CLIMATE ACTION PLAN

A QUALIFIED GREENHOUSE GAS REDUCTION STRATEGY

Adopted

May 7, 2013

City of Milpitas

CLIMATE ACTION PLAN AND QUALIFIED GREENHOUSE GAS REDUCTION STRATEGY

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Prepared by:

PMC™

500 12th Street Oakland, Suite 250

Oakland, CA 94607

www.pmcworld.com

Supported by funding from:

Santa Clara Valley Transportation Authority, Community Design & Transportation Program

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

TABLE OF CONTENTS

LIST OF FIGURES

ABBREVIATIONS

Acronym	Term
AB	Assembly Bill
ABAG	Association of Bay Area Governments
BAAQMD	Bay Area Air Quality Management District
BAU	business-as-usual
BGR	Milpitas Green Building Regulations
BMP	Bikeways Master Plan
C&D	construction and demolition waste
CALGreen	California Green Building Standards
CAP	Climate Action Plan
CARB	California Air Resources Board
CBTP	Community Based Transportation Plan
CCR	Title 24 of the California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	methane
CO_2	carbon dioxide
CSI	California Solar Initiative
EDP	Milpitas Economic Development Plan 2005
EIR	environmental impact report
GBR	Milpitas Green Building Regulations
GHG	greenhouse gas
HE	General Plan Housing Element
HERS	Home Energy Rating System
kW	kilowatts
kWh	kilowatt-hours
LCFS	Low Carbon Fuel Standard
LEED	Leadership in Energy Efficiency and Design

ABBREVIATIONS

Acronym	Term
LUE	General Plan Land Use Element
MPO	Metropolitan Planning Organization
MSP	Midtown Specific Plan
$MTCO_2e$	metric tons of carbon dioxide equivalent
MTFM	Milpitas Travel Forecasting Model
N_2O	nitrous oxide
OSECE	General Plan Open Space & Environmental Conservation Element
PG&E	Pacific Gas and Electric
Plant	San Jose/Santa Clara Water Pollution Control Plant
PPA	Power Purchase Agreement
RDA	Amended and Restated Redevelopment Plan for Project Area No. 1
RIP	2005–2010 Redevelopment Implementation Plan: Mid-Cycle Update
RPS	Renewables Portfolio Standard
SB	Senate Bill
SCS	Sustainable Communities Strategy
SFBAAB	San Francisco Bay Area Air Basin
SV-REP	Silicon Valley Collaborative Renewable Energy Procurement
TASP	Transit Area Specific Plan
TDM	Transportation Demand Management
TOD	transit-oriented development
VMT	vehicle miles traveled
VTA	Santa Clara Valley Transit Authority
ZEV	zero-emissions vehicle

1. INTRODUCTION

PURPOSE AND SCOPE

This Climate Action Plan (CAP) is designed to streamline environmental review of future development projects in the City of Milpitas consistent with the California Environmental Quality Act (CEQA) Guidelines Section 15183.5(b) and the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines. The CAP identifies a strategy, reduction measures, and implementation strategies the City will use to achieve the State-recommended greenhouse gas (GHG) emissions reduction target of 15% below 2005 emissions levels by 2020.

The City has a long-standing commitment to achieving environmental stewardship. The CAP allows City decision-makers and the broader community to understand the sources and magnitude of local GHG emissions, establish goals to reduce GHG emissions, and prioritize steps to achieve emissions reduction targets. The CAP establishes goals, measures, and actions in the energy, water, transportation, solid waste, and off-road equipment sectors. It also establishes implementation programs and a framework to monitor and report progress.

CALIFORNIA LEGISLATIVE FRAMEWORK

The State of California has addressed energy and climate issues for nearly 40 years, and recent legislation is a driving force behind the City's CAP. A summary of recent state legislation by topic is provided in **Figure 1-1**.

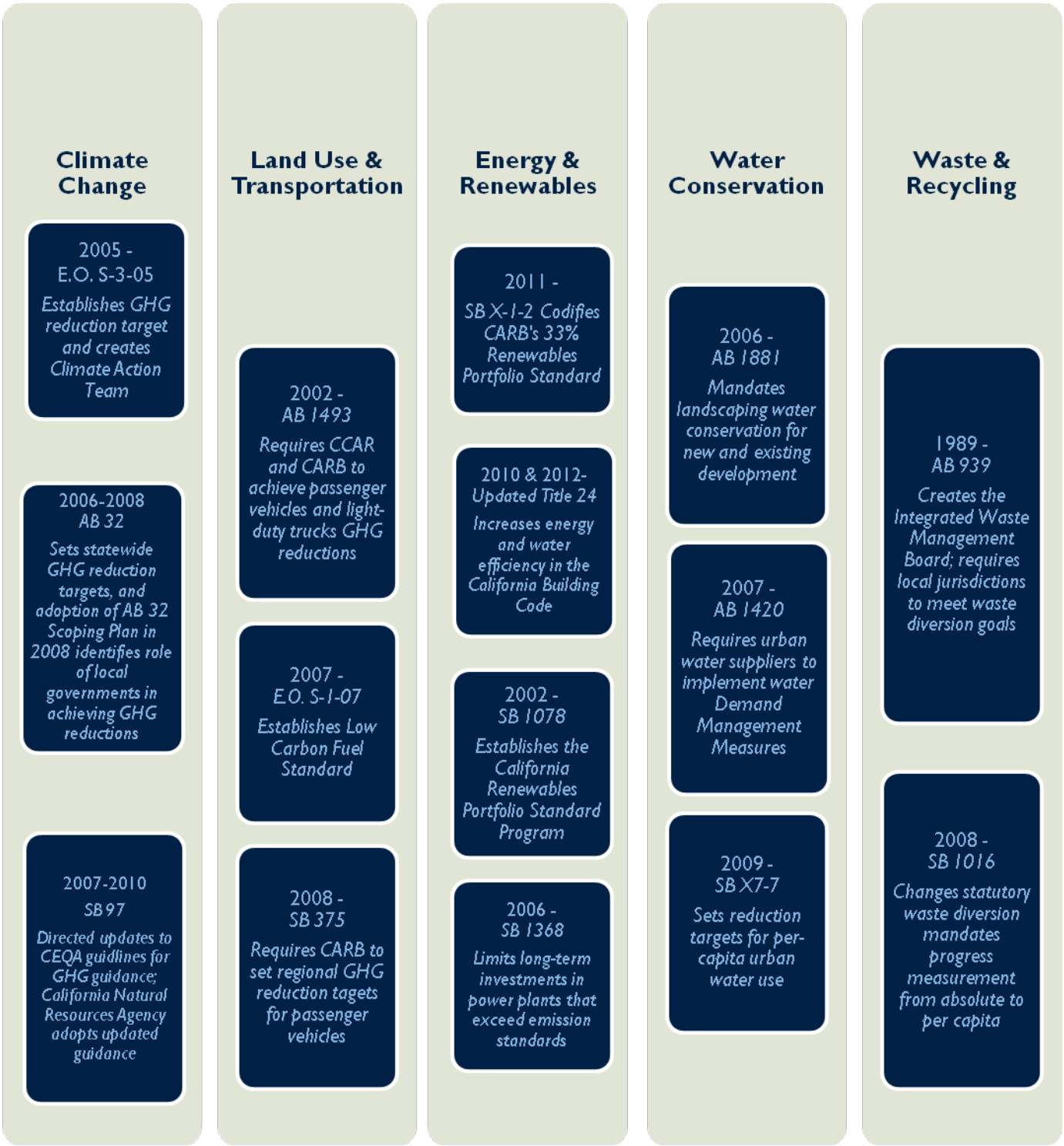
PLANNING PROCESS

The City used a highly collaborative process to develop the CAP. The City held a joint community workshop and Planning Commission work session on August 24, 2011, to identify key opportunities for the CAP. At the workshop, the City introduced the CAP to the community, discussed Milpitas's current sustainability initiatives, and identified sustainability priorities. The City also collected input on potential CAP measures and actions. The City and the consultant presented technical information, and reviewed and discussed a series of posters summarizing existing sustainability policies and programs in Milpitas. Workshop participants shared their vision for a more sustainable Milpitas and the challenges and strategies for achieving that vision. Key priorities identified by participants included the need for innovative renewable energy financing programs, expansion of recycled water use and tree planting in new development, and more energy efficient development. Participants also identified pedestrian-oriented development and more efficient land use patterns as important priorities.

Public Workshop, August 24, 2011

1. INTRODUCTION

Figure 1-1: California Regulatory Framework Summary



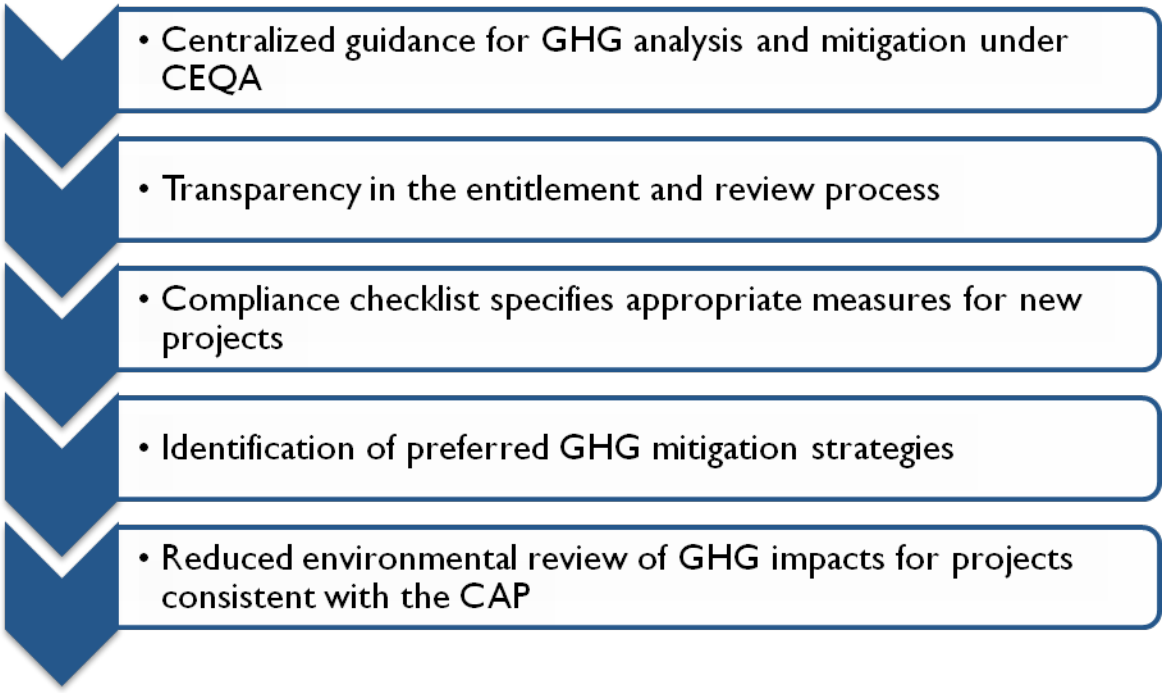
1. Introduction

Climate Action Plan Benefits

The CAP provides a policy framework for the City to reduce community-wide GHG emissions, while also simplifying the environmental review process for new development. Through the CAP, the City establishes predictability regarding mitigation strategies to address climate change. The City has completed environmental review of this CAP in compliance with CEQA through an Initial Study/Negative Declaration (IS/ND). Based on this analysis, the City may determine that CEQA streamlining benefits are available for projects deemed consistent with the CAP. This CAP allows the City to identify measures from this CAP that are appropriate for each project, and will serve as the City's tool to determine project compliance.

The CAP creates benefits for numerous community stakeholders, as summarized in **Figure 1-2**.

Figure 1-2: Climate Action Plan Benefits



How to Use This Plan

The CAP is the City's Qualified GHG Reduction Strategy. The City will use the CAP to achieve GHG emissions reductions in a manner consistent with Assembly Bill (AB) 32 within discretionary projects on a project-by-project basis and through ongoing planning activities and programs. The CAP identifies the City's expectations for new development, simplifying the environmental review process. This approach allows the CAP to serve as the City's one-stop shop for GHG analysis and mitigation pursuant to CEQA.

However, the City can only achieve the goals established in this CAP through community partnerships. As a result, the CAP is also a resource for the community, providing transparent expectations and information describing opportunities to reduce GHG emissions. Community members can use the CAP to identify programs and opportunities or to learn about local conditions and priorities.

RELATIONSHIP TO THE GENERAL PLAN AND CALIFORNIA ENVIRONMENTAL QUALITY ACT

The City has developed the CAP to serve as a strategic planning document. While achieving GHG reductions, the CAP also implements objectives of numerous local planning documents and statewide regulations. The CAP is a stand-alone policy and implementation item coordinated with the adopted General Plan. The City will adaptively manage the CAP over time, maintaining flexibility to update the CAP as opportunities shift and new resources emerge.

Coordination with the General Plan

The Milpitas General Plan identifies energy efficiency, waste reduction, and efficient land use as priorities for the City. Numerous General Plan policies and recommendations in other planning documents would reduce GHG emissions. In turn, CAP measures, policies, and actions to reduce community-wide GHGs are aligned with General Plan goals and policies.

Related Planning Documents

Transit Area Specific Plan
Adopted June 2008

Midtown Specific Plan
Amended October 2008

Bikeways Master Plan
Adopted June 2009

Trails Master Plan
Adopted June 1997

The CAP also supports Milpitas's specific and master plans. Amendments to the General Plan in 2013 prioritize the residential development of the Midtown and Transit Area Specific Plan, presenting the City's policy to not consider the conversion to residential uses of other areas until achieving 80% buildout of the Midtown and Transit Area Specific Plans (see Implementing Policy 2.a-I-2 of the General Plan). Through implementation of these plans, the City has already made significant progress to reduce future GHG emissions. The beneficial effects of these efforts are presented in both the City's emissions growth forecast in **Chapter 2** and in the existing measures section of **Chapter 4**.

Role of the Climate Action Plan in CEQA Implementation

Consistent with the State CEQA Guidelines, lead agencies may use adopted GHG reduction plans to assess the cumulative impacts of discretionary projects on climate change. In addition, the guidelines provide a mechanism to streamline development review of future projects.

Specifically, lead agencies may use adopted plans consistent with State CEQA Guidelines Section 15183.5 to analyze and mitigate the significant effects of greenhouse gases under CEQA at a programmatic level by adopting a plan for the reduction of GHG emissions. Later, as individual projects are proposed, project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review in their cumulative impacts analysis. Project-specific environmental documents prepared for projects consistent with the General Plan and the CAP may rely on the programmatic analysis of greenhouse gases contained in the CAP.

A project-specific environmental document that relies on this CAP for its cumulative impacts analysis must identify specific CAP measures applicable to the project and demonstrate the project's incorporation of the measures. Project applicants and City staff will identify specific measures applicable

to each project during project review. If applicable measures are not otherwise binding and enforceable, they must be incorporated as mitigation measures for the project. If substantial evidence indicates that the GHG emissions of a proposed project may be cumulatively considerable, notwithstanding the project's compliance with specific measures in this CAP, an environmental impact report (EIR) must be prepared for the project.

RELATIONSHIP TO BAY AREA AIR QUALITY MANAGEMENT DISTRICT CEQA AIR QUALITY GUIDELINES

The BAAQMD has direct and indirect regulatory authority over sources of air pollution in the San Francisco Bay Area Air Basin (SFBAAB), of which Milpitas is a part. As described in Section 4 of the BAAQMD Air Quality CEQA Guidelines, a lead agency may prepare a Qualified GHG Reduction Strategy that is consistent with Assembly Bill (AB) 32 goals. The BAAQMD encourages such planning efforts and recognizes that careful early planning by local agencies is invaluable to achieving the state's GHG reduction goals. If a project is consistent with an adopted Qualified GHG Reduction Strategy that addresses the project's GHG emissions, it can be presumed that the project will not have significant greenhouse gas emissions under CEQA.

Milpitas's CAP and accompanying environmental documentation meet the standards of a Qualified GHG Reduction Plan (which parallel and elaborate upon criteria established in State CEQA Guidelines Section 15183.5(b)(1)), as presented in the chapters referenced below.

A. Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area (see **Chapter 2**).

