information.	New projects emitting more than 3,000 MT CO_2e per year need to reduce emissions by 25%.	**39,295**
BMP-1	**Performance Standard for Smaller New Development Projects: Best Management Practices. Exceed Title 24 Energy-Efficiency Standards for New Buildings by 5% by 2020**: All new residential and nonresidential buildings emitting less than 3,000 MT CO_2e per year, which is roughly equivalent to 10% of projects, must exceed the Energy Efficiency Standards under Title 24 by at least 5%, or equivalent level of GHG emission reduction	New projects emitting less than 3,000 MT CO_2e per year to exceed Title 24 Energy Efficiency Standards by 5%, or equivalent level of GHG emission reduction	**474**
Total GHG Reductions for the Performance Standard in 2020			**39,769**

3.2 Building Energy

The City is committed to reducing the GHG emissions associated with residential and nonresidential buildings through retrofits, planting shade trees to reduce building electricity use, and implementing water conservation measures to reduce the need for energy to heat water inside homes and businesses. Table 3-2 lists all building energy measures and identifies them as state measures, municipal measures, or local community measures. Because the Building Energy (BE) sector represented a significant percentage (37%) of total emissions in 2008 and projected emissions for 2020, the potential for GHG benefits in this sector is large. The GHG savings in the building energy sector is approximately 191,000 MT CO_2e.

Table 3-2. GHG Reduction Measures in the Building Energy Sector

	GHG Reduction Measures	Simple Definition	GHG Reductions Achieved by 2020 (MT CO_2e)
State-1	**Title 24 Standards for Residential and Non-Residential Buildings (CALGreen):** Requires that building shells and building components be designed to conserve energy and water. Mandatory and voluntary measures became effective on January 1, 2011, and the guidelines will be periodically updated.	N/A	**80,199**
State-2	**AB 1109 (Huffman) Lighting Efficiency and Toxics Reduction Act:** Structured to reduce statewide electricity consumption in the following ways: (1) at least 50% reduction from 2007 levels for indoor residential lighting, and (2) at least 25% reduction from 2007 levels for indoor commercial and outdoor lighting, by 2018.	N/A	**31,942**
State-3	**AB 1470 (Huffman):** This measure would reduce natural gas use for residential and non-residential water heating by installing 200,000 solar water heaters by 2020 (measure was quantified for residential only).	N/A	**506**
State-4	**Industrial Boiler Efficiency:** This measure, evaluated by ARB, would require one or more of the following: annual tuning of all boilers, the installation of an oxygen trim system, and/or a non-condensing economizer to maximize boiler efficiency. A source could also replace an existing boiler with a new one that is equipped with these systems. This measure, although not part of the recommendation in the AB 32 GHG emissions reduction program, was used as a surrogate for the cap-and-trade program in the economic modeling.	N/A	**10,806**
Muni-1	**Municipal Energy Measures**: Implement measures that contribute toward community	N/A	**1,861**

GHG Reduction Measures		Simple Definition	GHG Reductions Achieved by 2020 (MT CO_2e)
	reductions and do not overlap with other community measures. The MCAP measures include *PM Energy-1* through *PM Energy-11*, *PM ST-1*, and *Water and Sewage-1*.[a]		
Energy-1	**CAP Consistency**: Ensure that the City's local Climate Action, Land Use, Housing, and Transportation Plans are aligned with, support, and enhance any regional plans that have been developed consistent with state guidance to achieve reductions in GHG emissions.	N/A	**NQ**
Energy-2	**Regional Cooperation**: Coordinate with special districts, nonprofits, and other public organizations to share resources, achieve economies of scale, and develop green building policies and programs that are optimized on a regional scale.	N/A	**NQ**
Energy-3	**Energy Efficiency Funding for Existing Low-Income Residents**: Partner with community services agencies to fund energy efficiency projects, including heating, ventilation, air conditioning, lighting, water heating equipment, insulation, and weatherization, for low income residents. Provide permitting-related and other incentives for energy efficient building project.	Retrofit 4,903 existing single-family and multi-family low income homes to save 2,632,164 kilowatt hours (kWh) and 23,216 therms (537 kWh and 5 therms per home). This represents a 27% penetration rate for low income homes.[b]	**711**
Energy-4	**Energy Efficiency Incentives and Programs to Promote Retrofits for Existing Residential Buildings:** Incentivize, or otherwise support, voluntary energy efficiency retrofits of existing residential buildings to achieve reductions in natural gas and electricity usage. Adopt standards and/or promote voluntary programs that retrofit indoor lights, electric clothes dryers, energy-star thermostats, window seals, duct sealing, air sealing, and attic insulation.	Retrofit 7,684 single-family homes and 5,322 multi-family homes: [b] 1) all homes replace incandescent lights with Compact Fluorescent Light bulbs (CFLs) and seal air leaks; 2) 2,305 single-family homes and 1,597 multi-family homes also install programmable thermostats and double-paned windows; 3) 1,537 single-family homes and 1,064 multi-family homes also insulate their attics, install natural gas clothes dryers, and install ENERGY STAR furnaces.	**14,408**
Energy-5	**Energy Efficiency Incentives and Programs to Promote Retrofits for Existing Non-Residential Buildings:** Voluntary programs for existing non-residential facilities improve building-wide energy efficiency by 20% by 2020.	Retrofit 27% of existing non-residential buildings. These buildings to reduce energy use by 20% per building to save 52.7 million kWh and 3.3 million therms.	**29,576**
Energy-6	**Streetlights**: Adopt outdoor lighting	Reduce streetlight and traffic	**3,199**

GHG Reduction Measures		Simple Definition	GHG Reductions Achieved by 2020 (MT CO_2e)
	standards to reduce electricity consumption. Require 40% reduction in energy use from traffic signals and streetlights by 2020.	signal electricity use by 40% to save 14.3 million kWh.	
Misc-3 (BE)	**Shade Tree Planting**: Promote the planting of shade trees and establish shade tree guidelines and specifications.	Plant 1,000 trees per year from 2012–2020 for a total of 9,000 trees by 2020.	**57**
Water-1 (BE)	**Water Conservation for Existing Buildings**: Implement a program to renovate existing buildings to require a higher level of water efficiency. Require 25% of existing buildings within the community to achieve a 25% reduction in water use. This measure will reduce both indoor and outdoor water use.	15,282 existing residential units to reduce total water use (indoor + outdoor) by 25% for a total savings of 459 MG (30,000 gallons/home). 25% of existing non-residential units to reduce total water use (indoor + outdoor) by 25% for a total savings of 698 MG.	**8,823**
Water-4 (BE)	**SB X7**: SB X7was enacted in November 2009 and requires urban water agencies throughout California to increase water conservation to achieve a statewide goal of a 20% reduction in urban per capita use by December 31, 2020.	Reduce City-wide water use by 936 MG under the direction of the City of Ontario 2010 Urban Water Management Plan.	**6,011**
Wastewater-2 (BE)	**Wastewater System Efficiency**: Encourage IEUA to upgrade and replace wastewater treatment and pumping equipment with more energy efficient equipment at the IEUA Regional Water Recycling Plant No. 1 (RP-1) wastewater treatment plant by 2020. Recommend that all pumping and treatment equipment be 25% more energy efficient. Utilize BMPs for the treatment of waste.	N/A	**2,832**
Total GHG Reductions in Building Energy in 2020			**190,931**

Note: Measures in italics result in GHG reductions in multiple sectors. For example, Water-1 reduces the amount of water consumed in the city, which reduces emissions for conveying that water (water transport, distribution, and treatment sector), the energy needed to heat that water (building energy sector), and the energy required to treat the associated wastewater (wastewater treatment sector). The abbreviations are: (BE) = Building Energy; (WT) = Wastewater Treatment; (WC)= Water Conveyance

[a] For a complete description of the MCAP measures, please see the City of Ontario Municipal Climate Action Plan.

[b] There are a number of existing energy retrofit programs which are available in the City of Ontario, including SCE programs, CPUC programs, the Home Energy Renovation Opportunity (HERO) program, and Southern California Gas Company (SCG) programs. Since October 2013, the HERO program has approved 4,693 projects and funded 3,070 projects in the San Bernardino Associated Governments (SANBAG) region, saving 23 GWh of electricity annually. CPUC programs have saved 502 GWh of electricity and 4.3 million therms of natural gas in San Bernardino County in 2010. In 2012, total electricity savings in the SCE service area for all energy efficiency programs were 1,744 GWh, 593 GWh in the residential sector alone (California Public Utilities Commission 2014). This is nearly 2% of total residential electricity consumption in the state (California Energy Commission 2014). In 2013, total energy savings in the SCE service area were 1,145 GWh of electricity, 335 GWh in the residential sector.