B. Establish a level, based on substantial evidence, below which the contribution of GHG emissions from activities covered by the plan would not be cumulatively considerable (see **Chapter 3**).

C. Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area (see **Chapter 2**).

D. Specify measures or a group of measures, including performance standards that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level (see **Chapter 4**).

E. Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specific levels (see **Chapter 5** and **Chapter 6**).

F. Adopt the GHG Reduction Strategy in a public process following environmental review (see City Council resolution in **Appendix D**).

2. Inventorying and Forecasting Greenhouse Gas Emissions

This chapter presents quantified GHG emissions for existing and future activities within the city pursuant to Sections 15183.5(b)(1)(A) and 15183.5(b)(1)(C) of the State CEQA Guidelines and Sections 1 and 2 of the BAAQMD GHG Plan Level Quantification Guidance. For purposes of the CAP, this chapter assesses GHG emissions for the calendar years 2005 and 2020.

Inventory Purpose and Background

A GHG emissions inventory (Inventory) lays the groundwork for the entire CAP planning process. This Inventory catalogues GHG emissions for 2005 and projects emissions levels for 2020. To comply with state guidance, the CAP identifies an emissions reduction target for the forecast year (see **Chapter 3**). The difference between the emissions projection and the reduction target represents the necessary reduction in the amount of GHG emissions and sets the focus for the reduction measures presented in **Chapter 4**. Additional information on the Inventory is provided in **Appendix A**.

Emissions Sources

The Inventory includes all major sources of GHGs caused by activities in the Milpitas community and is consistent with methodologies recommended by the California Air Resources Board (CARB), ICLEI-Local Governments for Sustainability, and the BAAQMD. The Inventory analyzes the following emissions sources:

- **Transportation** – vehicle miles traveled (VMT) to and/or from the city in 2005
- **Energy** – electricity and natural gas used in the built environment in 2005
- **Stationary Sources** – direct emissions from the Newby Island Resource Recovery Park; stationary sources permitted by the BAAQMD
- **Solid Waste** – methane emissions from community waste sent to landfills in 2005
- **Off-road Equipment** – emissions from construction and from lawn and garden equipment/vehicles
- **Water and Wastewater** – energy required to extract, filter, move, and treat water consumed and/or treated in 2005
- **Light Rail** – electricity used by the Santa Clara Valley Transit Authority for commuters utilizing Milpitas light rail stops
- **Direct Wastewater** – Milpitas's share of fugitive emissions from the San Jose/Santa Clara Water Pollution Control Plant

2. Inventorying and Forecasting Greenhouse Gas Emissions

2005 Baseline Inventory

In 2005, the Milpitas community emitted approximately 744,150 $MTCO_2e$. **Table 2-1** reports these emissions by sector and ranks the sectors from highest to lowest.

Table 2-1: Baseline Greenhouse Gas Emissions by Sector

	2005 $MTCO_2e$	Percentage of Total
Transportation	320,990	43%
Nonresidential Energy	183,800	25%
Stationary Sources	101,480	14%
Residential Energy	64,230	9%
Solid Waste	54,410	7%
Off-Road Equipment	15,140	2%
Water and Wastewater	2,410	<1%
Light Rail	1,070	<1%
Direct Wastewater	620	<1%
Total*	**744,150**	**100%**

** Due to rounding, the total may not equal the sum of component parts.*

Table 2-1 reports stationary source emissions, which include those from the Newby Island Resource Recovery Park, and direct wastewater emissions. Stationary sources are fixed emitters of air pollutants, such as power plants, stationary generators, petrochemical plants, and other heavy industrial sources. Since stationary source emissions are influenced by market forces beyond the City's local influence and are best regulated by the BAAQMD or through federal and state programs, they are reported in this Inventory for informational purposes only. Similarly, the City has limited control over the operation of the Newby Island Resource Recovery Park and is unable to directly affect the emissions generated from previously generated waste. The baseline inventory is intended to guide future local policy decisions that relate to emissions within the City's influence; therefore, stationary sources, and direct landfill emissions are excluded from all further discussions in this Inventory.

Carbon dioxide equivalent (CO_2e):

Represents the three main GHGs (carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O)) in comparable terms, since all three gases trap heat in the atmosphere differently.

The baseline inventory guides future local policy decisions that relate to emissions within the City's influence; therefore, stationary sources, and direct landfill emissions are excluded from further discussion. **Table 2-2** and **Figure 2-1** reflect Milpitas's jurisdictional baseline of 642,670 $MTCO_2e$. Transportation was the largest sector (320,990 $MTCO_2e$), contributing about 50% of total emissions. Energy use was the second largest sector (248,030 $MTCO_2e$, 39%). Of these emissions, nonresidential energy use (183,800 $MTCO_2e$, 29%) comprised a greater percentage than residential energy use (64,230 $MTCO_2e$, 10%). The remaining 11% of emissions came

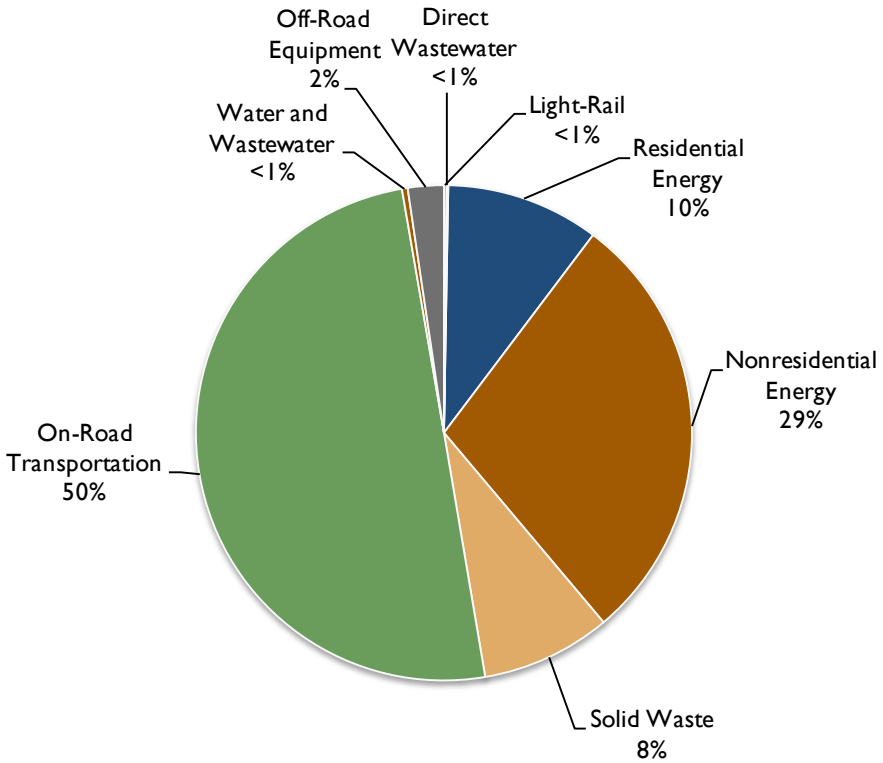
from solid waste (54,410 $MTCO_2e$, 8%), water and wastewater (2,410 $MTCO_2e$, less than 1%), light rail (1,070 $MTCO_2e$, less than 1%), and direct wastewater emissions (620 $MTCO_2e$).

Table 2-2: Jurisdictional Baseline Greenhouse Gas Emissions by Sector

	2005 $MTCO_2e$	Percentage of Total
Transportation	320,990	50%
Nonresidential Energy	183,800	29%
Residential Energy	64,230	10%
Solid Waste	54,410	8%
Off-Road Equipment	15,140	2%
Water and Wastewater	2,410	<1%
Light Rail	1,070	<1%
Direct Wastewater	620	<1%
Total	642,670	100%

** Due to rounding, the total may not equal the sum of component parts.*

Figure 2-1: Jurisdictional Baseline Emissions by Sector



2. Inventorying and Forecasting Greenhouse Gas Emissions

Greenhouse Gas Emissions Forecast

A GHG emissions forecast is an estimate of future GHG emissions based on anticipated changes in population, jobs, households, commercial activity, and driving patterns in the community. This forecast of community-wide emissions addresses 2020, the AB 32 horizon year. Two versions of the forecast are presented below—a business-as-usual (BAU) and a State-adjusted BAU (adjusted BAU) scenario.

Business-as-Usual Forecast

The BAU forecast estimates how emissions would grow over time without influence from state, regional, and local GHG reduction efforts. This BAU forecast assumes 2005 energy consumption and energy efficiency rates and incorporates demographic information from the Association of Bay Area Governments (ABAG) 2009 regional population, household, and employment forecasts.

Increases in VMT in 2020 are derived from the Milpitas Travel Forecasting Model (MTFM), a transportation planning tool developed by Hexagon Transportation Consultants, Inc. The MTFM evaluates the traffic impacts anticipated to occur in the future as a result of additional planned development in Milpitas, considering the effects of the City's planning efforts, including policies and programs found in the Transit Area Specific Plan (adopted June 2008) and the Midtown Specific Plan (adopted March 2002, amended October 2008). Significant VMT reductions from future BART ridership based on extending the BART system through Milpitas to San Jose are integrated within the MTFM. In order to highlight the many local benefits of this new ridership, the VMT reductions associated with BART have been removed from the model and are included in CAP Measure 6.1. For further explanation of this modification, see **Appendix B**.

As shown in **Table 2-3** and **Figure 2-2**, without state or local action, emissions would grow 18% from 2005 to 2020. Energy emissions would grow the most among the sectors (39%). The next largest sector would be light rail, followed by transportation, solid waste, and water and wastewater, all of which are expected to increase 20%. Many of these increases result from planned residential development in coming years.

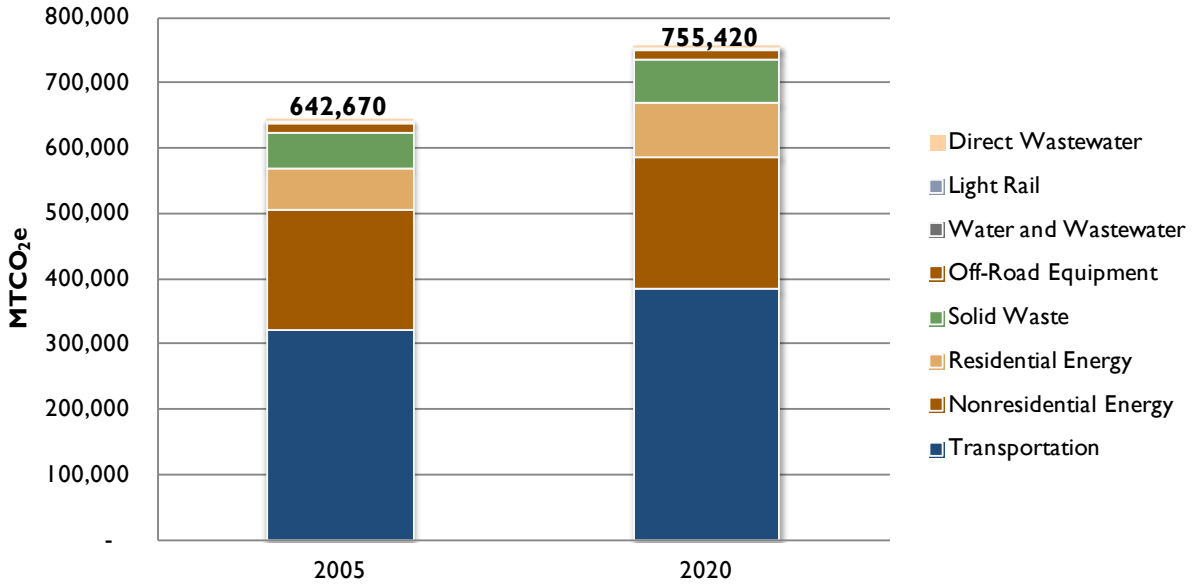
Table 2-3: Business-as-Usual Emissions Forecast, 2020

	2005 $MTCO_2e$	2020 $MTCO_2e$	Percentage Change
Transportation	320,990	383,630	20%
Nonresidential Energy	183,800	203,000	10%
Residential Energy	64,230	83,090	29%
Solid Waste	54,410	65,290	20%
Off-Road Equipment	15,140	15,460	2%
Water and Wastewater	2,410	2,890	20%
Light Rail	1,070	1,320	23%
Direct Wastewater	620	740	20%
Total*	642,670	755,420	18%

** Due to rounding, the total may not equal the sum of component parts.*

2. Inventorying and Forecasting Greenhouse Gas Emissions

Figure 2-2: Business-as-Usual Emissions Forecast, 2020



Adjusted Business-as-Usual Forecast

The adjusted business-as-usual (adjusted BAU) forecast estimates how state renewable energy, building energy efficiency, low-GHG transportation fuels, and vehicle fuel efficiency actions will reduce emissions in Milpitas. This adjustment creates a more realistic estimate of the city's future emissions since the reductions will require little to no effort on behalf of the City, yet count toward a locally established GHG emissions reduction target. A general overview of these state reduction programs is presented below. A more in-depth discussion is provided in **Appendix B**.

California Renewables Portfolio Standard (RPS): Senate Bill (SB) 1078 (signed September 2002) and SBX 1-2 (signed April 2011) mandate that 33% of electricity delivered in California be generated by renewable sources like solar, wind, and geothermal by 2020.

Pavley Vehicle Standards: AB 1493 (Pavley, 2002) requires new passenger vehicles to reduce tailpipe GHGs by about 18% by 2020 through improvements in fuel efficiency.

Low Carbon Fuel Standard (LCFS): Executive Order S-01-07 (2007) established the LCFS to reduce the GHG intensity of transportation fuels 10% by 2020. According to the May 2011 Updated BAAQMD CEQA Air Quality Guidelines, the LCFS is likely to reduce emissions locally by only 7.2%, due to the exclusion of up-stream emissions and reductions. LCFS reductions apply to both on-road transportation and off-road equipment.

Title 24, Energy Efficiency Standards: Title 24 of the California Code of Regulations (CCR) mandates how new homes and businesses are built in California. The adjusted BAU forecast accounts for improvements in energy efficiency and green design in new buildings in Milpitas associated with baseline implementation of the 2010 California Green Building Standards Code (CALGreen).

California Solar Initiative (CSI): The CSI provides cash rebates for residents and businesses installing electric solar panel systems. The program is estimated to deplete its funding reserves in 2016.

Medium- and Heavy-Duty Vehicle Efficiency Standards: Fuel efficiency improvements are also anticipated for medium- and heavy-duty vehicles that are not covered by the Pavley standards. Guidance for quantifying these reductions comes from the December 2009 BAAQMD Proposed Thresholds of Significance.

Impact of State Reduction Programs

As shown in **Table 2-4**, implementation of the above-listed state programs would reduce BAU emissions by 128,980 $MTCO_2e$ in 2020. Most of these reductions come from the Pavley standards and cleaner Pacific Gas and Electric (PG&E) energy pursuant to the RPS. Compared to the BAU scenario, 2020 emissions with state reduction measures would be 3% below baseline 2005 levels, rather than 18% above. **Appendix B** provides a detailed look at the how each state GHG reduction program affects the individual inventory sectors.

Table 2-4: Summary of Adjusted Business-as-Usual Emissions Forecast

State Reduction Summary		2020 $MTCO_2e$ Reduction
BAU Emissions Forecast		755,420
State Reductions	Pavley Vehicle Standards	-63,570
	Low Carbon Fuel Standard	-28,730
	Medium/Heavy-Duty Vehicle Efficiency	-840
	Renewables Portfolio Standard	-27,360
	California Solar Initiative	-360
	Title 24	-7,830
Total State Reductions		-128,690
Adjusted BAU Emissions Forecast		626,620

3. Identifying a Greenhouse Gas Reduction Target

This chapter establishes a GHG reduction target for the City of Milpitas, consistent with Section 15183.5(b) of the State CEQA Guidelines and Section 4.3(B) of the BAAQMD CEQA Air Quality Guidelines.

Purpose of the Greenhouse Gas Reduction Target

The GHG reduction target is the overarching goal of the CAP and an objective way to measure the success of the Qualified GHG Reduction Strategy. The purpose of the reduction target is to identify a level of community GHG emissions below which emissions would not be cumulatively considerable under the State and BAAQMD CEQA Guidelines.