3.3 Renewable Energy

The City is committed to increasing use of renewable energy through solar panel installation. The increased use of renewable energy in the City is expected to reduce emissions by approximately 202,000 MT CO_2e of GHG emissions in 2020.

Table 3-3 lists all renewable energy measures and also includes brief measure descriptions and associated emissions reductions.

Table 3-3. GHG Reduction Measures in the Renewable Energy Sector

GHG Reduction Measures		Simple Definition	GHG Reductions Achieved by 2020 (MT CO_2e)
State-5	**Statewide Renewable Portfolio Standard (RPS):** Obligates IOUs, ESPs, and CCAs to procure 20% of retail sales from eligible renewable sources by 2013, and 25% by 2016. EO S-14-08 also sets forth a longer range target of procuring 33% of retail sales by 2020 (see http://www.energy.ca.gov/portfolio/).	N/A	**138,133**
Muni-2	**Municipal Renewable Energy Measures:** Implement measures that contribute toward community reductions and do not overlap with other community measures. These MCAP measures include *PM Renewable Energy-1* through *PM Renewable Energy-3.*[a]	N/A	**406**
Renewable Energy-1	**Solar Installation for Existing Non-Residential for Major Rehabilitations or Expansions:** Install solar photovoltaic panels on nonresidential buildings greater or equal to 25,000 square feet in size requiring discretionary permits for major rehabilitations or expansions (additions of 25,000 square feet of office retail/commercial or 100,000 square feet of industrial/warehouse floor area).	Install solar panels on the roofs of 4.1 million square feet of existing commercial buildings and 1.5 million square feet of existing industrial/warehouse buildings undertaking major rehabilitations or expansions (additions of 25,000 square feet of office retail/commercial or 100,000 square feet of industrial/warehouse floor area). 24 megawatts (MW) solar total.	**7,844**
Renewable Energy-2	**Solar Installation in Existing Single Family Housing:** Install solar panels on 22% of existing single-family homes by 2020.	Install solar panels on 6,261 existing single-family residences, for a total of 32 MW of solar.	**10,736**
Renewable Energy-3	**Solar Installation in Existing Nonresidential Buildings:** Install solar panels on 32% of existing nonresidential buildings by 2020.	Install solar panels on the roofs of 12.8 million square feet of existing commercial and 8.6 million square feet of existing industrial/warehouse buildings, for a total of 137 MW of solar.	**45,251**
Total GHG Reductions in Building Energy in 2020			**202,370**

[a] For a complete description of the MCAP measures, please see the City of Ontario Municipal Climate Action Plan.

3.4 Wastewater Treatment

Energy use associated with the treatment of wastewater (WT) is a significant contributor of GHG emissions. Implementation of water conservation and wastewater recycling measures will result in a reduction of approximately 650 MT CO_2e in 2020 (Table 3-4).

Table 3-4. GHG Reduction Measures in the Wastewater Treatment Sector

GHG Reduction Measures		GHG Reductions Achieved by 2020 (MT CO_2e)
Wastewater-1	**Recycled Water:** Require 50% of all water used for non-potable sources to be recycled water by 2020. Require all new parks and schools to use 100% recycled water for non-potable outdoor uses, as feasible. Develop public educational materials that support and encourage the use of recycled water. Adopt a City Municipal facility goal of 50% use of recycled water for non-potable sources.	**NQ**
Wastewater-2	**Waste-to-energy/Methane Recovery**: Encourage IEUA to implement waste-to-energy projects at the IEUA RP-1 wastewater treatment plant by 2020 and to utilize collected gas to fuel onsite stationary sources.	**NQ**
Water-1 (WT)	**Water Conservation for Existing Buildings:** Implement a program to renovate existing buildings to require a higher level of water efficiency. Require 25% of existing buildings within the community to achieve a 25% reduction in water use. This measure will reduce both indoor and outdoor water use.	**494**
Water-4 (WT)	**SB X7:** SB X7was enacted in November 2009 and requires urban water agencies throughout California to increase water conservation to achieve a statewide goal of a 20% reduction in urban per capita use by December 31, 2020.	**155**
Total GHG Reductions in Wastewater Treatment in 2020		**649**

Note: Measures in italics result in GHG reductions in multiple sectors. For example, Water-1 reduces the amount of water consumed in the city, which reduces emissions for conveying that water (water transport, distribution, and treatment sector), the energy needed to heat that water (building energy sector), and the energy required to treat the associated wastewater (wastewater treatment sector). The abbreviations are: (BE)= Building Energy; (WT) = Wastewater Treatment; (WC)= Water Conveyance

3.5 Solid Waste Management

The City generates waste through daily activities and building operations. Some portion of this waste ultimately is placed in a landfill where it decays and releases methane. In 2008, GHG emissions related to waste generation were estimated at approximately 60,000 MT CO_2e. The potential to reduce GHG emissions in this sector is high, and will in large part be achieved through a methane capture system at nearby landfills. This commitment, along with several other measures, will result in a reduction of approximately 26,000 MT CO_2e in 2020 (Table 3-5).

Table 3-5. GHG Reduction Measures in the Solid Waste Management Sector

GHG Reduction Measures		GHG Reductions Achieved by 2020 (MT CO_2e)
County-1	**San Bernardino County Landfill Methane Capture Systems:** The County of San Bernardino GHG Emissions Reduction Plan[7] specifies the following landfill methane controls at County Owned and Operated landfills that accept waste from the City: 95% capture at Mid-Valley landfill, 85% capture at Milliken and Colton landfills, and 75% capture at Barstow and Landers landfills.	**24,170**
Waste-1	**Waste Diversion:** Exceed the waste diversion goals recommended by AB 939 and CALGreen by adopting a waste diversion goal of at least 75% of waste.	**2,095**
Waste-2	**Construction and Demolition Waste Recovery Ordinance:** Implement an ordinance requiring building projects to recycle or reuse at least 50% of unused or leftover building materials.	**NQ**
Total GHG Reductions in Solid Waste Management in 2020		**26,265**

3.6 On-Road Transportation

Land use decisions, transportation system management, and vehicle technologies all play important roles in GHG emissions associated with the transportation sector. Increasing fuel efficiency while also reducing the number of automobile trips necessary for local residents can provide significant reductions in GHG emissions, as can more efficient management of the City's transportation infrastructure and practices. Measures designed to address the transportation sector will result in a reduction in emissions of approximately 365,000 in MT CO_2e in 2020 (Table 3-6).

Table 3-6. GHG Reduction Measures in the On-Road Transportation Sector

GHG Reduction Measures		GHG Reductions Achieved by 2020 (MT CO_2e)
State-6	**AB 1493 Pavley I and II:** Pavley I will reduce GHG emissions from automobiles and light duty trucks by 30% from 2002 levels by the year 2016. The regulations affect 2009 models and newer. Pavley II or Advanced Clean Cars will reduce GHG emissions from 2016 through to 2025.	**272,465**

[7] See: http://www.sbcounty.gov/Uploads/lus/Countywide/GreenhouseGas/Full-Vol-1.pdf