Guidance for Local Targets

The State CEQA Guidelines provide general direction that a CAP or similar GHG reduction document should set an emissions reduction target. Lead agencies are responsible for setting targets for future years. For jurisdictions in the Bay Area, the June 2010 BAAQMD CEQA Air Quality Guidelines identify several GHG emissions reduction targets based on consistency with AB 32 that could be used by Bay Area jurisdictions.[1] The BAAQMD presents these targets as thresholds, which are quantitative targets used in the environmental review process to determine if a plan's or a project's GHG emissions are significant. Based on technical assessment for conditions in the Bay Area, the BAAQMD identified three thresholds for plan-level GHG analysis:

- Reduce emissions to 1990 levels by 2020;
- Reduce emissions 15% below baseline (2008 or earlier) emission levels by 2020; or
- Meet the plan efficiency threshold of 6.6 $MTCO_2e$ per service population.[2] Additionally, the BAAQMD CEQA Guidelines identify an efficiency threshold for land use projects of 4.6 $MTCO_2e$ per service population

These guidelines provide certainty for lead agencies working to achieve consistency with AB 32, the Global Warming Solutions Act of 2006. The AB 32 Climate Change Scoping Plan identifies a State-recommended reduction target for local governments to achieve 1990 emissions levels by 2020, which the Scoping Plan equates to an approximate 15% reduction below existing emissions. Nothing in the

[1] The BAAQMD June 2010 adopted thresholds of significance were challenged in a lawsuit. On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the district had failed to comply with CEQA when it adopted the thresholds and ordered the BAAQMD to examine whether the thresholds would have a significant impact on the environment under CEQA before recommending their use. The court did not determine whether the thresholds are or are not based on substantial evidence and thus valid on the merits. The court issued a writ of mandate ordering the district to set aside the thresholds and cease dissemination of them until the district had complied with CEQA. As the court did not determine whether the thresholds are or are not based on substantial evidence and thus valid on the merits, the City can continue to rely on the substantial evidence based on data and analysis relative to AB 32 that underlies the June 2010 BAAQMD thresholds in making an independent determination of significance of plan-level GHG impacts pursuant to State CEQA Guidelines Section 15064.7(c).

[2] Service population equals the sum of residents and employees within the community.

3. Identifying a Greenhouse Gas Reduction Target

State CEQA Guidelines, the BAAQMD Air Quality Guidelines, or the AB 32 Scoping Plan identifies 15% as a minimum or fair-share level of reductions for local agencies.

Milpitas Target Greenhouse Gas Emissions Level

This CAP establishes a local GHG reduction target of 15% below baseline 2005 emissions levels by 2020. Both the AB 32 Climate Change Scoping Plan and the June 2010 BAAQMD CEQA Air Quality Guidelines provide substantial evidence supporting use of this target by the City of Milpitas.

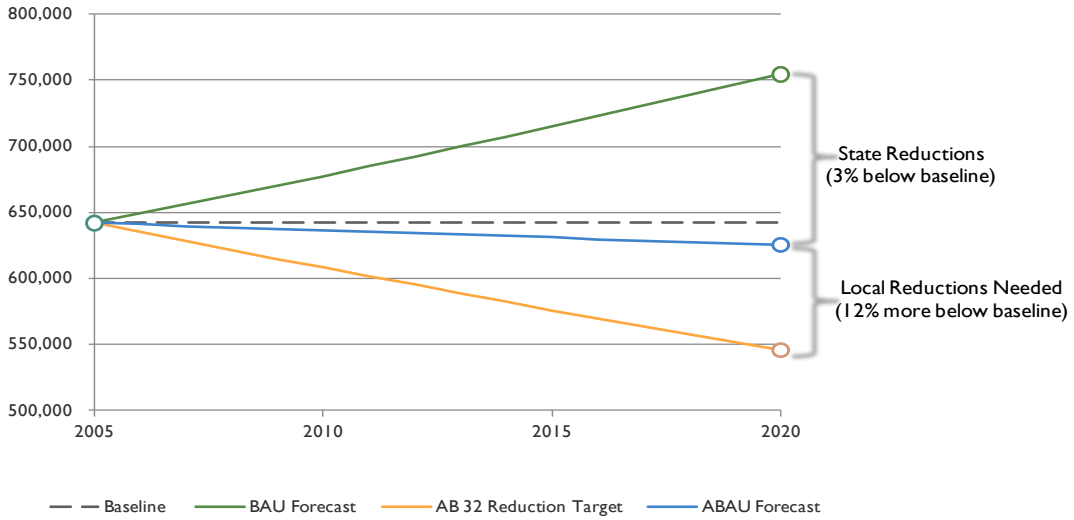
This target serves as the City's cumulative level of significance for community-wide GHG emissions through 2020. The reduction target equates to a 93,940 $MTCO_2e$ reduction in community-wide GHGs from baseline 2005 levels by 2020. It will require a reduction of 79,990 $MTCO_2e$ from 2020 adjusted BAU forecast levels.

The CAP provides a road map to achieve this target in the context of planned growth and development. The City will close the gap between forecast emissions and the reduction target by implementing measures and actions identified in **Chapter 4**. **Table 3-1** and **Figure 3-1** identify the 3% reduction from baseline emissions anticipated with implementation of state policies and programs, and the 12% gap that local GHG reduction measures will address to achieve the 15% reduction target.

Table 3-1: Greenhouse Gas Emissions Target and Necessary Local Reduction

	2020 $MTCO_2e$
Reduction Target (15% below baseline)	546,270
Adjusted Business-as-Usual Forecast	626,260
Local Reduction Needed to Reach Target	-79,990

Figure 3-1: Greenhouse Gas Emissions Target and Necessary Local Reduction



4. Reducing Greenhouse Gas Emissions

This chapter presents a GHG reduction strategy for activities within Milpitas consistent with Section 15183.5(b)(1)(D) of the State CEQA Guidelines and Section 2.1 of the BAAQMD GHG Plan Level Guidance. The measures and actions presented in this chapter include specified performance standards. With anticipated growth, development, and implementation of these performance standards on a project-by-project basis, the City will collectively achieve the GHG reduction target of 15% below 2005 emissions by 2020. Documentation and methods provided in **Appendix B** provide substantial evidence supporting quantification of these emissions reductions.

Greenhouse Gas Reduction Measures

Two categories of GHG reduction policies are presented in this CAP: (1) existing activities and (2) CAP measures and actions. Existing activities include projects or programs enacted since the 2005 baseline year, which will result in future GHG reductions and which existed before the creation of this CAP in 2013. Such projects include municipal solar and tree planting efforts, as well as existing requirements for energy efficiency in new development. CAP measures and actions were created for this document through a collaborative planning process. The City will implement these measures and actions through new and existing programs, standards for new development, and programs that improve the efficiency of existing development.

Related Terms

To ensure successful implementation and evaluation, each GHG reduction measure included in this CAP identifies the following, in either the measure description or the associated implementation matrix (**Chapter 6**).

- **GHG Reductions ($MTCO_2e$)** are estimated and reported for 2020, and evaluated against the adjusted BAU forecast and 2020 reduction target.
- **Responsible Department** identifies the City department responsible for implementing each measure, including securing funding, reporting on annual progress, and coordinating with supporting agencies and community partners.
- **Performance Metrics** describing the percentage participation rate and the number of participants emphasize efforts necessary to implement each measure.
- **Regional Partners** can assist the City to implement the measures and actions necessary to achieve each reduction.
- **Additional Resources** describe the nuances of each measure and action using case studies, example ordinances, and other similar information.
- **Co-Benefits** identify additional advantages of implementing a measure beyond reducing GHG emissions. For example, the public health benefits of a bicycle outreach and education program cannot be quantified but can be represented as a co-benefit. In this document, co-benefits are defined as follows:

4. Reducing Greenhouse Gas Emissions

Summary of Reductions

Table 4-1 summarizes anticipated $MTCO_2e$ reductions in 2020 from existing activities and CAP measures, illustrating how statewide policies in the adjusted BAU forecast and these local actions will reduce GHGs by 16.2% (87,450 $MTCO_2e$) from baseline 2005 emission levels, exceeding the 15% reduction target by 2020.

Table 4-1: Summary of Total Greenhouse Gas Reductions and Progress Toward Target

	2020 $MTCO_2e$
Local Reductions Needed to Achieve 15% Target	-79,990
Reductions Achieved (Existing + CAP Measures)	-87,450
Percentage Below Baseline	-16.2%

Table 4-2 summarizes how the existing measures, each CAP goal topic, and individual reduction measures contribute to the 87,450 $MTCO_2e$ of GHG reductions in 2020. Energy measures are the largest contributor to GHG reductions, representing nearly half (40,580 $MTCO_2e$, 46%) of the anticipated reductions. Transportation and land use measures comprise 23% (20,170 $MTCO_2e$) of the anticipated reductions. Existing measures are the third largest reduction category, comprising about 15% (13,240 $MTCO_2e$) of the anticipated reductions. Solid waste measures (9,200 $MTCO_2e$, 11%) and off-road equipment measures (4,260, 5%) make up the remaining reductions.

4. Reducing Greenhouse Gas Emissions

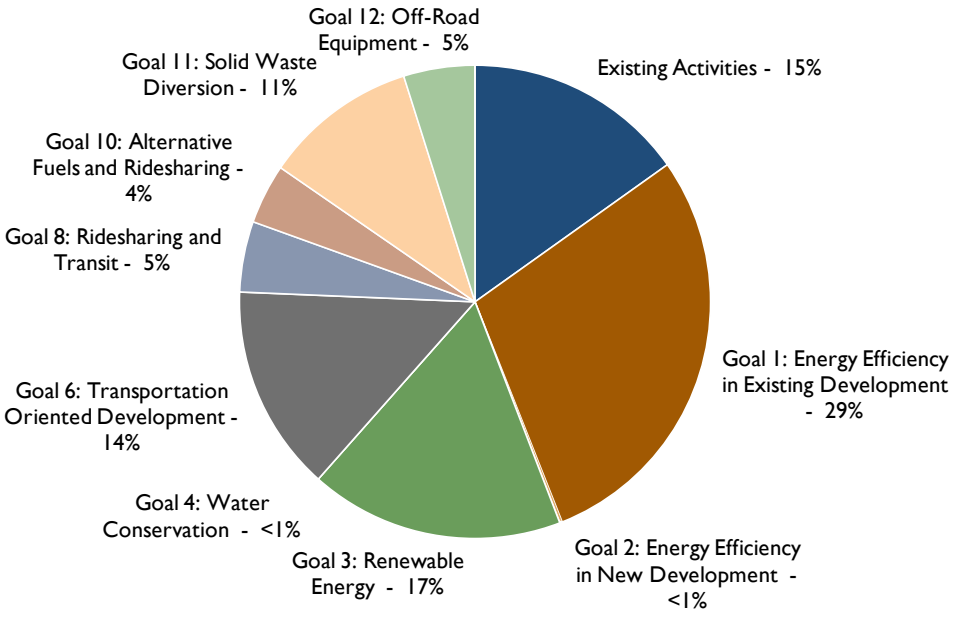
Table 4-2: Greenhouse Gas Reductions by Goal Topic

Topic	Goals/Category	2020 $MTCO_2e$ by Goal	2020 $MTCO_2e$ by Goal Topic
Existing Activities	Existing Activities	-13,240	-13,240
Energy	Goal 1: Energy Efficiency in Existing Development	-25,240	-40,580
	Goal 2: Energy Efficiency in New Development	-150	
	Goal 3: Renewable Energy	-15,200	
Water	Goal 4: Water Conservation	<-10	<-10
Transportation & Land Use	Goal 5: Mixed-Use Development	Supportive	-20,170
	Goal 6: Transportation-Oriented Development	-12,350	
	Goal 7: Bicycle- and Pedestrian-Oriented Development	Supportive	
	Goal 8: Ridesharing and Transit	-4,230	
	Goal 9: Parking	Supportive	
	Goal 10: Alternative Fuels and Ridesharing	-3,590	
Solid Waste	Goal 11: Solid Waste Diversion	-9,200	-9,200
Off-Road Equipment	Goal 12: Off-Road Equipment	-4,260	-4,260
Total Reductions			-87,450

4. Reducing Greenhouse Gas Emissions

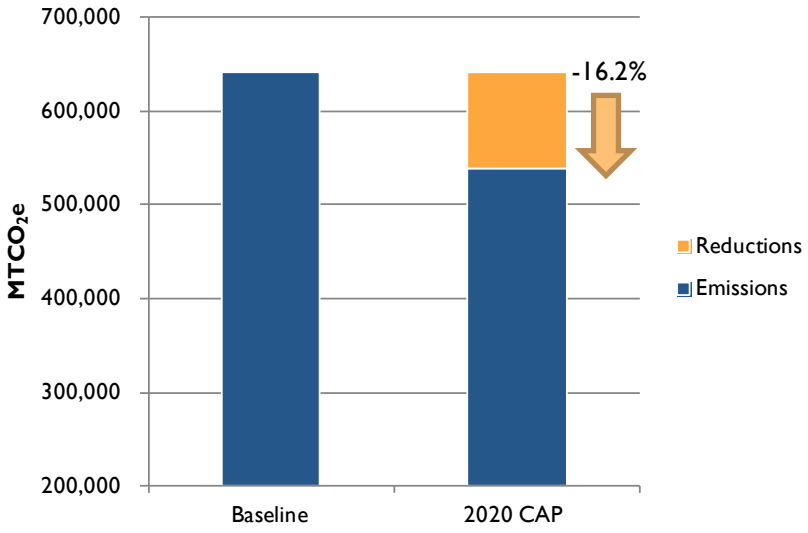
Figure 4-1 summarizes quantified GHG reductions by goal. This presentation enables the City to focus implementation on those goals and measures that will have the greatest effect on Milpitas's future emissions.

Figure 4-1: Greenhouse Gas Reductions by Goal



As shown in **Figure 4-2**, with implementation of the CAP and anticipated growth in Milpitas, community-wide GHG emissions would decrease by 16.5% from baseline 2005 levels in 2020.

Figure 4-2: Total Reductions to Reach 2020 Reduction Target



4. Reducing Greenhouse Gas Emissions

Activities Since Baseline

The City of Milpitas has a proven history of developing and implementing GHG reduction activities. Emissions reductions from these activities will take place regardless of the development of the CAP. They are included in this plan because the City has not previously quantified them, and they count toward achievement of the GHG emissions reduction target. These measures also highlight how proposed CAP measures build upon existing efforts.

The CAP accounts for GHG reductions since baseline year 2005 attributable to the following programs:

- **Waste reduction.** The CAP quantifies efforts of regional and local recycling and composting programs used by Milpitas residents and businesses since 2005.

- **New multi-family development.** According to adopted General Plan assumptions contained within the MTFM, 80% of future residential development in Milpitas will be multi-family. Multi-family development typically uses less energy, particularly heating energy.

- **Bikeways Master Plan.** GHG reductions in the CAP follow the tiered implementation schedule found in the Milpitas Bikeways Master Plan, assuming full implementation of all Tier I and Tier II measures within the Bikeways Master Plan by 2020. The reductions are associated with commuter mode shifts from personal vehicles to bicycles.

- **Municipal solar power purchase agreement.** The City entered into a solar power purchase agreement (PPA) with EcoPlexus Solar Solutions, supporting total generation of 1,227 kilowatts (kW). The City is currently installing three solar electric systems at the sewer pumping station, the Gibraltar pumping station, and the Milpitas Sports Center.

- **Water conservation.** According to the City's 2010 Urban Water Management Plan, homes and businesses in the community will reduce water use 20% from 2005 levels by 2020 to comply with state water conservation requirements. About half of the associated energy use reductions are attributed to the City's existing activities since these reductions took place between the baseline year and the publication of this CAP.

- **Recycled water.** The City has achieved energy reductions through increased use of recycled water throughout the community. Using recycled water for landscaping reduces the amount of potable drinking water used for this purpose.

- **Green building program.** The City's community green building program utilizes the Build It Green and Leadership in Energy Efficiency and Design (LEED) programs. Energy reductions achieved from the existing green building program are not calculated because the information needed to quantify the program is unavailable.