	Low Carbon Fuel Standard (LCFS): This measure reduces GHG emissions by requiring a low carbon intensity of transportation fuels sold in California by at least 10% by the year 2020. The low carbon fuel standard regulation is under development, and the reduction pathways are being analyzed.	
State-7	**AB 32 Transportation Reduction Strategies**: The AB 32 Scoping Plan includes vehicle efficiency measures (in addition to Pavley and LCFS) that focus on maintenance practices. The Tire Pressure Program will increase vehicle efficiency by assuring properly inflated automobile tires to reduce rolling resistance. The Low Friction Oils Program will increase vehicle efficiency by mandating the use of engine oils that meet certain low friction specifications. The Heavy-Duty Vehicle (related to weight class of vehicle) GHG Emission Reduction Program will increase heavy-duty vehicle (long-haul trucks) efficiency by requiring installation of best available technology and/or ARB-approved technology to reduce aerodynamic drag and rolling resistance.	**25,871**
State-8	**Sustainable Communities Strategy/Regional Blueprint Planning**: Participate with Southern California Association of Governments (SCAG) in developing a Sustainable Communities Strategy to meet the VMT reduction target developed by the ARB, as required by SB 375.	**60,002**
Muni-3	**Municipal Transportation Measures**: Implement measures that contribute toward community reductions and do not overlap with other community measures. These MCAP measures include *PM Vehicle Fleet-1* through *PM Vehicle Fleet-3* and *PM Employee Commute-1*.[a]	**884**
Trans-1	**Expand Public Transportation Infrastructure**: Work with appropriate agencies to create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car-sharing, bicycling, and walking.	**NQ[a]**
Trans-2	**Transit Frequency and Speed**: To the extent feasible, support shorter transit passenger travel time through reduced headways and increased speed. Support regional transit operator to reduce average fleet travel time by 5 minutes.	**NQ[a]**
Trans-3	**"Smart Bus" Technology**: Collaborate with LA Metro, Metrolink, and Omnitrans to implement "Smart Bus" technology, Global Positioning Systems (GPS), and electronic displays at all transit stops by 2020 to provide customers with "real-time" arrival and departure time information. Recent technological innovations have coupled GPS with electronic displays at transit stops to provide "real time" data to passengers. These tracking systems not only allow riders to know exactly when the next vehicle will be arriving, but also enables the system operator to track, schedule, and repair vehicles in service. Providing better information to passengers about scheduled arrivals can result in dramatic increases in passengers' perceptions of the service, even if the actual service provided is the same in terms of frequency and on-time arrivals.	**436**
Trans-4	**Expand Public Transportation Participation**: Collaborate with regional transit operator on programs to increase use of the City's public transportation system.	**NQ[b]**
Trans-5	**Low- and Zero-Emission Vehicles**: Support and promote the use of low-and zero-emission vehicles in the City.	**NQ[b]**
Trans-6	**Vehicle Idling**: Limit idling of Heavy Duty Trucks (greater than 26,000 gross vehicle weight) to 3 minutes (California law currently limits idling time to 5 minutes). Support the South Coast Air Quality Management District (SCAMQD) and ARB anti-idling requirements and provide signage in key areas where idling that is not consistent with SCAMQD or ARB requirements might occur.	**5,555**
Trans-7	**Parking Policy**: Adopt a comprehensive parking policy that encourages carpooling and the use of alternative transportation, including providing parking spaces for car-share vehicles at convenient locations accessible by public transportation. Consider requirements for the following to reduce VMT within the City by 2%. Designate 5% of downtown parking spaces for ride-sharing vehicles.	**NQ[b]**
Trans-8	**Event Parking:** Consider establishing policies and programs to reduce onsite	**NQ[b]**

	parking demand and promote ride-sharing during events at the Ontario Convention Center and other event venues. Consider a goal to reduce VMT at major events by 2%.	
Trans-9	**Roadway Management**: Implement traffic and roadway management strategies to improve mobility and efficiency, and reduce associated emissions. Consider a goal to reduce community vehicle fuel consumption by 2%.	NQ[b]
Trans-10	**Signal Synchronization**: Evaluate potential efficiency gains from further signal synchronization. Synchronize traffic signals throughout the City and with adjoining cities while allowing free flow of mass transit systems. Require continuous maintenance of the synchronization system. Consider a goal to reduce City-wide vehicle fuel consumption by 2%.	NQ[b]
Trans-11	**School Transit Plan**: Encourage local school districts to develop school transit plans to substantially reduce automobile trips to, and congestion surrounding, schools. (According to some estimates, parents driving their children to school account for 20–25% of the morning commute.) Plans may address, e.g., necessary infrastructure improvements and potential funding sources; replacing older diesel buses with low or zero-emission vehicles; mitigation fees to expand school bus service; Safe Routes to School programs, and; other formal efforts to increase walking and biking by students. Although this measure is not within the City's authority, Ontario can work with local school districts to develop these plans.	NQ[b]
Trans-12	**Ridesharing Programs**: The City will coordinate with local agencies to promote ride sharing programs in Ontario. Although the City does not have the legal authority to impose trip demand management programs on project applicants or employers, Ontario can work with local agencies to develop these programs. Consider a goal to reduce City-wide VMT by 2% through mode-shifts from single-occupancy vehicles to carpools. Facilitate employment opportunities that minimize the need for private vehicle trips. The City could also work with the County to participate in their rideshare measure, which includes exploring financial programs for the purchase or lease of rideshare vehicles, encouraging community car sharing through city employers, and encouraging creation of community rideshare incentives (gas cards, commuter-tax benefits, guaranteed ride home programs, etc.).	NQ[b]
Trans-13	**Bicycle and Pedestrian Infrastructure Plan**: Adopt a comprehensive bicycle and pedestrian infrastructure plan to expand the City's bicycle and pedestrian network. This plan would encourage residents and employees to use bicycles and walking as a method of transportation. Consider a goal to reduce City-wide VMT by 2% through mode-shifts from single-occupancy vehicles to bicycles.	NQ[b]
Trans-14	**Development Standards for Bicycles**: Establish standards for new development and redevelopment projects to support bicycle use. Consider a goal to reduce VMT resulting from new development by 4% through mode-shifts from single-occupancy vehicles to bicycles.	NQ[b]
Trans-15	**Smart Growth and Infill**: Encourage high-density, mixed-use, infill development and creative reuse of brownfield, under-utilized and/or defunct properties within the urban core. Consider a goal to reduce VMT resulting from new development by 5%.	NQ[b]
Trans-16	**Transit-Oriented Development**: Identify transit centers appropriate for mixed-use development, and promote transit-oriented, mixed-use development within these targeted areas. Consider a goal to reduce VMT resulting from new development by 2%.	NQ[b]
Total GHG Reductions in On-Road Transportation in 2020		**365,212**

[a] For a complete description of the MCAP measures, please see the City of Ontario Municipal Climate Action Plan.

[b] These measures are likely already covered by *State-8 Sustainable Communities Strategy/Regional Blueprint Planning*. For this reason they were not quantified to avoid double-counting GHG reductions.

3.7 Off-Road Equipment

Construction and landscaping equipment produce GHG emissions, both during their use and when idling. Reducing the carbon content of the fuel, replacing conventional gasoline or diesel-fueled equipment with electric equipment, and reducing time spent idling, along with other strategies, can lead to emissions reductions. Reductions associated with the use of off-road vehicles will result in the reduction of approximately 28,000 MT CO_2e in 2020 (Table 3-7).

Table 3-7. GHG Reduction Measures in the Off-Road Equipment Sector

	GHG Reduction Measures	Simple Definition	GHG Reductions Achieved by 2020 (MT CO_2e)
State-9	**Low Carbon Fuel Standard (LCFS):** This measure reduces GHG emissions by requiring a low carbon intensity of transportation fuels sold in California by at least 10% by the year 2020. The low carbon fuel standard regulation is under development, and the reduction pathways are being analyzed.	N/A	**20,465**
Muni-4	**Municipal Off Road Measures:** Implement measures that contribute toward community reductions and do not overlap with other community measures. These MCAP measures include *PM Vehicle Fleet-1* through *PM Vehicle Fleet-5.*[a]	N/A	**13**
Off Road-1	**Idling Ordinance:** Limit idling time for heavy-duty off-road construction equipment beyond ARB or local air district regulations and if not already required as part of CEQA mitigation. Recommended idling limit is 3 minutes.	Prohibit idling of heavy duty off-road construction vehicles to no more than 3 minutes.	**3,068**
Off Road-2	**Landscaping Equipment:** This measure supports reductions in gasoline-powered landscaping equipment use and/or reduces the number and operating time of such equipment community-wide. In addition, 75% of landscaping equipment in the City to be electric by 2020 and 100% by 2030.	Support landscape equipment replacement programs to replace 75% of all landscaping equipment with electric equipment (945 total pieces of landscaping equipment replaced). This measure saves approximately 532,000 gallons of gasoline.	**4,621**
Total GHG Reductions in Off-Road Equipment in 2020			**28,166**

[a] For a complete description of the MCAP measures, please see the City of Ontario Municipal Climate Action Plan.

3.8 Agriculture

Livestock emissions occur both due to enteric fermentation (livestock digestion) and manure management. This is a voluntary measure that encourages dairies and other livestock facilities in Ontario to reduce CH_4 and N_2O emissions and to promote methane reuse for energy, where feasible.

As a voluntary measure, the City would support dairies (and other animal operations) to consider existing and new technologies to control emissions from enteric fermentation and manure management and assess the feasibility of these technologies. Dairies would be encouraged to explore new technologies and implement feasible manure digestion projects based on their own local conditions and operations. The City would assist in seeking local, regional, state, and/or federal grants to help offset capital costs, linking dairies to new research opportunities, and working with local partners to help assess the feasibility of reduction projects.

The targets for reducing emissions under this measure are aspirational and voluntary, similar to the voluntary State measure for reducing agricultural emissions in California outlined in the Scoping Plan (measure A-1, *Methane Capture at Large Dairies*). Adoption of Agriculture-1 in the CCAP does not bind the City into making mandatory requirements for dairy operators. Just as in the scoping plan, given challenges of methane collection and digestion across the state, the GHG reductions presented below may or may not be feasible to achieve by 2020. Similar to the effort at the state level, the purpose of including this measure in the CCAP is to explore what can feasibly be done to reduce livestock emissions. If the reductions for this measure cannot be achieved due to technical, financial, economic or other reasons and the City is still short of its CAP target, the City would have to look at other means to meet the CAP target as part of the CAP update process (see Chapter 4 for more details on CAP updates).

The BAU forecast assumed a 9% decrease in the number of cattle from 2008 to 2020 (see Appendix A for a complete description of the Agriculture sector, including growth assumptions). This projection was based on the best available data at the time that the inventory and forecast was completed. It is possible that the actual number of cows will decrease by more than 9% by 2020 depending on market conditions and unanticipated development within the city. There may also be new dairies or animal operations coming into the city between now and 2020 that were not previously accounted for. As part of this measure, and as part of the CAP update process (which the city will conduct every 3 years), the City will reassess dairy and livestock emissions moving forward and work with the dairies that are present when this measure is implemented to consider existing and new technologies to control emissions from dairy cows and livestock and assess the feasibility of these technologies.

Methane capture from livestock could result in reductions in GHG emissions associated with agriculture in 2020 of approximately 80,000 MT CO_2e (Table 3-8). A discussion regarding technologies including manure management and enteric fermentation is provided below.

Table 3-8. GHG Reduction Measures in the Agriculture Sector

GHG Reduction Measures		GHG Reductions Achieved by 2020 (MT CO_2e)
Agriculture-1	**Methane Emissions Reduction for Animal Operations:** Support the dairy industry (and other animal operations) to consider existing and new technologies and methods to control emissions from enteric fermentation and manure management and assess the feasibility and cost effectiveness of these technologies. Animal operations should strive to capture as much methane from manure management as feasible. Captured biogas can also be used in place of natural gas for heating, converted to vehicle fuel, used to replace gasoline and diesel, or combusted in a generator to produce renewable electricity.	**80,352**
Total GHG Reductions in Agriculture in 2020		**80,352**

Manure Management

The most common technology for reducing GHG emissions from manure management is manure collection and processing in an anaerobic digester. Captured biogas from the digester can be used in place of natural gas for heating, converted to vehicle fuel, used to replace gasoline and diesel, or combusted in a generator to produce renewable electricity which can then be used onsite or sold to the local utility.

Successful manure digestion projects must consider how site-specific conditions influence the characteristics of the manure, including the solids content and biogas potential. A key factor in system design is the moisture content of the manure, which is influenced by the housing system, environmental conditions, and type of bedding. Manure collection and conveyance is also important, since the frequency of collection can affect the biogas content of manure.

The dairies in Ontario are primarily dry-lot dairies, where traditional anaerobic digestion of manure (which rely on daily flushing of manure from free-stall enclosures to centralized lagoons) can be challenging to implement. In Ontario, the high presence of solids in dry lot manure and the infrequency of manure collection are two barriers to successful manure digestion projects. Other barriers to implementation include air quality permitting of the digesters and combustion engines and the availability of water to improve the quality of the manure for digestion.

In 2006, the IEUA developed and implemented a manure anaerobic digestion demonstration project for the collection and treatment of dairy manure from 14 dairy farms in Chino Basin. A Modified Mix Plug Flow system was used for digestion and to generate electricity from the captured methane. The system reduced manure management emissions of CH4 by 21% and N2O by 95%, and overall GHG emissions by 58% (Bartram et. al. 2004). The system also generated 120,970 kWh of electricity per month, enough to cover 75% of the digester's power requirement and 50% of the electricity demands of a desalter that purifies groundwater for drinking (Dairy Herd Management 2002). With funding from the Dairy Power Production Program and additional grant funding, the simple payback period was estimated to be 6.6 years (Western United Resource Development, Inc. 2009). Although the system eventually shut down due to technological problems, this program demonstrates the feasibility of implementing digestion at dry lot dairies in the region. Long-term cost effectiveness in absence of grant funding has yet to be demonstrated.

Anaerobic digestion of manure also has other co-benefits besides reducing GHG emissions, such as improving water quality and reducing odor which can be quality of life improvements for Ontario.

Enteric Fermentation

Dairies and livestock operations are also encouraged to explore ways to reduce GHG emissions from enteric fermentation, which represents a large source of emissions in Ontario. Potential methods for reducing these emissions include manipulating animal diet to inhibit a rumen environment favorable to methanogens. A range of potential emission mitigation options include dietary oils (such as whole cottonseed oil, sunflower oil, coconut oil, and palm oil), the use of corn or legume silage in place of grass silage, use of concentrate feeds, nitrates, ionophores, tannins, and improving forage quality and the overall efficiency of dietary nutrient use (Historv et. al 2013: 5045; Center for Climate and Energy Solutions 2009). As one example, some studies have indicated that the use of dietary oils can reduce CH4 emissions by up to 6 to 22% (Center for Climate and Energy Solutions 2009). The long-term effects of many of these practices have not been well established and further research is needed, but a number of options exist for reducing GHG emissions from enteric fermentation.

Under this measure, the City would work with dairy and livestock operators to test potential feasible and cost-effective approaches suitable for application in Ontario. The City would help to identify grant sources of funding to help in piloting and demonstrating promising approaches with voluntary dairy/livestock operator participation.

3.9 Water Transport, Distribution, and Treatment

The transport and use of water by residents and businesses in the City utilizes significant amounts of energy, which in turn leads to GHG emissions. The City can take measures to both reduce the use of water and increase the efficiency of its water-related infrastructure. Measures to reduce water consumption and improve water transport efficiency would reduce emissions of GHGs by approximately 6,500 MT CO_2e in 2020 (Table 3-9).

Table 3-9. GHG Reduction Measures in the Water Transport, Distribution, and Treatment Sector

GHG Reduction Measures		Simple Definition	GHG Reductions Achieved by 2020 (MT CO_2e)
Muni-5	**Municipal Water Measures:** Implement measures that contribute toward community reductions and do not overlap with other community measures. This includes *PM Water-4.*	N/A	**272**
Water-1	**Water Conservation for Existing Buildings:** Implement a program to renovate existing buildings to a higher level of water efficiency. Require 25% of existing buildings within the community to achieve a 25% reduction in water use. This measure will reduce both indoor and outdoor water use.	15,282 existing residential units to reduce total water use (indoor + outdoor) by 25% for a total savings of 459 MG (30,000 gallons/home). 25% of existing non-residential units to reduce total water use (indoor + outdoor) by 25% for a total savings of 698 MG.	**2,038**
Water-2	**Outdoor Irrigation Monitoring and Management System:** Install a water monitoring and management system (Smart	Support programs to reduce residential outdoor water use by 867 MG and non-residential	**2,804**

GHG Reduction Measures		Simple Definition	GHG Reductions Achieved by 2020 (MT CO_2e)
	controllers, etc.) for all of the City's irrigation needs to reduce the City's outdoor water consumption by 10% by 2020.	outdoor water use by 1,455 MG.	
Water-3	**Water System Efficiency:** Maximize efficiency at drinking water treatment, pumping, and distribution facilities, including development of off-peak demand schedules for heavy commercial and industrial users. Design and implement peak load management and demand response programs for water supply, treatment, and distribution, including interface with existing automated systems for building energy management and SCADA systems.	N/A	**NQ**
Water-4	**SB X7:** SB X7 was enacted in November 2009 and requires urban water agencies throughout California to increase water conservation to achieve a statewide goal of a 20% reduction in urban per capita use by December 31, 2020.	Reduce City-wide water use by 936 MG under the direction of the City of Ontario 2010 Urban Water Management Plan.	**1,397**
Total GHG Reductions in Water Transport, Distribution, and Treatment in 2020			**6,511**

3.10 SF_6 from Electricity Consumption

By reducing overall demand for electricity in the City, SF_6 emission reductions from electricity transmission are also reduced. However, because these emissions are not associated with one particular measure, no measure number was assigned. SF_6 reductions would result in a decrease in GHG emissions of approximately 1,700 MT CO_2e.