Table 4-3 summarizes anticipated GHG reductions in 2020 from these existing efforts. Nearly two-thirds of these reductions are attributed to the City's waste reduction efforts (8,740 $MTCO_2e$), and more than a quarter result from the large amount of planned multi-family development (3,440 $MTCO_2e$). The Bikeways Master Plan is expected to reduce GHG emissions by 590 $MTCO_2e$, and the City's solar PPA will reduce emissions by 270 $MTCO_2e$ in 2020.

Table 4-3: Greenhouse Gas Reduction Summary for Existing Activities, 2020

	2020 $MTCO_2e$
Waste reduction	-8,740
New multi-family development	-3,440
Bikeways Master Plan	-590
Municipal solar power purchase agreement	-270
Water conservation	-190
Recycled water	-10
Total*	-13,240

** Due to rounding, the total may not equal the sum of component parts.*

Measures and Actions

The following section presents goals, measures, and actions for each of the following reduction topics: energy, water, transportation and land use, solid waste, and off-road equipment. Goals serve to guide reduction measures that outline specific and measurable actions. In turn, actions are specific steps the City must take in order to properly implement each reduction measure and achieve the goals. The relationship between goals, measures and actions is presented in **Figure 4-3**.

Figure 4-3: Goals, Measures, and Actions

Participation metrics are presented for quantified measures and represent both the number of participants and the percentage of the total or subtotal category presented. For example, Measure 1.1 has a participation metric of 6,030 homes built before 1980 (25%). In other words, to achieve the stated GHG reduction, 25% of homes built before 1980, or 6,030 homes, must participate in the listed actions over the life of the plan by 2020. For all nonresidential energy measures, it is assumed that there were 5,900 businesses in Milpitas in 2005.

4. Reducing Greenhouse Gas Emissions

Energy

Goal 1: Increase energy efficiency and conservation in the city's existing building stock.

Measure 1.1: Residential Energy Audits in Older Homes

Facilitate energy audits of 40% of the city's existing housing stock by 2015 and 60% by 2020 through City-supported incentives.

Actions

A. Relying on regional funds and utility-sponsored efforts, develop a local incentive audit program to identify representative housing types for building audits that can be used to recommend audits for other homes with similar characteristics.

B. Create a plan to prioritize older neighborhoods for audits that leverage regional and utility programs for affordable housing, allowing the City to maximize energy efficiency resources and rely on regional or state funding programs.

C. Pursue grant funding for energy audits.

D. Pursue regional collaboration and partnerships for grants or other funding opportunities.

E. Connect businesses and residents with voluntary programs that provide free or low-cost energy efficiency audits.

Measure 1.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -3,930

Participation Metrics: 6,030 existing homes built before 1,980 (25%)

Measure 1.2: Energy Upgrade California

Connect homeowners to financing options, such as Energy Upgrade California, for energy efficiency retrofits.

Actions

A. Continue City involvement in Energy Upgrade California.

B. Designate a City staff representative to track and promote energy efficiency opportunities.

C. Continue partnerships with Joint Venture Silicon Valley, nonprofits, and other jurisdictions to leverage knowledge and resources for retrofit opportunities.

D. Provide information to homeowners regarding financing opportunities for retrofits.

Measure 1.2: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -10,360

Participation Metrics: 3,260 (25%) existing single-family and 630 (15%) existing multi-family homes

Measure 1.3: Discretionary Project Review

Apply the City's Climate Action Plan Development Checklist (Appendix C) as part of the City's discretionary project review process.

Actions

A. Update the City's general residential and commercial project checklists to include provisions identified in **Appendix C** for use during plan review and building permit review of remodels.

B. Update the City's discretionary review guidance to encourage energy efficiency improvements in remodels and other projects exempt from the City's Green Building Code.

Measure 1.3: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

C. Work with utility providers to provide a packet of residential and nonresidential energy efficiency financing information during pre-application meetings and plan review.

D. Work with regional, real estate, building owner, and commercial developer organizations to encourage green mortgage financing that increases the resale value of property.

Measure 1.4: Energy Benchmarking

Encourage energy benchmarking in the existing residential and nonresidential building stock, building on regulatory benchmarking programs and existing green building standards to help close the energy efficiency information gap.

Actions

A. Leverage the efforts of regional partners, including the Bay Area Regional Energy Network (REN), to promote regional Energy Star Portfolio Manager and energy benchmarking training for City staff and for nonresidential building owners.

B. During the annual CAP progress report (as identified in **Chapter 6**), use reports from PG&E to summarize community trends and refine energy efficiency reduction measures.

C. Encourage participation in the voluntary Home Energy Rating System (HERS) ratings for homes.

D. Promote energy and green building labeling as a tool to prepare for retrofits.

Measure 1.4: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -8,260

Participation Metrics:

4,560 existing sold homes (50%) benchmarked

1,140 existing sold homes audited and retrofitted (25%)

2,960 existing sold/leased nonresidential buildings (50%) benchmarked

740 existing sold/leased nonresidential buildings (25%) audited and retrofitted

E. Work with homeowner and realtor groups to promote the benefits of home energy labeling as a tool to increase appreciation value.

Measure 1.5: Urban Cooling

Achieve urban cooling through voluntary and mandatory standards for new development and additions.

Actions

A. Amend the Zoning Code to create tree planting standards for new and renovated development, to require the planting of two trees in single-family development in the front, side, or rear yard as feasible, and to create lineal landscaping standards for commercial development that identify a minimum number of tree plantings based on lineal frontage length.

B. Support outreach and education describing benefits of cooling strategies, including promotion of the Cool California website and resources on the City website and at City Hall.

Measure 1.5: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -950

Participation Metrics:

890 remodeled homes and 2,920 new homes (100%) comply with tree planting standards (2 trees each)

450 existing homes (3%) participate in passive cooling outreach programs

220 remodeled homes (1%) install cool roofs and 730 new homes (25%) install passive solar

C. Encourage remodels to comply with CALGreen cool roof requirements by promoting available resources on the City website, through plan review, and at community events, as appropriate.

D. Continue to promote passive solar design (supports Housing Element Policy F-1.2).

E. Reduce heat gain from surface parking lots in new development for a minimum of 50% of the site's hardscape. Develop standards to provide shade from the existing tree canopy or from appropriately selected new trees that complement site characteristics and maximize drought tolerance. Where feasible, use open-grid pavement systems (at least 50% pervious, which would also satisfy the stormwater Low Impact Development requirement).

Measure 1.6: Smart Grid Integration

Phase in requirements for the use of smart-grid-integrated appliances and energy monitors in all new development by 2018 as such appliances become commercially available and economically feasible.

Actions

A. Adopt new development standards to encourage the integration of smart-grid appliances.

Measure 1.6: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -180

Participation Metrics:

840 (95%) new homes between 2018 and 2020

100 (95%) new businesses between 2018 and 2020

Measure 1.7: Appliance Upgrades

Use partnerships to promote appliance trade-in and upgrades.

Actions

A. Provide educational materials about energy-efficient appliances to the community, on the City website, and at City Hall, including publications produced by state and regional partners such as Energy Star and the California Energy Commission.

B. Promote the use of appliance rebates from PG&E and the Santa Clara Valley Water District as funding is available, including using PG&E's online portal for appliance rebates.

Measure 1.7: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -1,560

Participation Metrics:

3,260 existing single-family homes (25%)

1,960 existing multi-family homes (15%)

880 existing businesses (15%)

Measure 1.8: Online Energy Monitoring

Encourage participation in online energy monitoring programs as utilities develop and deploy online systems.

Actions

A. Encourage the use of smart-grid and Energy Star appliances.

B. Provide educational information on the use of smart-grid-integrated appliances through the City's website and the distribution of appliance information from PG&E.

Measure 1.8: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Goal 2: Implement innovative building standards to set the path toward zero net energy in new development.

Residential and nonresidential buildings in Milpitas depend on electricity and natural gas for lighting, heating, cooling, and running appliances. Energy efficiency is a key component of any strategy that seeks to reduce energy use and greenhouse gases. As Milpitas is a high-growth community expected to add 5,240 households and 4,970 jobs from 2005 to 2020, energy efficiency in new development will be an essential element of the City's plan to reach its GHG reduction target. The City of Milpitas adopted Green Building Regulations in June 2009, which apply to most new building construction projects. Depending on the size and end-use, projects are required to achieve either LEED certification, LEED silver, or Build It Green Rated status.

GOING BEYOND TITLE 24

Several programs exist that can help new and existing development go beyond minimum building standards. These include the City's Green Building Regulations (adopted in June 2009), CALGreen, LEED, Build It Green, and Energy Star-rated homes and businesses.

New development can benefit from new building standards in numerous ways, including lower building operation costs that can attract tenants, marketing potential of a more sustainable design, and benefits from streamlined environmental review. Various programs are available to help homes and businesses go beyond the savings prescribed in the California Building Code. New residential development can meet CALGreen, LEED, Build It Green, or Energy Star standards. New nonresidential buildings can meet CALGreen, LEED, and Energy Star building standards. The City can amend and modify existing Green Building Regulations for greater energy savings in new development.

Measure 2.1: Energy Efficiency in New Development

Encourage new development and remodels to exceed minimum building standards for energy efficiency and continue implementation of the adopted Green Building Ordinance.

Measure 2.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -150

Participation Metrics:

60 new single-family (10%) and 350 new multi-family homes (15%)

30 new average-size businesses (10%)

Actions

A. Incentivize new development to exceed minimum building standards through permit fee reductions.

B. Consider the development of an equipment lease-to-own program to offset the cost of energy-efficient equipment purchases.

C. Continue to require new multi-family buildings to complete a LEED or Green Point Rated checklist [Milpitas Municipal Code (MMC) II-20-3.01(a)].

D. New nonresidential construction between 25,000 and 49,999 gross square feet must still obtain LEED certification (with verification) (MMC II-20-3.01(b)). New nonresidential construction or renovations greater than or equal to 50,000 gross square feet must be verified as LEED silver (MMC II-20-3.01(c)). Construction or renovations of municipal buildings greater than or equal to 50,000 square feet must be LEED silver (MMC II-20-3.01(d)).

4. Reducing Greenhouse Gas Emissions

Goal 3: Maximize the provision of local energy needs from renewable energy use in new and existing uses.

The City's developed urban landscape and high-growth future provide diverse opportunities for use of renewable energy resources. The intent of this goal is to shift a portion of energy consumption away from traditional electricity and natural gas (i.e., fossil fuels) to renewable energy sources. Both natural gas and electricity can be offset by renewable sources that are profitable, yield cost savings to users, and spur local energy independence. Through this goal, the City will reduce GHG emissions from traditional electricity production and natural gas by promoting the production of local, on-site renewable energy for both residential and nonresidential uses. Through these measures, the City will continue to lead the region by example through its innovative use of alternative and renewable energy sources that save money. For all measures in Goal 3, the assumed average size of solar electric systems is 3.5 kilowatts (kW) for residential systems and 25 kW for nonresidential systems.

Measure 3.1: Renewable Energy in New Development

Adopt new standards to require renewable energy in new development and encourage renewable energy facilities through the discretionary process.

Actions

A. Encourage through the discretionary process all new nonresidential development to meet energy needs with renewable energy sources.

B. Require all new single-family and multi-family residential development to comply with the Homebuyer Solar Option, either to provide pre-wiring for photovoltaic roof systems or to provide an in-lieu fee for off-site solar facilities, building on current standards of the Transit Area Specific Plan.

Measure 3.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -1,360

Participation Metrics: 200 new nonresidential facilities (5%) and 1,210 new residential homes (60%) pre-wired for solar installation

C. Promote voluntary solar installations by providing solar installation resources at City Hall and online. Advertise resources such as the CEC's Go Solar California website, and work with PG&E's Pacific Energy Center to offer classes or seminars in the community.

D. Provide a list of regional solar installation companies on the City website and at City Hall. Include each company's available financing, leasing, and purchase options.

Measure 3.2: Group Purchasing of Renewable Energy

Build off the success of regional SunShares programs and encourage the development of large-scale cooperative programs for a group buy or discounts to provide clean energy.

Actions

A. Work with regional partners to create a large-scale cooperative program for group-buy discounts or funding off-site renewable energy that is credited to the homeowner's bill, such as the City of San Jose SunShares program.

B. Identify opportunities for regional group buy or bulk purchasing for renewables, such as the Bay Area Climate Collaborative Green Towns SunShares program.

Measure 3.2: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -7,290

Participation Metrics: 3,260 single-family homes (25%) and 630 multi-family homes (15%) participate in financing and bulk purchasing programs

Measure 3.3: Voluntary Renewable Energy

Promote voluntary renewable energy projects through education and incentives.

Actions

A. Develop an online application system for solar with minimum turnaround review times.

B. Revise zoning regulations to simplify renewable energy systems.

C. Work with regional partners to promote state rebates and other funding opportunities for renewable energy.

D. Create guidelines for installation of renewables on historic buildings.

E. Create a cohesive outreach and education campaign.

F. Hold a solar education fair to provide an overview of the process from permitting to installation, in collaboration with local contractors.

Measure 3.3: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -2,600

Participation Metrics: 2,450 single-family homes (19%) and 320 multi-family homes (7.5%) install solar systems

Measure 3.4: Municipal Best Practices in Renewable Energy

The City will lead by example and support renewable energy in municipal facilities.

Actions

A. Promote the City's solar PPA program that provides renewable energy at several City facilities.

Measure 3.4: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Measure 3.5: Model Power Purchase Agreement

Encourage development of model regional programs to provide a community-wide model for PPAs that would be available to businesses in the city, such as the Silicon Valley Collaborative Renewable Energy Procurement (SV-REP) project.

Measure 3.5: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -3,950

Participation Metrics: 590 average-size nonresidential buildings (10%) participate in PPAs

Actions

A. Work with partners to identify options for regional programs that could provide necessary financial arrangements to facilitate private use of PPAs.

B. Work with the Milpitas Chamber of Commerce to promote financing and rebate opportunities for renewable energy at local businesses.

C. Provide available advice and resources to participants using the lessons learned through the City's municipal PPA program.

Water

Goal 4: Demonstrate leadership in water conservation.

Water consumption requires energy to pump, treat, distribute, collect, and discharge water as it is used in the community, which results in GHG emissions. Conservation and the more efficient use of water are both important strategies to reduce GHG emissions from water use. Water reductions also prepare the City to adapt to the reduced water availability that may occur due to a changing climate. This goal identifies opportunities to reduce energy-intensive water consumption from both new construction projects and existing development. Implementing water efficiency measures and increasing use of recycled water can reduce the need to procure additional future water sources.

Measure 4.1: Tiered Water Rates

Continue water conservation efforts outlined in the Urban Water Management Plan and expand tiered water rate structures to apply to nonresidential customers in addition to residential customers.

Actions

A. Explore the potential of a tiered nonresidential water rate.

B. Encourage the installation and use of greywater and rainwater harvesting systems to reduce outdoor potable water use.

C. Implement the water-efficient landscaping ordinance and the water conservation ordinance.

D. Participate in ongoing regional coordination.

E. Continue to incentivize the use of recycled water for landscaping through rate reductions.

Measure 4.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Measure 4.2: Recycled Water

Work with regional partners to encourage expansion of recycled water infrastructure.

Actions

A. Work with regional partners and water providers to identify potential funding sources for expansion of recycled water infrastructure.

B. Continue to require all commercial and industrial development south of the Hetch Hetchy right-of-way to install recycled water lines, and require conversion of landscape irrigation to recycled water as soon as available.

Measure 4.2: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Transportation and Land Use

The following goals build on the City's many existing efforts to create a vibrant, mixed-use community to better meet resident needs. By adopting the Transit Area Specific Plan and the Midtown Specific Plan, the City has encouraged transit-oriented and mixed-use development by right. Standards support easy access to public transit and infrastructure that supports walking and bicycling. The plans for these communities promote the co-location of homes near schools, work, and shops while protecting the unique characteristics of the city's established neighborhoods and open spaces.

Goal 5: Provide an economically sustainable mixed-use community focused on high-density development around central urban plazas and gathering places.

Measure 5.1: Increased Densities

Continue to promote the increase of density and mixed uses in key opportunity areas, including the Midtown Specific Plan, Transit Area Specific Plan, and Town Center areas.

Measure 5.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive of Measure 6.1

Participation Metrics: Supportive of Measure 6.1

Actions

A. Require new development to include two or more uses per building if located along identified corridors or in a specific plan area.
B. Ensure pedestrian accessibility for all new development.
C. When new streets are necessary, offset with a new pedestrian-only area.
D. Support high-rise buildings along corridors.
E. Identify opportunities to support a neighborhood-serving grocery/food store in mid-town with affordable housing above.

Measure 5.2: Urban Plazas

Encourage development of urban plazas in new development in the Transit Area Specific Plan, Midtown Specific Plan, and Town Center areas to encourage pedestrian activity and vibrant mixed-use centers that reduce vehicular activity.

Actions

A. Create a threshold (number of new units, projected people, etc.) for requiring creation of new plazas.

B. Encourage developers to plan ahead and work together to combine efforts in plaza development (e.g., one plaza that joins two or more developments).

C. Incentivize development of Main Street Town Square.

Measure 5.2: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

D. Adopt standards to require the use of pervious paving materials in plazas, in addition to the provision of mature landscaping and other strategies that will maximize GHG reduction potential.

Measure 5.3: Open Space

Expand city parks and open spaces.

Actions

A. For every acre developed in the hillside area, set aside 1 acre for open space or parks.

B. Limit hillside development to very low densities and parks/open space.

C. Identify thresholds for new development mitigation for the provision of parks or open space.

Measure 5.3: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Goal 6: Achieve an efficient transportation system integrated into distinct areas that meets the needs of all users.

Measure 6.1: Transit Density

Support high levels of ridership at the new BART station by encouraging higher density, mixed uses, and connectivity along transit corridors and at transit nodes.

Measure 6.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -11,750

Participation Metrics: 8,000 single-occupant commuters working and/or living in Milpitas become new transit riders

Actions

A. Use existing codes and opportunities to promote mixed-use and higher-density development in the following areas:
   a. BART station area
   b. Light rail station areas
   c. Montague Expressway
   d. Great Mall Parkway
   e. Centre Point Drive
   f. High-rise building corridors
B. Establish density bonuses for projects with affordable housing and mixed uses.
   a. Minimum density of 41 dwelling units per acre

Relation to other CAP measures

In order for the reductions above from increased transit density and the new BART station to take place, the City must successfully implement other supportive measures, including 5.1, 6.2, 6.3, 8.3, and 8.4.

Measure 6.2: BART-Friendly Environment

Ensure a pedestrian-friendly environment around the BART and light rail transit stations in the Midtown Specific Plan and Transit Area Specific Plan areas.

Measure 6.2: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive of Measure 6.1

Participation Metrics: Supportive of Measure 6.1

Actions

A. Identify opportunities to break applicable areas into small, pedestrian-friendly blocks 300 to 400 feet wide.
B. Encourage the provision of public plazas and meeting areas.

Measure 6.3: Dense and Centralized Development

Promote dense development in central locations and along transportation corridors.

Actions

A. Identify density requirements suitable for each unique area.

B. Increase any density requirements in place.

C. Establish and enforce the urban boundary.

Measure 6.3: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive of Measure 6.1

Participation Metrics: Supportive of Measure 6.1

Measure 6.4: Regional Arterials

Maintain and continue to improve regional arterials within the city.

Actions

A. Conduct an inventory of the city's traffic signals and identify opportunities to improve signal timing at signalized intersections along regional arterials.

Measure 6.4: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -600

Participation Metrics: 60 intersections (90%) improve signal timing and synchronization

Goal 7: Increase use of non-motorized transportation throughout the community.

Measure 7.1: Expanded City Parks

Expand the City's park and open space system consistent with the General Plan.

Measure 7.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Actions

A. Ensure that new parks have three or more sides lined with streets.

B. Identify opportunities to share parks with schools in underserved neighborhoods.

Measure 7.2: Complete Streets

Initiate a rigorous citywide complete streets program to foster pedestrian and bicycle activity throughout the community.

Measure 7.2: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Actions

A. Continue to promote complete streets by removing barriers to alternative transportation and supporting the needs of all transit users.

B. Require infill development required to complete sidewalk connections and provide pedestrian amenities, including shading, benches, and landscaping.

Measure 7.3: Bikeways Master Plan infrastructure

Implement and maintain the facilities and infrastructure improvements identified in the Bikeways Master Plan to achieve high levels of bicycle and pedestrian activity.

Measure 7.3: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Actions

A. Implement the Bikeways Master Plan.

B. Pursue funding and regional partnerships.

Measure 7.4: Bikeways Master Plan Outreach

Initiate ongoing education and monitoring outreach programs to promote bicycle use and ensure ongoing responsiveness to the needs of cyclists, consistent with the Bikeways Master Plan.

Actions

A. Partner with the Bicycle Pedestrian Advisory Commission to develop an educational campaign.
B. Reach out to schools and other community groups as identified in the Bikeways Master Plan.
C. Conduct audits of bicycle activities as identified in the Bikeways Master Plan.
D. Hold bicycle outreach events and provide a bicycle valet as identified in the Bikeways Master Plan.

Measure 7.4: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Measure 7.5: Bicycle Parking

Adopt development code standards to require bicycle parking for 10% of total required parking spots and bicycle support facilities for nonresidential development greater than 10,000 square feet.

Actions

A. Create new development standards to support bicycle-parking requirements.

Measure 7.5: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Goal 8: Increase public transit ridership and ridesharing participation throughout the community.

Measure 8.1: Transportation Demand Management

Adopt and phase a citywide transportation demand management (TDM) ordinance by 2015, building on recommendations of the Transit Area Specific Plan, and establish a funding mechanism to pay for the costs of the program.

Actions

A. Expand existing rideshare programs to require mandatory inclusion of ridesharing in employer TDM programs and preferential parking for rideshare vehicles.

B. Allow proximity to BART to support TDM requirements for new development.

C. Offer density bonuses for exceeding minimum TDM requirements.

Measure 8.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -440

Participation Metrics: 6,010 single-occupant commuters (25%) participate in rideshare program

Measure 8.2: Car-Share Programs

Support development of a car-share program for local residents.

Actions

A. Work with City Car Share or other non-governmental organizations and/or businesses to provide car-sharing resources and information.

Measure 8.2: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -3,790

Participation Metrics: 3,610 single-occupant commuters (15%) participate in car-share program

Measure 8.3: Transit Education and Outreach

Promote the use of public transit through education.

Actions

A. Through the City's Bicycle and Pedestrian Advisory Commission, work with BART and other transit providers to promote public transit.

Measure 8.3: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive of Measure 6.1

Participation Metrics: Supportive of Measure 6.1

Measure 8.4: Regional Transit Use

Encourage existing public transit options that provide effective links to the Bay Area region, including the Santa Clara Valley Transportation Authority and connections to the Altamont Commuter Express.

Actions

A. Ensure development of new areas is supported by the necessary levels of transportation infrastructure and support.

B. Continue to work with regional transportation partners to expand existing connector routes, increase service, and improve stops.

C. Continue to participate in ongoing regional transportation processes to advocate for continued transit service to Milpitas.

Measure 8.4: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive of Measure 6.1

Participation Metrics: Supportive of Measure 6.1

Goal 9: Ensure an efficient public and private parking system communitywide.

Measure 9.1: Unbundled Parking Costs

Unbundle parking costs from housing and nonresidential building costs.

Measure 9.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Actions

A. Revise development standards for multi-family and mixed-uses to separate parking costs from the cost to rent, purchase, or lease residential and nonresidential buildings to incentivize use of alternative transportation modes.

Measure 9.2: Nonresidential Parking Requirements

Reduce minimum parking requirements for nonresidential development.

Measure 9.2: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Actions

A. Revise development standards to create incentives to reduce the minimum parking requirements for new nonresidential buildings in Milpitas (for example: allow for a reduction in parking in exchange for additional green plaza areas and opportunities for alternative transportation).

Goal 10: Provide and support expansion of infrastructure for low-emitting and fuel-efficient vehicles.

Measure 10.1: Parking for Low-Emissions Vehicles

Revise parking standards for public and nonresidential development to include designated stalls for low-emissions, fuel-efficient vehicles and carpool/vanpool vehicles.

Actions

A. Revise development standards.

B. Provide materials to support developers in obtaining and providing charging stations.

C. Investigate the possibility of facilitating a large-scale group buy of charging stations and other equipment on behalf of developers.

D. Provide a parking reduction ratio of one-to-one for every percentage of total parking spots designated for low-emitting, fuel-efficient vehicles.

E. Pre-wire stalls for electric vehicle charging stations for 2% of new parking capacity.

Measure 10.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -2,800

Participation Metrics: 1,220 new parking spaces (19% of businesses) established as vehicle charging spaces

Measure 10.2: Alternative Fueling Stations

Ensure alternative fueling stations are encouraged and allowed through land use designations that currently permit gas fueling stations.

Actions

A. Identify opportunities and suitable locations for new stations.

B. Revise development standards.

Measure 10.2: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Measure 10.3: Electric Vehicle Partnerships

Partner with the Bay Area Air Quality Management District, Joint Venture Silicon Valley, and the Silicon Valley Clean Cities Coalition to pursue funding for plug-in hybrid and electric vehicle deployment projects in the city.

Measure 10.3: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Actions

A. Work with partner agencies to seek grant funding through state and regional partnerships to fund fleet conversions to electric vehicles.

Measure 10.4: Residential Electric Vehicle Charging

Facilitate plug-in hybrid and electric vehicle charging stations for homes by promoting funding opportunities and streamlining permit procedures, including establishing maximum time frames for permit processing and simplified permit procedures.

Measure 10.4: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -790

Participation Metrics: 1,100 new homes (38%) pre-wired for electric vehicles

Actions

A. Create a guide/brochure for plug-in hybrid and electric vehicle home charger installations.

B. Simplify electrical and building permit procedures for plug-in hybrid and electric vehicle charging stations.

C. Create an online permit application process for home charging stations.

D. Work with regional partners to provide educational information.

Measure 10.5: BART Station Pedestrian Circulator

Investigate the feasibility of a pedestrian circulator around the BART station.

Measure 10.5: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): Supportive Measure – Not Estimated

Participation Metrics: Supportive Measure – Not Applicable

Actions

A. Study the feasibility of a pedestrian circulator around the BART station.

B. Pursue funding sources from BART, VTA and/or Metropolitan Transportation Commission.

Solid Waste

Goal 11: Reduce waste generation in the community by 2020.

Most waste is sent to the landfill, decomposes, and emits methane gas over time. Providing additional opportunities to recycle and compost can reduce the amount of waste disposed and associated GHG emissions.

The reductions reported for Measure 11.1 comprise the individual contributions of Actions A through E, as each action focuses on different types of solid waste reduction. Actions A and B quantify reductions from food waste collection, Action C focuses on yard waste and other waste types that can be turned into mulch material, and Action D addresses construction and demolition materials, such as pressure-treated wood and other inert materials. Action E addresses reductions from all remaining types of waste diversion, such as paper and cardboard.

Measure 11.1: Waste Diversion

Work with regional partners to increase the diversion of solid waste to 75% as required under AB 341.

Measure 11.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -9,200

Participation Metrics: 6,020 households and businesses (25%) participate in food waste collection program

40% of new construction projects participate in construction and demolition collection

Actions

A. Support the expansion of existing food waste and composting collection routes in order to provide composting services for interested residents and businesses.

B. Encourage local restaurants to compost food and provide compostable to-go containers.

C. Work with Republic Services to determine the feasibility of expanding composting and recycling services.

D. Amend the building demolition permit requirements and adopt a comprehensive construction and demolition ordinance to reach a 75% diversion rate.

E. Partner with waste providers to expand the diversion of other solid waste, including non-food and non-construction and demolition waste.

Off-Road Equipment

Goal 12: Support the expansion and use of clean technology off-road equipment.

Measure 12.1: Lawn and Garden Equipment

Support a community-wide transition to cleaner outdoor lawn and garden equipment.

Actions

A. Promote regional and state rebates for appliance improvements.

B. Support the BAAQMD's efforts to reestablish a voluntary exchange program for residential lawn mowers and backpack-style leaf blowers.

C. Require new buildings to provide accessible exterior electrical outlets to charge electric-powered lawn and garden equipment.

Measure 12.1: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -250

Participation Metrics: 680 conventional leaf blowers (35%) and 2,670 conventional lawn mowers (35%) replaced with electric versions

Measure 12.2: Construction Best Management Practices

Encourage construction projects to comply with BAAQMD performance-based best management practices.

Actions

A. The City will encourage new development to comply with applicable BAAQMD best management practices that reduce GHGs, including use of alternative-fueled vehicles and equipment, use of local recycled materials, and recycling of construction or demolition materials.

Measure 12.2: Implementation Metrics

2020 GHG Reduction ($MTCO_2e$): -4,010

Participation Metrics: 40% of construction equipment comply with applicable best management practices

5. Reviewing Projects

This chapter identifies the mechanisms the City will use to achieve performance targets for reduction measures identified in **Chapter 4**, consistent with State CEQA Guidelines Section 15183.5(b)(1)(D) and BAAQMD CEQA Air Quality Guidelines Section 4.

Applicability

For discretionary projects seeking to use CEQA streamlining provisions, the City may require measures in this CAP as mandatory conditions of approval or as mitigation identified in a mitigated negative declaration or in an environmental impact report, as feasible, on a project-by-project basis. This approach allows the City to ensure that new development can benefit from CEQA streamlining provisions while also ensuring that the City can achieve the reduction targets outlined in this plan.

Furthermore, as a programmatic tiering document under CEQA, the CAP will be the City's one-stop shop for greenhouse gas analysis and mitigation under CEQA. This CAP does not identify measures as mandatory or voluntary. Rather, the City will ensure appropriate use of the CAP for CEQA streamlining by maintaining the prerogative to identify appropriate mandatory and voluntary measures to integrate into project design or mitigation. The City will recommend inclusion of all feasible and applicable measures on a project-by-project basis. The City will use the development checklist described below to identify appropriate measures. City staff will also work with project applicants to determine the appropriate use of the CEQA benefits of the Climate Action Plan.

Development Checklist

To determine whether new development projects comply with the CAP, City staff will use the checklist in **Appendix C** for discretionary projects subject to CEQA.

6. Monitoring Progress

Monitoring Progress

This chapter identifies the procedures the City will use to monitor implementation of the CAP and presents methods for evaluating the effectiveness of CAP measures, as well as potential reasons to reevaluate reduction measures in the future. These procedures are consistent with State CEQA Guidelines Section 15183.5(b)(1)(E) and BAAQMD Guidelines Section 4. This chapter also identifies the standards the City will implement on a case-by-case basis and presents initial milestones the City must accomplish to begin using the CAP as a basis for project-level CEQA review.

Assessing Implementation

Reducing GHG emissions by 15% below baseline 2005 levels is an ambitious task. This section outlines a path for the City to monitor progress and summarizes the GHG reductions that will occur through implementation of the CAP. To ensure the success of this Climate Action Plan, the City will integrate CAP goals, measures, and actions into other local and regional plans, programs, and activities. As the City moves forward with Zoning Code updates, specific plans, Housing Element updates, and other planning efforts, staff will ensure that these efforts support and are consistent with the CAP.

Implementation Programs

Implementing the CAP will require City leadership to execute these measures and report on their progress. This plan identifies the responsible department for each measure and offers time frames for implementing each strategy. Lastly, successful implementation requires regular reporting. Staff will monitor progress toward implementing the CAP on an annual basis and report progress to the City Council each year. Developing an implementation and monitoring tool will assist the City to track progress.

The following implementation programs will ensure the City can realize the benefits of the CAP.

Implementation Program 1: Monitoring

Annually monitor and report progress toward achieving the reduction target.

Actions

A. Prepare an annual progress report for City Council review and consideration.

B. Utilize the monitoring and reporting tool to assist with annual reports.

C. Identify key staff responsible for annual reporting and monitoring.

IMPLEMENTATION PROGRAM 2: UPDATE THE GREENHOUSE GAS EMISSIONS INVENTORY AND CLIMATE ACTION PLAN

UPDATE THE BASELINE GREENHOUSE GAS EMISSIONS INVENTORY AND CLIMATE ACTION PLAN EVERY FIVE YEARS.

Actions

A. Prepare an inventory of 2010 community-wide and municipal GHG emissions no later than 2017.

B. Update the CAP no later than 2017 to incorporate the 2010 inventory and to reflect adoption of new technologies, programs, and policies to reduce GHG emissions.