Table 3-10. GHG Reduction Measures in SF_6 from Electricity Consumption

GHG Reduction Measures		GHG Reductions Achieved by 2020 (MT CO_2e)
2008 SF_6 from Electricity Consumption Emissions		5,310
N/A	These reductions represent SF_6 emission reductions from electricity transmission as a result of all measures that reduce the grid electricity demand in Ontario in 2020. These measures include those in the building energy, renewable energy, wastewater, and water categories. These reductions are not associated with one particular measure, and therefore no measure number is assigned.	**1,678**
Total GHG Reductions in SF_6 from Electricity Consumption in 2020		**1,678**

3.11 Miscellaneous

There are a variety of additional measures that can help reduce emissions above and beyond the amount quantified in this CAP. However, due to insufficient data, these reductions were not quantified. These measures could lead to GHG reductions in 2020, but the amount of reductions is unknown. Potentially beneficial but unquantifiable miscellaneous measures are described in Table 3-11.

Table 3-11. Miscellaneous GHG Reduction Measures

GHG Reduction Measures		GHG Reductions Achieved by 2020 (MT CO_2e)
Misc-1	**Climate Change Awareness:** Utilize a variety of media outlets to promote climate change awareness and GHG reduction.	NQ
Misc-2	**Carbon Sequestration:** Establish a City-wide carbon sequestration project and sequestration goal of 1,000 MT CO_2 per year.	NQ
Misc-3	**Shade Tree Planting:** Promote the planting of shade trees and establish shade tree guidelines and specifications. Plant 1,000 trees per year from 2012–2020 for a total of 9,000 trees by 2020.	NQ
Misc-4	**Refrigeration and Air Conditioning Disposal:** Institute an ordinance requiring residences, businesses, and City facilities to practice RAD for all decommissioned units, including refrigerators/freezers, window air-conditioning units, and dehumidifiers.	NQ
Misc-5	**Pervious Paving:** Promote the use of pervious concrete for pavement projects. Explore grant funding opportunities for pervious concrete.	NQ
Misc-6	**Infiltration**: Promote onsite infiltration, as required by the NPDES Permit. Promote the use of pervious concrete and asphalt for pavement and parking lot projects.	NQ
Total Miscellaneous GHG Reductions in 2020		NQ

CITY OF ONTARIO

Community Climate Action Plan

Chapter 4: Implementation of the CAP

Chapter 4
Implementation of the CAP

The success of the Community CAP will depend on cooperation, commitment, and participation by all City departments and employees. This section outlines key steps the City will follow in order to ensure that the measures presented in the Community CAP that are sufficient to meet the reduction target by 2020 are implemented, and that the City achieves GHG reductions.

Implementation of the Community CAP involves the following steps.

- Administration and Staffing.
- Financing and Budgeting.
- Scheduling.
- Coordination.
- Outreach and Education.
- Monitoring, Reporting, and Adaptive Management.
- Planning for 2020 and beyond.

The following sections describe the City's plan to implement the Community CAP programs. To meet the City's reduction target by 2020, Community CAP measures are to be implemented in a timely manner. Figure 4-1 demonstrates the major stages of Community CAP implementation. Specific actions associated with measure implementation are described in Section 4.3, *Scheduling*

4.1 Administration and Staffing

In January 2011, the Climate Action Plan Technical Advisory Committee (CAPTAC) was formed. The 16-member CAPTAC is composed of department directors and managers designated by the heads of each City agency and responsible for development and implementation of the Community CAP. The CAPTAC is charged with assessing and refining the measures identified in the Community CAP.

In addition to formation of the CAPTAC, the City identified the need for a sustainability position to coordinate City efforts and the development of the Community CAP. The City appointed a Sustainability Program Manager in July 2010 to coordinate and implement the Community CAP efforts and sustainability programs. This individual serves as the CAPTAC team leader and is responsible for the coordination of the CAPTAC, community outreach support, in addition to implementing the Community CAP. Additional responsibilities of the Sustainability Program Manager include the following.

- Establishing guidelines for reporting and documenting emission reduction progress.
- Developing the protocol for monitoring the effectiveness of the reduction measures.
- Investigating methods for utilizing existing resources and harnessing employee support to better streamline implementation of the Community CAP.
- Coordinating and assisting in securing long-term financing for reduction programs.

- Conducting periodic outreach efforts to inform and involve the employees and community of the City's community and municipal GHG reduction measures.
- Serving as the external communication hub to local and regional organizations related to climate change including the San Bernardino Associated Governments (SANBAG) and SCAG.

City staffing for the CAPTAC includes the Sustainability Program Manager and the following primary agency/departments.

- **Development Agency:** Planning, Building and Landscape Departments will provide expertise in evaluating and managing community impacts of the CAP. The Engineering Department, is responsible for implementation of streetlight and traffic signal measures.
- **Ontario Municipal Utilities Company:** Responsible for facilitating implementation of water efficiency and solid waste measures.
- **Community Services:** The Maintenance Department, located within Community Services, is responsible for implementation of energy/water efficiency measures for outdoor public facilities.
- **City Administration:** The Human Resources Department, located within City Administration, is responsible for providing expertise in ride-share activities and sub-regional coordination efforts.
- **Housing and Municipal Services:** Responsible for supporting implementation of energy/water efficiency measures for building facilities, vehicle fleet, and low income housing.
- **Administrative Services:** Provides expertise in evaluating and managing the economic impacts of selected measure implementation.

CAPTAC members may alternate or be added as needed to ensure coordinated and effective leadership.

4.2 Financing and Budgeting

Implementation of the Community CAP will require interagency collaboration from strategic public funding by the City, regional government agencies, to the state for capital projects coupled with local businesses, developers/builders, residential homeowner cooperation. One of the first priorities for implementing the Community CAP will be to assess the ongoing or planned activities currently anticipated within the City that make a direct or indirect contribution to GHG reduction. Funding sources have not been identified for all actions; however, numerous federal state, and regional sources may be available.

The cost of implementing the GHG reduction measures identified in the Community CAP will take into account the costs and anticipated staff time as well as the benefit and cost savings of the proposed implementation measure. The CAPTAC will pursue outside funding sources and/or programs that support the CAP measures to the extent feasible. A variety of federal, regional, state, and local funds should be considered for Community CAP financing. Several potential financing sources have been identified.

- Federal Tax Credits for Energy Efficiency
- Power purchase agreements
- Energy Efficient Mortgage
- California Department of Resources Recycling and Recovery
- California Air Resources Board
- Department of Water Resources recycled water, capital improvements, and onsite retrofits
- Air Quality Management District fleet grants related to natural gas
- Chino Basin Desalter Authority Joint Powers Authority
- Southern California Edison Energy-Efficient/Renewable Energy Incentives
- California Solar Initiative
- ARB Renewable Energy Credits
- Community Development Block Grant
- Resource Conservation Funds 2009
- California Integrated Waste Management Board grants and funds
- Clean Water State Revolving Funds
- Inland Empire Utility Agency
- Community Facilities District
- SANBAG HERO Program October 2013

Additional potential sources will be identified as new opportunities become available.

4.3 Scheduling

To ensure all reduction measures are implemented as seamlessly as possible, an implementation schedule has been developed. Figure 4-1 outlines the key priorities and anticipated timelines for the implementation phase, while Table 4-1 provides the phase in which each implementation measure will be initiated, along with potential funding sources and the department charged with implementing each measure. A simple definition of each measure is also provided.