C. Consider updating and amending the CAP as necessary, should the City find that specific reduction measures are not achieving intended GHG emissions reductions.

IMPLEMENTATION PROGRAM 3: COLLABORATIVE PARTNERSHIPS

CONTINUE TO DEVELOP PARTNERSHIPS THAT SUPPORT IMPLEMENTATION OF THE CLIMATE ACTION PLAN.

Actions

A. Continue formal memberships and participation in local and regional organizations that provide tools and support for energy efficiency, energy conservation, GHG emissions reductions, adaptation, education, and implementation of this plan.

IMPLEMENTATION PROGRAM 4: FUNDING SOURCES

SECURE NECESSARY FUNDING TO IMPLEMENT THE CLIMATE ACTION PLAN.

Actions

A. Identify funding sources for reduction measures as part of annual reporting.

B. Ensure implementation by including emissions reduction objectives in department budgets starting in fiscal year 2014/2015, the capital improvement program, and other City plans as appropriate.

C. Pursue local, regional, state, and federal grants as appropriate to support implementation.

IMPLEMENTATION PROGRAM 5: ECONOMIC DEVELOPMENT & SUSTAINABILITY MANAGER

CREATE AN ECONOMIC DEVELOPMENT & SUSTAINABILITY MANAGER POSITION.

A. Create a full-time position to implement both economic and sustainability objectives, acting as the responsible liaison between City government, residents, and businesses for growth objectives and those identified in this plan.

B. Designate the Economic Development & Sustainability Manager as the responsible agent to monitor new resources that may become available through CAP implementation, such as funding that may soon be available through the state's cap-and-trade program.

C. Allocate job-hours to the Economic Development & Sustainability Manager to develop strategies described in this CAP and integrate them with the City's economic development objectives.

D. Task the Economic Development & Sustainability Manager with tracking grant and funding opportunities to support sustainability and climate action programs and energy efficiency development activities.

E. Designate the Economic Development & Sustainability Manager with the responsibility of working with departments to integrate CAP considerations into the City's operating budget and capital improvement plans.

F. Direct the Economic Development & Sustainability Manager to coordinate project activities with other City departments and external agencies to provide policy and technical support on sustainability and climate action issues.

IMPLEMENTATION PROGRAM 6: DEVELOPMENT CHECKLIST

UPDATE THE CLIMATE ACTION PLAN DEVELOPMENT CHECKLIST (APPENDIX C) AS NECESSARY TO REFLECT LESSONS LEARNED THROUGH PROJECT STREAMLINING.

Actions

A. Work with residents and developers to utilize the development checklist for CEQA streamlining.

B. Monitor state and BAAQMD actions to identify future changes and modifications to the state or BAAQMD CEQA guidelines that affect implementation of the CAP.

C. Work with the BAAQMD to ensure new guidelines are integrated in the development checklist.

D. Create and distribute to regional partners a case study highlighting the benefits, lessons learned, and customer feedback discovered through implementation of the development checklist.

IMPLEMENTATION PROGRAM 7: GENERAL PLAN ANNUAL REPORTING

INTEGRATE CLIMATE ACTION PLAN MONITORING AND REPORTING FINDINGS INTO GENERAL PLAN ANNUAL REPORTING.

A. Use the reporting function of the Implementation and Monitoring Tool to summarize and report annual reductions from implementation of CAP measures as part of the annual report to the City Council on General Plan implementation.

6. Monitoring Progress

Evaluating the Plan

The matrix in **Table 6-1** contains key metrics and information to support successful implementation of the CAP. The matrix presents a time frame, responsible department, and existing City policies that support each measure. Time frames presented in the table correlate to the following periods:

- Near-Term (0–2 years)
- Mid-Term (2–5 years)
- Long-Term (5–7 years)

The following list summarizes abbreviations used to describe policies or programs in related planning documents.

- HE – General Plan Housing Element (2010)
- MSP – Midtown Specific Plan (2008)
- TASP – Transit Area Specific Plan (2008)
- GBR – Green Building Regulations (2009)
- EDP – Milpitas Economic Development Plan (2005)
- RIP – 2005–2010 Redevelopment Implementation Plan: Mid-Cycle Update (2008)
- RDA – Amended and Restated Redevelopment Plan for Project Area No. 1 (2010)
- OSECE – General Plan Open Space & Environmental Conservation Element (1994)
- BMP – Bikeways Master Plan (2009)
- LUE – General Plan Land Use Element (1994)
- CBTP – Santa Clara Valley Transit Authority Community Based Transportation Plan (2008)

Table 6-1: Implementation Plan

Measure		Time Frame	Responsible Department	Existing City Policies	Potential Regional Programs, Example Partners	Resources
1.1	Residential Energy Audits in Older Homes	Near-Term	Planning & Neighborhood Services	HE Policy B-3 HE Policy F-1.1 HE Policy F-1.2 HE Policy F-1.4	Retrofit Bay Area (Energy Upgrade CA)	www.energyupgradeca.org/county/santa_clara
1.2	Energy Upgrade California	Near-Term	Planning & Neighborhood Services	HE Policy F-1.1 HE Policy F-1.2 HE Policy F-1.4	Retrofit Bay Area (Energy Upgrade CA)	www.energyupgradeca.org/county/santa_clara

6. Monitoring Progress

Measure		Time Frame	Responsible Department	Existing City Policies	Potential Regional Programs, Example Partners	Resources
1.3	Discretionary Project Review	Mid-Term	Planning & Neighborhood Services	None		
1.4	Energy Benchmarking	Mid-Term	Planning & Neighborhood Services	None	PG&E Pacific Energy Center classes on benchmarking	www.pge.com/pec/
1.5	Urban Cooling	Mid-Term	Planning & Neighborhood Services	HE Policy F-1.2 MSP Policy 6.11	Cool California resources	www.coolcalifornia.org/cool-roofs
1.6	Smart Grid Integration	Long-Term	Planning & Neighborhood Services	TASP Policy 5.6	PG&E Emerging Technology Program	www.etcc-ca.com/
1.7	Appliance Upgrades	Mid-Term	Planning & Neighborhood Services	None	PG&E appliance rebate portal	www.pge.com/myhome/saveenergymoney/moneysaver/
1.8	Online Energy Monitoring	Near-Term	Planning & Neighborhood Services	TASP Policy 5.6	PG&E Emerging Technology Program	www.etcc-ca.com/
2.1	Energy Efficiency in New Development	Near-Term	Building & Safety, and Planning & Neighborhood Services	HE Policy F-1.3 HE Policy F-1.6 TASP Policy 5.7 TASP Policy 5.9	CALGreen Building Code, LEED, USGBC	http://www.energy.ca.gov/greenbuilding/ http://new.usgbc.org/
3.1	Renewable Energy in New Development	Near-Term	Planning & Neighborhood Services	MSP Policy 6.11 GBR II-20-3.01 TASP Policy 5.7 EDP Objective 4A.1	California Solar Initiative	http://www.gosolarcalifornia.ca.gov/
3.2	Group Purchasing of Renewable Energy	Mid-Term	Planning & Neighborhood Services	EDP Objective 4A.1	Joint Venture Silicon Valley SV-REP, Solar America Cities	http://www.jointventure.org, http://www.nrel.gov/docs/fy11osti/49930.pdf
3.3	Voluntary Renewable Energy	Mid-Term	Planning & Neighborhood Services	None	California Solar Initiative, Cool California	http://www.gosolarcalifornia.ca.gov/, http://www.nrel.gov/docs/fy11osti/49930.pdf

6. MONITORING PROGRESS

Measure		Time Frame	Responsible Department	Existing City Policies	Potential Regional Programs, Example Partners	Resources
3.4	Municipal Best Practices in Renewable Energy	Near-Term	Planning & Neighborhood Services	None	Solar America Cities	http://www.nrel.gov/docs/fy11osti/49930.pdf
3.5	Model Power Purchase Agreement	Long-Term	Planning & Neighborhood Services	None	US Department of Energy	www1.eere.energy.gov/wip/solutioncenter/financialproducts/ppa.html
4.1	Tiered Water Rates	Near-Term	Finance	MSP Policy 6.2	Bay Area Water Supply and Conservation Agency partnership	http://bawsca.org/
4.2	Recycled Water	Long-Term	Planning & Neighborhood Services, Engineering and Public Works	MSP Policy 6.4 TASP Policy 6.18 TASP Policy 6.20 TASP Policy 6.21	South Bay Water Recycling Program	
5.1	Increased Densities	Long-Term	Planning & Neighborhood Services	MSP Goal 2 MSP Policy 3.4 MSP Policy 3.10 MSP Policy 3.20 TASP Policy 4.69 TASP Policy 4.71 LUE Policy 2.a-1-24 HE Policy D-3 RIP Community Design 1	Urban Land Institute San Francisco Planning + Urban Research Association (SPUR) Local Government Commission	http://opr.ca.gov/s_infilldevelopment.php
5.2	Urban Plazas	Long-Term	Planning & Neighborhood Services	RIP Community Design 2 MSP Goal 3 MSP Policy 7.11 RDA-1 Item 9 TASP Policy 4.33 TASP Policy 4.73	Urban Land Institute San Francisco Planning + Urban Research Association (SPUR) Local Government Commission	http://opr.ca.gov/s_infilldevelopment.php
5.3	Open Space	Long-Term	Parks & Recreation, Planning & Neighborhood Services	LUE 2.a-I-15 LUE 2.a.I-16 MSP Policy 3.24 OSECE 4.a.I-2 TASP Policy 3.39	Greenbelt Alliance	http://opr.ca.gov/s_urbanforestry.php

6. Monitoring Progress

Measure		Time Frame	Responsible Department	Existing City Policies	Potential Regional Programs, Example Partners	Resources
6.1	Transit Density	Long-Term	Planning & Neighborhood Services, Engineering and Public Works	TASP Policy 4.54, 4.70 HE Policy D-3 HE Policy F-1.5 MSP Policy 3.4	Regional BART network	http://www.bart.gov/
6.2	BART-Friendly Environment	Long-Term	Planning & Neighborhood Services	TASP Policy 4.9	Regional BART network	http://www.bart.gov/
6.3	Dense and Centralized Development	Long-Term	Planning & Neighborhood Services	RIP Land Use 3 RIP Transportation 4		http://opr.ca.gov/s_infilldevelopment.php
6.4	Regional Arterials	Mid-Term	Planning & Neighborhood Services, Engineering and Public Works	LUE 3.b-G-1 TASP Policy 3.10	City of San Jose	http://www.sanjoseca.gov/transportation/supportFiles/tlsp/TLSP_APPLICATION.pdf
7.1	Expanded City Parks	Mid-Term	Parks & Recreation, Planning & Neighborhood Services	None	Greenbelt Alliance	http://opr.ca.gov/s_urbanforestry.php
7.2	Complete Streets	Long-Term	Planning & Neighborhood Services	TASP Policy 3.14 TASP Policy 4.60 TASP Policy 4.61 TASP Policy 4.9	ABAG, One Bay Area	onebayarea.org/file10013.html
7.3	Bikeways Master Plan Infrastructure	Mid-Term	Planning & Neighborhood Services, Engineering and Public Works	BMP Objective 1-3 BMP Goal 3 BMP Objective 3-2 BMP Objective 5-1 BMP Objective 5-2 BMP Objective 7-1 BMP Objective 8-1 BMP Objective 8-2 RIP Circulation 2 EDP Objective 2A.1 MSP Policy 4.2		http://www.opr.ca.gov/news.php?id=22

Measure		Time Frame	Responsible Department	Existing City Policies	Potential Regional Programs, Example Partners	Resources
7.4	Bikeways Master Plan Outreach	Near-Term	Planning & Neighborhood Services	BMP Objective 1-1 BMP Objective 2-2 BMP Objective 2-1 BMP Objective 3-1 BMP Objective 4-1 BMP Objective 4-2 BMP Objective 4-3 BMP Objective 4-4 BMP Objective 6-1 BMP Objective 6-2 BMP Objective 7-2	Bicycle Pedestrian Advisory Commission and Silicon Valley Bicycle Coalition	http://bikesiliconvalley.org/education
7.5	Bicycle Parking	Mid-Term	Parks & Recreation, Planning & Neighborhood Services	None	Bicycle Pedestrian Advisory Commission	bikesiliconvalley.org/
8.1	Transportation Demand Management	Long-Term	Planning & Neighborhood Services	TASP Policy 3.16	San Francisco's TDM partnerships	http://onebayarea.org/regional-initiatives/climate-initiatives-program/Innovative-Grants/Integrated-Public-Private-Transportation-Demand-Management-Project.html
8.2	Car-Share Programs	Long-Term	Planning & Neighborhood Services	None	City Car Share	https://www.citycarshare.org/
8.3	Transit Education and Outreach	Near-Term	Public Works	CBTP Transportation Amenities 9 CBTP Transportation Amenities 11 CBTP Transportation Amenities 12		http://opr.ca.gov/s_transportation.php

Measure		Time Frame	Responsible Department	Existing City Policies	Potential Regional Programs, Example Partners	Resources
8.4	Regional Transit Use	Near-Term	Public Works	CBTP Transit Services 1 CBTP Transit Services 3 CBTP Transit Services 4 CBTP Transit Services 5 CBTP Transit Services 6 CBTP Transportation Amenities 7 CBTP Transportation Amenities 8 RDA-1 Goal/Objective 11	Santa Clara Valley Transportation Authority (VTA)	http://www.vta.org/
9.1	Unbundled Parking Costs	Near-Term	Planning & Neighborhood Services	None	MTC	http://mtc.ca.gov/
9.2	Nonresidential Parking Requirements	Near-Term	Planning & Neighborhood Services	MSP Policy 4.24		
10.1	Parking for Low-Emissions Vehicles	Long-Term	Planning & Neighborhood Services	TASP Policy 3.34		opr.ca.gov/docs/Draft2012ZEVActionPlan(09-21-12).pdf
10.2	Alternative Fueling Stations	Mid-Term	Planning & Neighborhood Services	None	BAAQMD	http://www1.eere.energy.gov/cleancities/alternative_fuel_market_projects.html
10.3	Electric Vehicle Partnerships	Mid-Term	Planning & Neighborhood Services	None	BAAQMD and Electric Auto Association - Silicon Valley Chapter	eaasv.org/

Measure		Time Frame	Responsible Department	Existing City Policies	Potential Regional Programs, Example Partners	Resources
10.4	Residential Electric Vehicle Charging	Long-Term	Building & Safety, and Planning & Neighborhood Services	None		http://www.baaqmd.gov/Divisions/Strategic-Incentives/Bay-Area-EV-Ready/EV-Charge.aspx
10.5	BART Station Pedestrian Circulator	Long-Term	Planning & Neighborhood Services	CE 3.d-G-7	BART,VTA, MTC	
11.1	Waste Diversion	Long-Term	Building & Safety, and Planning & Neighborhood Services	None	Local Waste Haulers, CalRecycle Mandatory Commercial Recycling Ordinance	http://www.calrecycle.ca.gov/climate/recycling/
12.1	Lawn and Garden Equipment	Near-Term	Planning & Neighborhood Services	None	BAAQMD	http://www.baaqmd.gov/Divisions/Strategic-Incentives/Off-Road-Vehicles.aspx
12.2	Construction Best Management Practices	Mid-Term	Planning & Neighborhood Services	None	BAAQMD	http://www.baaqmd.gov/Divisions/Strategic-Incentives/Off-Road-Vehicles.aspx

IMPLEMENTATION AND MONITORING TOOL

The City will use the implementation matrix presented in **Table 6-1**, as well as the implementation and monitoring tool developed in tandem with this CAP, to track, monitor, and update the plan. As the City reports implementation progress, staff will evaluate the effectiveness of each measure to ensure anticipated GHG reductions are occurring. In the event that GHG reductions do not occur as expected, the City can modify or add additional policies to the CAP to ensure the City meets the local reduction target. Ongoing implementation, monitoring, and modification of the measures will enable the City to meet its reduction target.

7. GLOSSARY

Assembly Bill (AB) 32, California Global Warming Solutions Act of 2006: Establishes a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gases for the State of California. AB 32 designates the California Air Resources Board (CARB) as the responsible agency for monitoring and reducing statewide GHG emissions to reduce emissions to 1990 levels by 2020.