Figure 4-1. Implementation Timeline

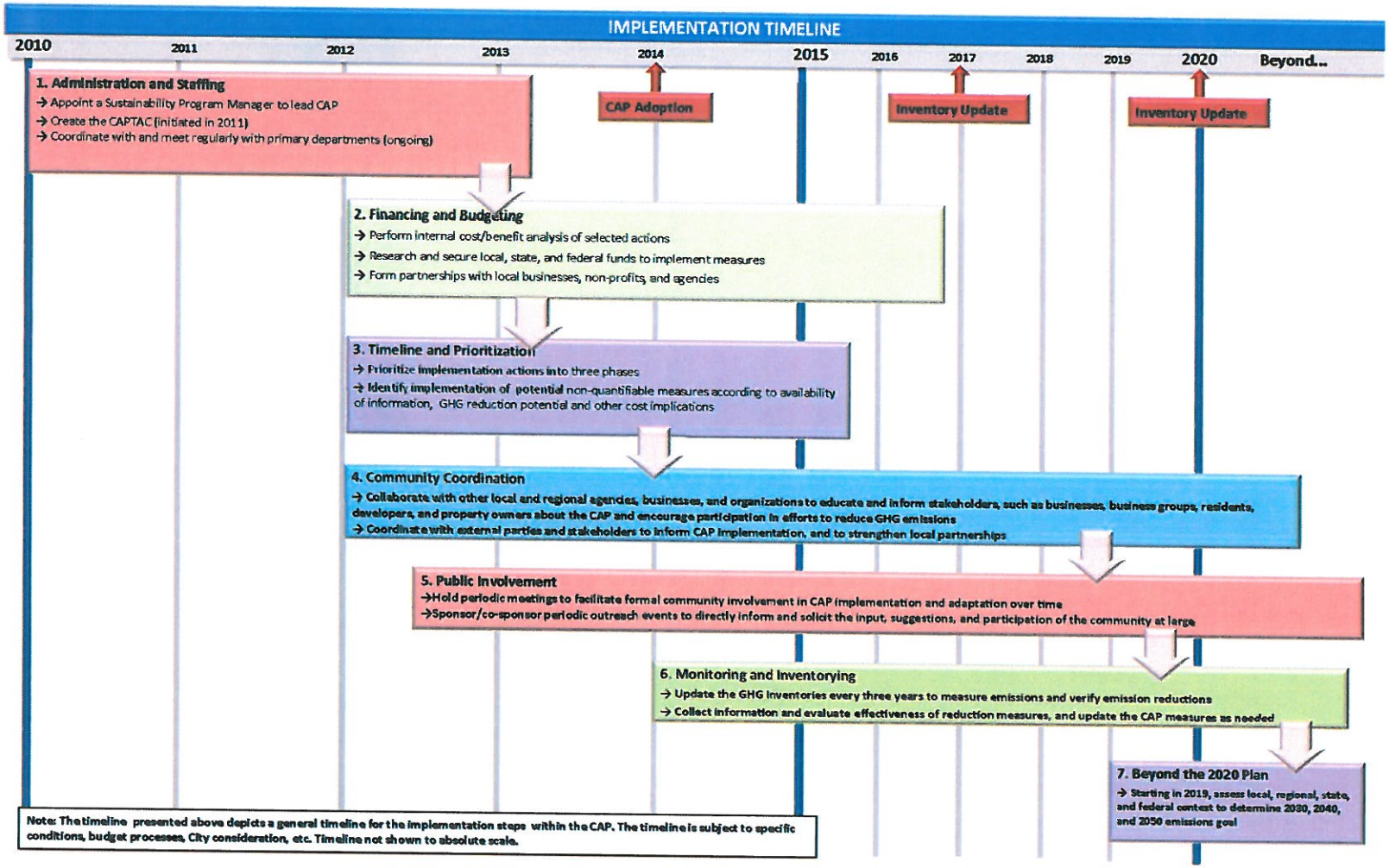


Table 4-1. Phasing, Lead Department, and Potential Funding for Implementation Measures

Measure Number and Description[a]	Phase of Initial Implementation	Potential Funding Source[b]	Lead Department[c]
Performance Standard For New Development			
PS-1: New projects emitting more than 3,000 MT CO_2e per year need to reduce emissions by 25%. Refer to Appendix C for more information.	2014–2020	Grants/ tax credits/ impact fees/ rebates/ private funding	DEV
BMP-1: New projects emitting less than 3,000 MT CO_2e per year to exceed Title 24 Energy Efficiency Standards by at least 5%, or equivalent level of GHG emission reduction	2014–2020	Grants/ tax credits/ private funding	DEV
Building Energy			
Energy-1: CAP Consistency: Ensure that the City's local Climate Action, Land Use, Housing, and Transportation Plans are aligned with, support, and enhance any regional plans that have been developed consistent with state guidance to achieve reductions in GHG emissions.	2014–2020	N/A	DEV, HMS
Energy-2: Regional Cooperation: Coordinate with special districts, nonprofits, and other public organizations to share resources, achieve economies of scale, and develop green building policies and programs that are optimized on a regional scale.	2014–2020	SANBAG	DEV, HMS
Energy-3: Energy Efficient Funding for Existing Low Income Residents: Partner with community services agencies to fund energy efficiency projects. Retrofit 4,903 existing single-family and multi-family low income homes to save 2,632,164 kWh and 23,216 therms (537 kWh and 5 therms per home). This represents a 27% penetration rate for low income homes.	2014–2020	Grants/ tax credits/ private equity	DEV, HMS

Measure Number and Description[a]	Phase of Initial Implementation	Potential Funding Source[b]	Lead Department[c]
Energy-4: Energy Efficient to Promote Retrofits for Existing Residential Buildings: Incentivize, or otherwise support, voluntary energy efficiency retrofits of existing residential buildings to achieve reductions in natural gas and electricity usage. Retrofit 7,684 single-family homes and 5,322 multi-family homes.	2014–2020	Grants/ tax credits/ private equity	DEV HMS
Energy-5: Energy Efficient to Promote Retrofits for Existing Non-Residential Buildings: Voluntary programs for existing non-residential facilities improve building-wide energy efficiency by 20% by 2020. Retrofit 27% of existing non-residential buildings to save 52.7 million kWh and 3.3 million therms.	2014–2020	Grants/ tax credits/ private equity	DEV
Energy-6: Streetlights: Adopt outdoor lighting standards to reduce electricity consumption. Require 40% reduction in energy use from traffic signals and streetlights by 2020. Reduce streetlight and traffic signal electricity use by 40% to save 14.3 million kWh.	2014–2020	Grants/CIP	DEV, HMS
Renewable Energy			
Renewable Energy-1: Solar Installation for Existing Non-Residential for Major Rehabilitations or Expansions: Install solar photovoltaic panels on nonresidential buildings greater or equal to 25,000 square feet in size requiring discretionary permits for major rehabilitations or expansions (additions of 25,000 square feet of office retail/commercial or 100,000 square feet of industrial/warehouse floor area). Install solar panels on the roofs of 4.1 million square feet of existing commercial buildings and 1.5 million square feet of existing industrial/warehouse buildings	2014–2020	Grants/ tax credits/ private funding	DEV
Renewable Energy-2: Solar Installation in Existing Single Family Housing: Install solar panels on 22% of existing single-family homes by 2020. Install solar panels on 6,261 existing single-family residences, for a total of 32 MW of solar.	2014–2020	Grants/ tax credits/ private funding	DEV

Measure Number and Description[a]	Phase of Initial Implementation	Potential Funding Source[b]	Lead Department[c]
Renewable Energy-3: Solar Installation in Existing Nonresidential Buildings: Install solar panels on 32% of existing nonresidential buildings by 2020. Install solar panels on the roofs of 12.8 million square feet of existing commercial and 8.6 million square feet of existing industrial/warehouse buildings, for a total of 137 MW of solar.	2014–2020	Grants/ tax credits/ private funding	DEV
Wastewater Treatment			
Wastewater-1: Recycled Water: Require 50% of all water used for non-potable sources to be recycled water by 2020. Require all new parks and schools to use 100% recycled water for non-potable outdoor uses, as feasible. Develop public educational materials that support and encourage the use of recycled water. Adopt a City Municipal facility goal of 50% use of recycled water for non-potable sources.	2015–2020	Public utility/ rate increase	OMUC
Wastewater-2: Waste-to-energy/Methane Recovery: Encourage IEUA to implement waste-to-energy projects at the IEUA RP-1 wastewater treatment plant by 2020, and to utilize collected gas to fuel onsite stationary sources.	2018–2020	Public utility/ rate increase	OMUC
Solid Waste Management			
Waste-1: Waste Diversion: Divert 75% of City-generated waste from landfills.	2014–2020	Grants/fees	OMUC
Waste-2: Construction and Demolition Waste Recovery Ordinance: Implement an ordinance requiring building projects to recycle or reuse at least 50% of unused or leftover building materials.	2015–2020	Grants/fees	OMUC
On-Road Transportation			
Trans-1: Expand Public Transportation Infrastructure: Work with appropriate agencies to create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car-sharing, bicycling and walking.	2014–2020	Grants/CIP/ fare increase/ private partnerships	DEV