Assembly Bill (AB) 811: Authorizes all cities and counties in California to designate areas within which willing property owners may finance the installation of distributed renewable energy generation, as well as energy efficiency improvements, through low-interest loans. These financing programs are commonly referred to as Property Assessed Clean Energy (PACE) programs.

Assembly Bill (AB) 939: Establishes a goal of achieving a statewide waste diversion rate of 50% and requires cities and counties to divert a minimum of 50% of their waste stream for reuse or recycling.

Assembly Bill (AB) 1881: Requires local agencies to adopt a water-efficient landscape ordinance, limiting the amount of water used for landscaping purposes.

Association of Bay Area Governments (ABAG): The regional planning agency for the nine counties and 101 incorporated cities in the San Francisco Bay Area.

Buildout; Build-out: Development of land to its full potential or theoretical capacity as permitted under current or proposed planning or zoning designations.

Business-as-Usual (BAU): A business-as-usual projection forecasts greenhouse gas emissions without regulatory or technical intervention to reduce GHG emissions.

California Air Resources Board (CARB): A division of the California Environmental Protection Agency charged with protecting public health, welfare, and ecological resources through the reduction of air pollutants.

California Environmental Quality Act (CEQA): A state law requiring state and local agencies to regulate activities with consideration for environmental protection. If a proposed activity has the potential for a significant adverse environmental impact, an environmental impact report (EIR) must be prepared and certified as to its adequacy before action can be taken on the proposed project. General plans require the preparation of a program EIR.

California Green Building Standards Code (CALGreen): The 2010 California Green Building Standards Code, commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics.

7. GLOSSARY

California Solar Initiative (CSI): Allows the California Public Utilities Commission (CPUC) to provide incentives to install solar technology on existing residential, commercial, nonprofit, and governmental buildings if they are customers of the state's investor-owned utilities: Pacific Gas & Electric (PG&E), San Diego Gas & Electric (SDG&E), or Southern California Edison (SCE).

Carbon Dioxide (CO_2): A colorless, odorless gas that occurs naturally in the earth's atmosphere. Significant quantities are also emitted into the air by fossil fuel combustion.

Carbon Dioxide Equivalent (CO_2e): A metric measure used to compare the emissions from various greenhouse gases based on their global warming potential (GWP).The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP.

Car Sharing: A type of car rental where people rent cars for short periods of time, often by the hour.

Clean Car Fuel Standards (AB 1493, Pavley): Signed into law in 2002 and commonly referred to as Pavley standards. Requires carmakers to reduce GHG emissions from new passenger cars and light trucks beginning in 2011. CARB anticipates that the Pavley standards will reduce GHG emissions from new California passenger vehicles by about 22% in 2012 and about 30% in 2016, all while improving fuel efficiency and reducing motorists' costs.

Climate Action Plan (CAP): Strategic plans that establish policies and programs for reducing (or mitigating) a community's greenhouse gas emissions and adapting to the impacts of climate change.

Climate Change (also referred to as global climate change): The term "climate change" is sometimes used to refer to all forms of climatic inconsistency, but because the earth's climate is never static, the term is more properly used to imply a significant change from one climatic condition to another. In some cases, climate change has been used synonymously with the term "global warming"; scientists, however, tend to use the term in the wider sense to also include natural changes in climate.

Climate Change Mitigation: A technical or behavioral intervention to reduce the sources of greenhouse gas emissions in order to reduce the potential effects of climate change.

Climate Zone: The California Energy Commission (CEC) has classified the distinct climates throughout California by climate zone to recognize the variability in energy use based on local weather patterns. The CEC uses these climate zones to determine energy budgets for new and renovated buildings and prescriptive packages for each climate zone to ensure that they meet the State's Title 24 energy efficiency standards.

Co-Benefits: An additional benefit occurring from the implementation of a GHG reduction measure that is not directly related to reducing greenhouse gas emissions.

Complete Streets: Complete streets policies ensure that transportation planners and engineers consistently design and operate the entire roadway with all potential users in mind. This includes private vehicles, bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities. In 2007, the State of California adopted AB 1358, which directs the legislative body of a city or county, upon revision of the circulation element of its general plan, to identify how the jurisdiction will provide for the routine accommodation of all users.

7. GLOSSARY

Construction and Demolition Waste (C&D): C&D materials consist of the waste generated during the construction, demolition, or renovation of buildings, roads, and other construction projects. C&D materials may include heavy, bulky materials such as concrete, glass, wood, and metal, among other materials.

Energy Conservation: Reducing energy waste, such as turning off lights, heating, and motors when not needed.

Energy Efficiency: Doing the same or more work with less energy, such as replacing incandescent light bulbs with compact fluorescent light bulbs or buying an Energy Star appliance to use less energy for the same or greater output.

Energy Efficiency Standards (Title 24, Part 6): Title 24 standards were first adopted in 1978 and established minimum energy efficiency standards for residential and nonresidential buildings. These standards are updated continually by providing more stringent energy budgets for new buildings in an effort to reduce California's energy consumption.

Energy Star: A joint program of the US Environmental Protection Agency and the US Department of Energy to provide consumers with information and incentives to purchase the most energy efficient products available.

Energy Star Portfolio Manager: An online management tool that allows nonresidential building owners and tenants to track and assess energy and water use over time. Benchmarking energy and water use allows building owners to identify investment priorities, determine underperforming buildings, and verify efficiency improvements.

Environmental Impact Report (EIR): A report required by the California Environmental Quality Act (CEQA) that assesses all the environmental characteristics of an area and determines what effects or impacts will result if the area is altered or disturbed by a proposed action or project. See California Environmental Quality Act (CEQA).

Global Warming Potential (GWP): An index used to translate the level of emissions of various gases into a common measure in order to compare the relative potency of different gases without directly calculating the changes in atmospheric concentrations. Greenhouse gases are expressed in terms of carbon dioxide equivalent. Global warming potentials are expressed in terms relative to carbon dioxide, which has a global warming potential of 1.

Green Building: Sustainable or "green" building is a holistic approach to design, construction, and demolition that minimizes the building's impact on the environment, the occupants, and the community. See the California Green Building Standards Code (CALGreen) for green building regulations in California.

Greenhouse Gas or Greenhouse Gases (GHG): Gases that cause heat to be trapped in the atmosphere, warming the earth. Greenhouse gases are necessary to keep the earth warm, but increasing concentrations of these gases are implicated in global climate change. Greenhouse gases include all of the following: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The majority of greenhouse gases come from natural sources, although human activity is also a major contributor.

7. GLOSSARY

Greenhouse Gas Inventory: Provides estimates of the amount of GHGs emitted to and removed from the atmosphere by human activities. A city or county that conducts an inventory looks at both community emission sources and emissions from government operations. A base year is chosen and used to gather all data from that year. Inventories include data collection from such things as vehicle miles traveled (VMT), energy usage from electricity and gas, and waste. Inventories include estimates for carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs), which are referred to as the six Kyoto gases.

Green Waste: Refers to lawn, garden, or park plant trimmings and materials and can be used in home composters or picked up curbside by municipal waste haulers.

Greywater: Wastewater collected from showers, bathtubs, bathroom sinks, and clothes washing machines that is reused on site for irrigation purposes.

Low Carbon Fuel Standard (LCFS): An executive order from former Governor Schwarzenegger, the Low Carbon Fuel Standard established the goal of reducing the carbon intensity of transportation fuels in California by 10% by 2020.

Metropolitan Planning Organization (MPO): A federally funded transportation planning organization comprising representatives from local government agencies and transportation authorities.

Mixed Use: Properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with significant functional interrelationships and a coherent physical design. A single site may include contiguous properties.

Recycled Water: Wastewater from tubs, toilets, and sinks inside homes and offices that is cleaned through a treatment process, producing non-potable water that is safe for landscapes, raw vegetable crops, and agricultural crops.

Reduction Measure: A goal, strategy, program, or set of actions that target and reduce a specific source of greenhouse gas emissions.

Regional Transportation Plan (RTP): A long-term blueprint of the region's transportation systems. The RTP is a federally mandated comprehensive long-range regional planning document that identifies the region's transportation needs, sets forth an action plan of projects, determines actions and programs to address the needs and issues, and documents the financial resources needed to implement the RTP.

Renewable Energy: Energy from sources that regenerate and are less damaging to the environment, such as solar, wind, biomass, and small-scale hydroelectric power.

Renewables Portfolio Standard (RPS): A regulation requiring utility companies in California to increase the production of renewable energy from solar, wind, or biomass, or geothermal sources.

Senate Bill (SB) X7-7: Passed in 2009, SB X7-7 requires the state to achieve a 20% reduction in per capita water use by 2020. This law also requires local water providers to set an interim 2015 and a final 2020 community-wide target and demonstrate that projected water use is in compliance with that target, otherwise funding will be affected.

7. GLOSSARY

Senate Bill (SB) 97: Requires lead agencies to analyze GHG emissions and climate change impacts under CEQA.

Senate Bill (SB) 375: Directs the metropolitan planning organizations in California to create a Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan. The SCS will demonstrate how the region will achieve the 2020 and 2035 GHG reduction targets for the region set by CARB.

Smart Grid: Delivers electricity from suppliers to consumers using two-way digital communications. The smart grid is envisioned to overlay the ordinary electrical grid with an information and net metering system, which includes smart meters. Smart meters will allow consumers to become more aware of their energy use and in the future will allow smart grid enabled appliances to be preprogrammed to operate at a time when electricity costs are lowest.

Sustainability: Community use of natural resources in a way that does not jeopardize the ability of future generations to live and prosper.

Sustainable Communities Strategy (SCS): The land use element of each MPO's Regional Transportation Plan as required by SB 375. The SCS will demonstrate how the region will achieve the 2020 and 2035 VMT and GHG reduction targets for the region set by CARB.

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Transit-Oriented Development (TOD): A mixed-use residential or commercial area designed to maximize access to transit options.

Transportation Demand Management (TDM) Plan: A voluntary or mandatory program developed by local agencies, large employers, or high traffic commercial services to limit the amount of congestion and pollution related to transportation demand. TDM plans may include incentives, regulations, and education about transportation alternatives.

Unbundled Parking: A parking strategy in which parking spaces are rented or sold separately, rather than automatically included with the rent or purchase price of a residential or commercial unit.

Urban Heat Island: Describes built-up areas that are hotter than nearby rural areas. On a hot, sunny summer day, roof and pavement surface temperatures can be 50–90°F (27–50°C) hotter than the air, while shaded or moist surfaces remain close to air temperatures. These surface urban heat islands, particularly during the summer, have multiple impacts and contribute to atmospheric urban heat islands. Heat islands can affect communities by increasing summertime peak energy demand, air conditioning costs, air pollution and greenhouse gas emissions, heat-related illness and mortality, and water quality.

Vehicle Miles Traveled (VMT): A key measure of overall street and highway use. Reducing VMT is often a major objective in efforts to reduce vehicular congestion and achieve regional air quality goals.

Water Conservation: Reducing water use, such as by turning off taps, shortening shower times, and reducing outdoor irrigation demand.

7. GLOSSARY

Water-Efficient Landscape: Native or low-water-using landscapes. Water-efficient landscapes are required by law in all cities and counties in California to conserve water.

Water Use Efficiency: Replacing older technologies and practices in order to accomplish the same results with less water, for example, by replacing toilets with new high efficiency models and by installing "smart controllers" in irrigated areas.

Zero-Emissions Vehicle (ZEV): A vehicle that does not emit any tailpipe emissions from the on-board source of power. Both electric and hydrogen fuel cell vehicles are classified as ZEVs.

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APPENDIX A: GREENHOUSE GAS INVENTORY

GREENHOUSE GAS INVENTORY AND FORECAST REPORT

This report provides a detailed presentation of the community-wide greenhouse gas emissions inventory for the City of Milpitas and the estimated changes in those emissions for 2020 and 2035.

PURPOSE

The purpose of this greenhouse gas (GHG) emissions inventory (Inventory) is to identify the major sources of GHG emissions from the community of Milpitas and to provide a baseline against which future progress can be measured in a manner consistent with the direction of the Bay Area Air Quality Management District (BAAQMD). The identification of the major and minor sources of GHG emissions will also help in the process of creating reduction strategies in the CAP that are tailor-made to local emission characteristics.

On June 2, 2010, the BAAQMD's Board of Directors unanimously adopted new California Environmental Quality Act (CEQA) thresholds of significance and guidelines for GHG emissions. The BAAQMD CEQA Guidelines recommend air quality significance thresholds, analytical methodologies, and mitigation measures for cities and counties in the Bay Area to use when preparing air quality impact analyses under CEQA. These analyses are crucial to ensuring that new developments and improvements in the Bay Area do not adversely impact GHG emissions or the region's attainment of Assembly Bill (AB) 32 targets. The BAAQMD CEQA Guidelines include an option for completing a GHG emissions program, called a Qualified Greenhouse Gas Reduction Strategy, at the local government level. After meeting the specific criteria set forth by the BAAQMD to create a strategy, future developments in the jurisdiction would be able to go through a streamlined environmental review process for those projects in compliance with the BAAQMD CEQA Guidelines.

KEY CONCEPTS

The following terms are used throughout and are fundamental to understanding the contents of the Inventory and Forecast:

- **Baseline year:** Emissions are quantified for the baseline year of 2005, an emerging standard in cities across California, consistent with the baseline year definition of AB 32. This baseline year allows the City to track and observe the impact of its actions taken to date on GHG emissions and better inform future strategies.

- **Business-as-usual (BAU):** The scenario on which all forecasts are based. Assumes no specific actions are taken to reduce emissions and growth comes from the expansion of activity and services within Milpitas.

- **Carbon dioxide equivalent (CO_2e):** Represents the three main GHGs (carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O)) in comparable terms, since all three gases trap heat in the atmosphere differently.

- **Sectors:** Emissions are grouped by the type of activity that generated the emissions, such as transportation, residential energy use, and commercial energy use.

APPENDIX A: GREENHOUSE GAS INVENTORY

LOCAL CONSIDERATIONS

DIRECT WASTEWATER EMISSIONS

The City of Milpitas's wastewater needs are met by the San Jose/Santa Clara Water Pollution Control Plant (Plant) located in San Jose. The wastewater delivered from Milpitas to the Plant produces emissions such as methane and nitrous oxide because of the wastewater treatment process. To show the effect of these potent GHGs on the City's inventory, the emissions were quantified using methods outlined in the Local Government Operations Protocol (LGOP). The formulas used include Equation 10.2, 10.3.2.1, and 10.3. By using service population as the key indicator, in choosing equations which capture process emissions occurring at the Plant, the City of Milpitas is able to accurately report its direct process emissions from wastewater disposal.

LIGHT RAIL METHODS AND SOURCES

The City of Milpitas hosts three Santa Clara Valley Transit Authority (VTA) light rail transit stations with the city limits. With these stations located in Milpitas, residents, employees, and visitors have the opportunity and ability to utilize the VTA's light rail connections to the regional transit system. The emissions associated with the electric light rail infrastructure were included to reflect the amount of ridership resulting from the residents and employees in Milpitas.

Using the total number of VTA light rail boardings, the total number of VTA boardings, and the system-wide miles traveled for the proxy year of 2009, an estimated number of miles traveled on light rail was estimated for Milpitas users. Ridership information came from the VTA's Short Range Transportation Plan adopted in 2010 and the 2005 National Transit Database. Miles traveled on the light rail system were translated to GHG emissions using an energy factor (kWh of electricity per mile) from the Oak Ridge National Laboratory's (ORNL) Transportation Energy Data Book.

POINT SOURCES METHODS AND SOURCES

Stationary, or point source, emissions are identified and quantified in the Inventory but are not included as part of the community-wide inventory results due to the City's limited control over these emissions and the availability of data. Stationary sources in Milpitas emitted 101,480 $MTCO_2e$ in 2009. Data from 2009, as opposed to the baseline year of 2005, was used as it was the earliest available data from the reporting party, the Bay Area Air Quality Management District. The sources of stationary emissions include a landfill gas power plant (accounting for 95% of emissions) and approximately 80 backup power generators at various commercial locations. These emissions are released directly into the atmosphere and do not include indirect emissions sources such as electricity consumption.

APPENDIX A: GREENHOUSE GAS INVENTORY

COMMUNITY INVENTORY SUMMARY

In 2005, Milpitas emitted approximately 744,150 metric tons of carbon dioxide equivalent ($MTCO_2e$). **Table A-1** reports the emissions by sector and ranks the sectors from highest to lowest.