Measure Number and Description[a]	Phase of Initial Implementation	Potential Funding Source[b]	Lead Department[c]
Trans-2: Transit Frequency and Speed: To the extent feasible, support shorter transit passenger travel time through reduced headways and increased speed. Support regional transit operator to reduce average fleet travel time by 5 minutes.	2015–2020	Grants/CIP/ fare increase/ private partnerships	DEV
Trans-3: "Smart Bus" Technology: Collaborate with LA Metro, Metrolink, and Omnitrans to implement "Smart Bus" technology.	2014–2020	Grants/CIP/fare increase/private partnerships	DEV
Trans-4: Expand Public Transportation Participation: Collaborate with regional transit operator on programs to increase use of the City's public transportation system.	2014–2020	Grants/CIP/fare increase/private partnerships	DEV
Trans-5: Low- and Zero-Emission Vehicles: Support and promote the use of low-and zero-emission vehicles in the City.	2014–2020	Grants/CIP/fare increase/private partnerships	DEV
Trans-6: Vehicle Idling: Prohibit idling of Heavy Duty Trucks (greater than 26,000 gross vehicle weight) for longer than 3 minutes.	2016–2020	Grants/CIP/fare increase/private partnerships	DEV
Trans-7: Parking Policy: Adopt a comprehensive parking policy that encourages carpooling and the use of alternative transportation, including providing parking spaces for car-share vehicles at convenient locations accessible by public transportation. Consider requirements for the following to reduce VMT within the City by 2%. Designate 5% of downtown parking spaces for ride-sharing vehicles.	2016–2020	Grants/CIP/ taxes	DEV
Trans-8: Event Parking: Consider establishing policies and programs to reduce onsite parking demand and promote ride-sharing during events at the Ontario Convention Center and other event venues. Consider a goal to reduce VMT at major events by 2%.	2014–2020	Parking fees/ taxes	DEV/AS
Trans-9: Roadway Management: Implement traffic and roadway management strategies to improve mobility and efficiency, and reduce associated emissions. Consider a goal to reduce community vehicle fuel consumption by 2%.	2015–2020	Grants/CIP	DEV

Measure Number and Description[a]	Phase of Initial Implementation	Potential Funding Source[b]	Lead Department[c]
Trans-10: Signal Synchronization: Evaluate potential efficiency gains from further signal synchronization. Synchronize traffic signals throughout the City and with adjoining cities while allowing free flow of mass transit systems. Require continuous maintenance of the synchronization system. Consider a goal to reduce City-wide vehicle fuel consumption by 2%.	2015–2020	Grants/CIP	DEV
Trans-11: School Transit Plan: Encourage local school districts to develop school transit plans to substantially reduce automobile trips to, and congestion surrounding, schools. (According to some estimates, parents driving their children to school account for 20–25% of the morning commute.) Plans may address, e.g., necessary infrastructure improvements and potential funding sources, replacing older diesel buses with low or zero-emission vehicles, mitigation fees to expand school bus service, Safe Routes to School programs, and other formal efforts to increase walking and biking by students. Although this measure is not within the City's authority, Ontario can work with local school districts to develop these plans.	2014–2020	Grants/CIP/ taxes	DEV
Trans-12: Ridesharing Programs: Coordinate with local agencies to promote ride sharing programs in Ontario (CAPCOA 2010). Although the City does not have the legal authority to impose trip demand management programs on project applicants or employers, Ontario can work with local agencies to develop these programs. Consider a goal to reduce City-wide VMT by 2% through mode-shifts from single-occupancy vehicles to carpools.	2014–2020	Grants/CIP/ fare increase/ private partnerships	DEV, AS
Trans-13: Bicycle and Pedestrian Infrastructure Plan: Adopt a comprehensive bicycle and pedestrian infrastructure plan to expand the City's bicycle and pedestrian network. This plan would encourage residents and employees to use bicycling and walking as a method of transportation. Consider a goal to reduce City-wide VMT by 2% through mode-shifts from single-occupancy vehicles to bicycles.	2014–2020	Grants/CIP/ taxes	DEV

Measure Number and Description[a]	Phase of Initial Implementation	Potential Funding Source[b]	Lead Department[c]
Trans-14: Development Standards for Bicycles: Establish standards for new development and redevelopment projects to support bicycle use. Consider a goal to reduce VMT resulting from new development by 4% through mode-shifts from single-occupancy vehicles to bicycles.	2014–2020	Grants/CIP/ taxes	DEV
Trans-15: Smart Growth and Infill: Encourage high-density, mixed-use, infill development and creative reuse of brownfield, under-utilized and/or defunct properties within the urban core. Consider a goal to reduce VMT resulting from new development by 5%.	2015–2020	Grants	DEV
Trans-16: Transit-Oriented Development: Identify transit centers appropriate for mixed-use development, and promote transit-oriented, mixed-use development within these targeted areas. Consider a goal to reduce VMT resulting from new development by 2%.	2015–2020	Grants/CIP	DEV
Off-Road Equipment			
Off Road-1: Heavy Duty Vehicle Idling Ordinance: Adopt an ordinance that requires idling of heavy duty off-road construction vehicles to no more than 3 minutes.	2015-2020	Grants/ private equity	DEV, HMS, CS
Off Road-2: Landscaping Equipment: Support landscape equipment replacement programs to replace 75% of all landscaping equipment with electric equipment (945 total pieces of landscaping equipment replaced). This measure saves approximately 532,000 gallons of gasoline.	2014-2020	Grants/ incentives/ private equity	DEV, HMS, CS
Agriculture			

Measure Number and Description[a]	Phase of Initial Implementation	Potential Funding Source[b]	Lead Department[c]
Agriculture-1: Methane Emissions Reduction for Animal Operations: Support dairies (and other animal operations) to consider existing and new technologies and methods to control emissions from enteric fermentation and manure management and assess the feasibility and cost effectiveness of these technologies. Animal operations should strive to capture as much methane from manure management as feasible. Captured biogas can also be used in place of natural gas for heating, converted to vehicle fuel, used to replace gasoline and diesel, or combusted in a generator to produce renewable electricity.	2018-2020	Grants/private	DEV
Water Transport, Distribution, and Treatment			
Water-1: Water Conservation for Existing Buildings (Indoor + Outdoor): Require 25% of existing buildings within the community to achieve a 25% reduction in water use. This measure will reduce both indoor and outdoor water use. A total of 15,282 existing residential units to reduce total water use (indoor + outdoor) by 25% for a total savings of 459 MG (30,000 gallons/home). 25% of existing non-residential units to reduce total water use (indoor + outdoor) by 25% for a total savings of 698 MG.	2016–2020	Grants/ rebates/ private equity	DEV, HMS, CS
Water-2: Irrigation Monitoring and Management System (Outdoor): Install a water monitoring and management system (Smart controllers, etc.) for all of the City's irrigation needs to reduce the City's water consumption by 10% by 2020.	2015–2020	Impact fees/grants	DEV, HMS,CS
Water-3: Water System Efficiency: Design and implement peak load management and demand response programs for water supply, treatment, and distribution, including interface with existing automated systems for building energy management and SCADA systems.	2015–2020	Public utilities/grants	OMUC
Water-4: SB X7: Urban water agencies throughout California are required to increase water conservation to achieve a statewide goal of a 20% reduction in urban per capita use by 2020 per SB X7. The Ontario 2010 Urban Water Management Plan outlines the approaches to achieving that reduction.	2014–2020	Grants/ rebates/ private equity	OMUC
Miscellaneous			

Measure Number and Description[a]	Phase of Initial Implementation	Potential Funding Source[b]	Lead Department[c]
Misc-1: Climate Change Awareness: Utilize a variety of media outlets to promote climate change awareness and GHG reduction.	2014–2020	Grants/CIP	DEV
Misc-2: Carbon Sequestration: Establish a City-wide carbon sequestration project and sequestration goal of 1,000 MT CO_2 per year.	2018–2020	Grants	DEV, CS
Misc-3: Shade Tree Planting: Promote the planting of shade trees and establish shade tree guidelines and specifications.	2014–2020	Grants/CIP	DEV,CS
Misc-4: Refrigeration and Air Conditioning Disposal: Institute an ordinance requiring residences, businesses, and city facilities to practice RAD for all decommissioned units, including refrigerators/freezers, window air-conditioning units, and dehumidifiers.	2015–2020	Grants/ businesses	OMUC
Misc-5: Pervious Paving: Promote the use of pervious concrete for pavement projects. Explore grant funding opportunities for pervious concrete.	2015–2020	Grants/CIP	HMS, CS, DEV
Misc-6: Infiltration: Promote onsite infiltration, as required by the NPDES Permit. Promote the use of pervious concrete and asphalt for pavement and parking lot projects.	2015–2020	CIP	DEV, CS

[a] Only local measures for which emissions could be quantified are listed here. Additional state measures and measures that could contribute to GHG emissions, but for which emissions could not be quantified, are detailed in Chapter 3.

[b] CIP funding sources may include any of the following; general fund, internal services fund and/or Enterprise fund.

[c] **Key:** AS = Administrative Services, DEV=Development Agency, HMS=Housing & Municipal Services Agency, OMUC = Ontario Municipal Utilities Company, CS=Community & Public Services Agency, IT=Information Technology Agency

4.4 Coordination and Outreach

The citizens and businesses within the City of Ontario are integral to the success of the CAP. Their involvement is essential, considering that several measures depend on the voluntary commitment, creativity, and participation of the community.

The City would collaborate with other local and regional agencies, businesses, and organizations to educate and inform stakeholders, such as businesses, business groups, residents, developers, and property owners about the CAP and encourage participation in efforts to reduce GHG emissions. The City would schedule periodic meetings to facilitate community involvement in CAP implementation and adaptation over time. These meetings would be targeted to stakeholder groups and provide information on CAP implementation progress. Stakeholders would be provided an opportunity to comment on potential improvements or changes to the CAP. The City, in partnership with other organizations, would also sponsor/co-sponsor periodic outreach events to directly inform and solicit the input, suggestions, and participation of the community at large.

4.5 Regional Involvement

There are substantial opportunities to enhance the effectiveness of the CAP through regional collaboration. The City is an active participant in SANBAG's efforts to leverage its role as a transportation planning agency and the regional scope of its authority to reduce GHG emissions in several emissions sectors in the region. As part of this partnership, several opportunities to explore the potential to leverage resources are provided to support implementation of the CAP. Potential opportunities and partners include the following.

- **San Bernardino Association of Governments (SANBAG)**
  - **San Bernardino County Regional Greenhouse Gas Reduction Plan**—The City of Ontario is one of 22 partnership cities participating in the development of a sub-regional GHG Reduction Plan that includes a current year (2008) GHG emissions inventory, future year (2020) GHG emissions forecast, City 2020 reduction goal, and GHG reduction measures. The intent is to develop consistent baseline information for jurisdictions to use for their development of community climate action plans.
  - **Municipal Regional Joint Solar Power Purchase Agreement Program**—The City of Ontario is one of the member cities participating in a Joint Procurement for Solar Photovoltaic Systems. The program brings together a number of cities and other government agencies to aggregate their solar sites, and then those that make technical and economic sense are bundled together and negotiate a power purchase agreement.
  - **Property Assessment Clean Energy (PACE) Program**—The City of Ontario is one of the member cities participating in the regional energy efficiency and water conservation improvements loan program as defined by AB 811 and AB 474 and commonly referred to as a PACE Program. SANBAG has completed the process and launched the HERO Program in October 2013.
- **Southern California Edison (SCE)**—SCE offers numerous incentives and rebate programs to encourage energy efficiency. Resources offered by SCE may reduce program implementation and administration costs. There may also be opportunities for cooperation on community-scale alternative energy installations (e.g., wind, solar).
- **Southern California Gas Company (SCGC)**—SCGC offers numerous incentives and rebate programs to encourage energy efficiency. Resources offered range from Energy Efficient Starter Kits to the High Efficiency Hot Water Distribution Program (Solar). There may also be opportunities for cooperation on community-scale energy efficiency programs and alternative energy installations (e.g., solar water heaters).
- **Inland Empire Utilities Agency (IEUA)**
  - **Residential Conservation Rebates**—the Inland Empire Utilities Agency (IEUA) offers rebates for the purchase of residential water conservation appliances and equipment including: high efficiency clothes washers, SmartTimer controllers for lawns, and high efficiency sprinkler nozzles. IEUA also offers free landscape evaluations and a high efficiency toilet installation co-pay program.
  - **Commercial Conservation Rebates**—IEUA offers rebates for the purchase of commercial water conservation appliances and equipment including: toilets and urinals, laminar flow

restrictors, connectionless food steamers, cooling towers, dry vacuum pumps, air cooled ice machines, smart controllers for irrigation, high efficiency sprinkler nozzles, large rotary nozzles for irrigation, and in-stem flow regulators. IEUA also offers free landscape evaluations and a high efficiency toilet installation co-pay program.

  - **Water Calculator**—Through IEUA's website, residents and businesses can calculate their annual water usage using the H_2O Conserve Water Calculator.
  - **Landscaping**—IEUA provides the following water conservation resource materials related to landscaping: how to use irrigation controllers and leading manufacturers of controllers; a guide to edible landscaping; a database of California friendly plants; a cost comparison for California native and drought-tolerant plants versus exotic plants from the East Coast; and other materials.

- **SANBAG Long Range Transportation**—In order to fully implement the transportation reduction measures that promote mixed-use development, continued coordination with regional transportation agencies would be necessary. With SB 375 and its linkage to transportation funding, it would also be crucial for the City and transportation agencies to develop a shared vision of how transportation and land use can be consistent with the next RTP and the required SCS.
- **CalRecycle**—Waste-1 includes the adoption of a 75% waste diversion goal. Coordination with the County to provide the facilities, programs, and incentives would help ensure this goal can be achieved by 2020.

4.6 Monitoring, Reporting, and Adaptive Management

Regular monitoring is important to ensure programs are functioning as they were originally intended. Early identification of effective strategies and potential issues will enable the City to make informed decisions on future priorities, funding, and scheduling. Moreover, monitoring provides concrete data to document the City's progress toward achieving its GHG emissions target. The Development Agency will be responsible for the monitoring procedures that encompass information gathering of specific CAPTAC sector measures, analyzing data and implementing monitoring tools currently being developed by SANBAG, and recommending adjustments to the CCAP. The CAPTAC will be responsible for developing the monitoring procedures for the Community CAP as opportunities arise.

The City will conduct periodic comprehensive reviews of the Community CAP on a 3-year cycle that will involve an appropriate level of re-inventorying of emission sources in order to obtain a more complete understanding of GHG conditions and results of Community CAP measure progress. The Sustainability Program Manager will compile monitoring results, and will be responsible for the coordination and development of each comprehensive update. Upon review of the Community CAP, additional measures or adjustments to existing measures will be addressed in order to continue to reduce GHG emissions.

4.7 Planning for 2020 and Beyond

While GHG management in California is currently focused on a 2020 target, Executive Order S-03-05 articulates a GHG reduction goal for California in 2050. Executive Order S-03-05 sets a goal that by 2050, California will reduce GHG emissions to a level that is 80% below the level of 1990. It is reasonably foreseeable that as California approaches its first milestone in 2020, focus will shift to the 2050 target. A detailed plan for how the state would meet this target is expected, and the City will monitor developments at the national and state levels to ensure it will continue to support efforts at all levels of government.

Beginning in 2018, the City would commence planning for the post-2020 period. At this point, the City would have implemented the first two phases of the Community CAP and would have a better understanding of the effectiveness and efficiency of different reduction strategies and approaches. The new post-2020 reduction plan would include a specific target for GHG reductions for 2030, 2040, and 2050. The targets would be consistent with broader state and federal reduction targets and with the scientific understanding of the needed reductions by 2050.

CITY OF ONTARIO

Community Climate Action Plan

Chapter 5: References

Chapter 5
References

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