Table A-1: Baseline GHG Emissions by Sector

	2005 $MTCO_2e$	Percentage of Total
Transportation	320,990	43%
Nonresidential Energy	183,800	25%
Point Sources	101,480	14%
Residential Energy	64,230	9%
Solid Waste	54,410	7%
Off-Road Equipment	15,140	2%
Water and Wastewater	2,410	<1%
Light Rail	1,070	<1%
Direct Wastewater	620	<1%
Total*	744,150	100%

** Due to rounding, the total may not equal the sum of component parts.*

Table A-1 reports point source emissions, which include stationary sources and the Newby Island Resource Recovery Park, and direct wastewater emissions. Stationary sources are fixed emitters of air pollutants, such as power plants, stationary generators, petrochemical plants, and other heavy industrial sources. Since stationary source emissions are influenced by market forces beyond the City's local influence and are best regulated by the BAAQMD or through federal and state programs, they are reported in this Inventory for informational purposes only. Similarly, the City has limited control over the operation of the Newby Island Resource Recovery Park and is unable to directly affect the emissions generated from previously generated waste. The baseline inventory is intended to guide future local policy decisions that relate to emissions within the City's influence; therefore, stationary sources, and direct landfill emissions are excluded from all further discussions in this Inventory.

Table A-2 and **Figure A-1** reflect Milpitas's effective baseline of 642,050 $MTCO_2e$. Transportation was the largest sector (320,990 $MTCO_2e$), contributing about 50% of total emissions. Nonresidential energy use is the second largest sector (183,800 $MTCO_2e$, or 29%), followed by residential energy with 64,230 $MTCO_2e$ making up 10% of emissions. The remaining 11% of emissions came from solid waste (54,410 $MTCO_2e$), water and wastewater (2,410 $MTCO_2e$), and light rail (1,070 $MTCO_2e$).

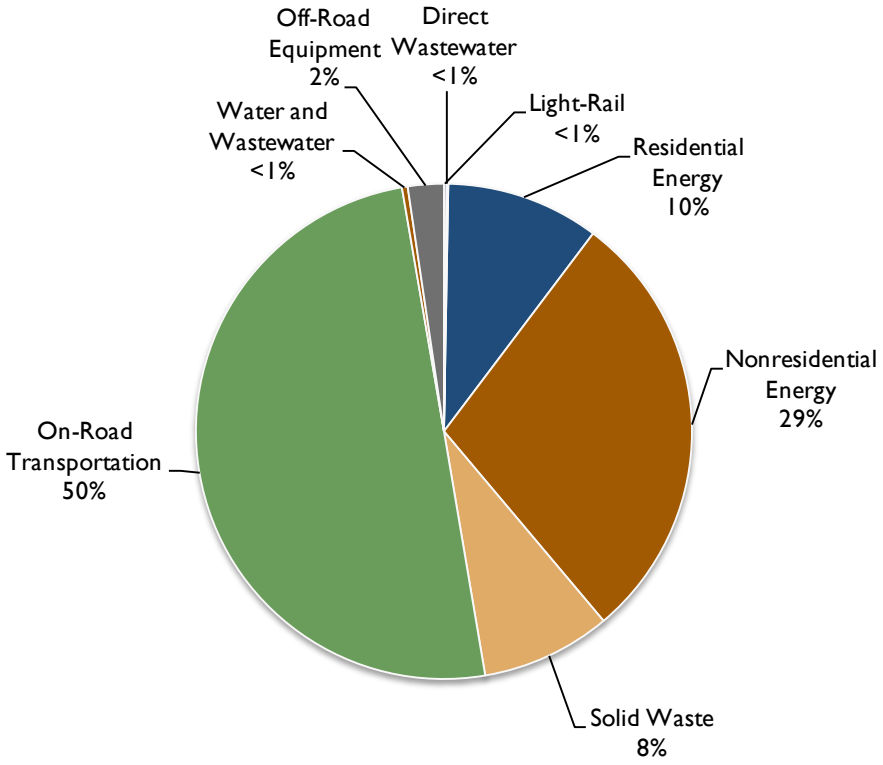
APPENDIX A: GREENHOUSE GAS INVENTORY

Table A-2: Effective Baseline Emissions by Sector

	2005 $MTCO_2e$	Percentage of Total
Transportation	320,990	50%
Nonresidential Energy	183,800	29%
Residential Energy	64,230	10%
Solid Waste	54,410	8%
Off-Road Equipment	15,140	2%
Water and Wastewater	2,410	<1%
Light Rail	1,070	<1%
Total*	642,050	100%

** Due to rounding, the total may not equal the sum of component parts.*

Figure A-1: Effective Baseline Emissions by Sector



BUSINESS-AS-USUAL FORECAST

A business-as-usual (BAU) GHG emissions forecast is a prediction of how GHG emissions will change in the future with anticipated changes in population, commercial activity, and driving patterns. This GHG

emissions forecast of community-wide emissions focuses on three target years: 2010, 2020, and 2035. The 2010 year is analyzed as a proxy for a community-wide inventory and will assist in determining the City's progress in reducing emissions. The 2020 year is estimated for consistency with AB 32 targets. Finally, the year 2035 is studied for consistency with the BAAQMD CEQA Guidelines.

Table A-3 lists the various growth indicators used in the forecasts of Milpitas's community-wide emissions. Growth in waste emissions is based on the total service population of Milpitas, as this includes projected residential, commercial, and industrial growth. Residential energy use is tied to the number of households within city limits for the target years. Similarly, commercial and industrial energy use emissions are assumed to grow with the number of jobs. Transportation is the only sector where more than one source of growth estimation is used. Growth indicators for 2010 and 2020 were provided by Hexagon Transportation Consultants, Inc., and 2035 growth was estimated using countywide figures from the Bay Area Metropolitan Transportation Commission (MTC).

Increases in vehicles miles traveled for 2020 were derived from the Milpitas Travel Forecasting Model (MTFM), a transportation planning tool developed by Hexagon Transportation Consultants, Inc. The MTFM evaluates the traffic impacts anticipated to occur in the future as a result of additional planned development in Milpitas, considering the effects of the City's planning efforts, including policies and programs found in the Transit Area Specific Plan (adopted June 2008) and the Midtown Specific Plan (adopted March 2002, amended October 2008). Significant VMT reductions from future BART ridership based on extending the BART system through Milpitas to San Jose are integrated within the MTFM. In order to highlight the many local benefits of this new ridership, the VMT reductions associated with BART have been removed from the model and are included in CAP Measure 6.1. VMT were provided and calculated on a daily basis. These daily VMT figures were translated into annual VMT using a factor of 347 days per year, provided by the California Air Resources Board, to account for reduced work-related traffic on weekends and holidays.

Table A-3: BAU Forecast Indicators

Growth Indicator	Emissions Sector	2005	2020	2035	Sources
Residents		64,800	82,300	106,000	ABAG 2009
Jobs		47,580	52,550	59,160	ABAG 2009
Service Population (Residents + Jobs)	Waste, Light Rail, Water, Direct Wastewater	112,380	134,850	165,160	ABAG 2009
Households	Residential Energy	17,850	23,090	30,470	ABAG 2009
Employment	Nonresidential Energy	47,580	52,550	59,160	ABAG 2009
Annual VMT	Transportation	697,265,000	799,761,089	940,035,849*	Hexagon, MTC

**VMT for 2035 was derived from countywide figures provided by the MTC*

APPENDIX A: GREENHOUSE GAS INVENTORY

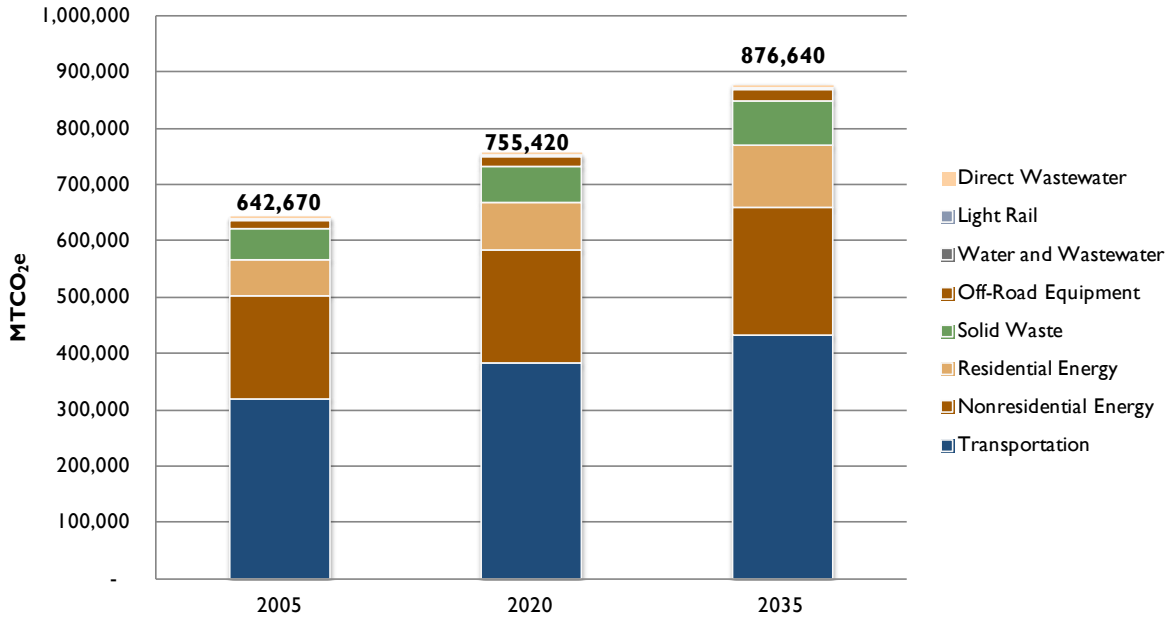
As shown in **Table A-4** and **Figure A-2**, emissions are anticipated to grow 18% from 2005 to 2020. Residential energy emissions are forecast to grow the most among the sectors (39%). The next largest sector would be light rail, followed by transportation, solid waste, and water and wastewater, and direct wastewater, all of which are expected to increase 20%. Many of these increases result from planned residential development in coming years. Emissions in 2035 are expected to grow 37% to 876,640 $MTCO_2e$.

Table A-4: Business-as-Usual Emissions Forecast

	2005 $MTCO_2e$	2020 $MTCO_2e$	2035 $MTCO_2e$
Transportation	320,990	383,630	432,750
Nonresidential Energy	183,800	203,000	228,540
Residential Energy	64,230	83,090	109,650
Solid Waste	54,410	65,290	79,960
Off-Road Equipment	15,140	15,460	19,670
Water and Wastewater	2,410	2,890	3,540
Light Rail	1,070	1,320	1,620
Direct Wastewater	620	740	910
Total*	642,670	755,420	876,640
Percentage Growth	–	18%	37%

** Due to rounding, the total may not equal the sum of component parts.*

Figure A-2: Business-as-Usual Forecast by Sector



APPENDIX A: GREENHOUSE GAS INVENTORY

ADJUSTED BUSINESS-AS-USUAL FORECAST

The adjusted business-as-usual (adjusted BAU) forecast is an estimate of how state actions focused on renewable energy, building energy efficiency, low-GHG transportation fuels, and vehicle fuel efficiency will reduce emissions in Milpitas. This adjustment creates a more realistic estimate of the city's future emissions since the reductions will require little to no effort on behalf of the City. A general overview of these state reduction programs is presented below.

California's Renewables Portfolio Standard (RPS): California's Renewables Portfolio Standard (RPS) mandates that 33% of electricity delivered in California is generated by renewable sources like solar, wind, and geothermal by 2020. The California RPS was first codified in 2002 by Senate Bill 1078 (requiring 20% renewable electricity mix by 2010) and further strengthened in April 2011 with the adoption of Senate Bill X 1-2 (requiring 33% renewable electricity mix by 2020).

Technological and political challenges may prevent some investor-owned utilities from meeting the 33% target by 2020. In 2010, the California Public Utilities Commission, the agency responsible for regulating and tracking the progress of the RPS, reported that 18% of California's electricity came from renewable sources in 2010, missing the 20% goal by 2%. California utilities have more than enough renewable electricity under consideration to meet the 33% target by 2020. However, due to contract and transmission limitations, not all of this new electricity will be available in time.[3] Taking these issues into account, this document assumes a more conservative forecast of a 28% renewable mix by 2020.

Pavley Vehicle Standards: California's Pavley regulations were established by AB 1493 in 2002 and require new passenger vehicles to reduce tailpipe GHG emissions from 2009 to 2020. Reductions from the Pavley regulations were calculated using the methodology included in the EMFAC 2011 tool provided by the California Air Resources Board (CARB) and supported by the BAAQMD. Emissions reductions per model year and vehicle class were applied to Milpitas's transportation emissions.

Low Carbon Fuel Standard (LCFS): Codified by 2007 Executive Order S-01-07, the LCFS is intended to reduce the GHG intensity of transportation fuels 10% by 2020. Under the BAAQMD's CEQA threshold development guidance, the LCFS is likely to reduce emissions locally by only 7.2% due to the exclusion of up-stream emissions and reductions. LCFS reductions apply to both on-road transportation and off-road equipment.

Title 24, Energy Efficiency Standards: The 2008 Title 24 update went into effect on January 1, 2010. The energy reductions quantified in the forecast are the mandatory improvements over the 2005 Title 24 code that was established by the update. These are statewide standards applied at the local level by city agencies through project review. The 2008 Title 24 Energy Efficiency Improvements in comparison to 2005 baseline Title 24 efficiency standards are provided by the California Energy Commission (CEC).

[3] Ibid.

California Solar Initiative (CSI): The CSI is a state program that provides cash rebates for the installation of an electric solar panel system. In order to qualify, the customer must buy electricity from one of California's three investor-owned utilities (Pacific Gas and Electric, Southern California Edison, or San Diego Gas & Electric).

Medium- and Heavy-Duty Efficiency Standards: Fuel efficiency improvement for the vehicle classes not covered by Pavley translate to GHG reductions for medium- and heavy-duty vehicles. The guidance for quantification of these reductions comes from the December 2009 BAAQMD Proposed Thresholds of Significance.

IMPACT OF STATE REDUCTION PROGRAMS

As shown in **Table A-5**, state reduction efforts are anticipated to reduce BAU emissions by 128,690 $MTCO_2e$ in 2020 and by 214,710 $MTCO_2e$ in 2035. The majority of these reductions are from the Pavley standards and cleaner energy production standards that PG&E is implementing pursuant to the statewide RPS. In comparison to the BAU scenario, 2020 emissions with state reduction measures are 3% below baseline 2005 levels rather than 18% above. Emissions in 2035 are 3% above baseline as opposed to 37% above in the BAU forecast.

Table A-5: Adjusted Business-as-Usual Emissions Forecast

	2020 $MTCO_2e$	2035 $MTCO_2e$
BAU Emissions Forecast	754,680	875,730
Pavley Vehicle Standards	-63,570	-106,910
Low Carbon Fuel Standard	-28,730	-32,570
Medium/Heavy-Duty Vehicle Efficiency	-840	-1,030
Renewables Portfolio Standard	-27,360	-45,530
California Solar Initiative	-360	-320
Title 24	-7,830	-28,350
Total State Reductions	-128,690	-214,710
Adjusted Growth Projection	626,620	661,930
Percentage Change From 2005	-3%	3%

APPENDIX B: REDUCTION MEASURE METHODS AND SOURCES

OVERVIEW AND PURPOSE

This reduction measure methods and sources appendix summarizes data sources, assumptions, and performance metrics used to calculate GHG emissions reductions for the City's Climate Action Plan. The sources and metrics are organized by measure and rely on four primary types of data and research: (1) the City's GHG emissions inventory and forecast, (2) government agency tools and reports, (3) case studies in similar jurisdictions, and (4) scholarly research.

Further, the approaches to quantification are consistent with the guidance provided by the BAAQMD for development of a Qualified GHG Reduction Strategy. The baseline GHG inventory and forecast serve as the foundation for the quantification of the City's GHG reduction measures. Activity data from the inventory forms the basis of measure quantification, including vehicle miles traveled, kilowatt-hours (kWh) of electricity or therms of natural gas consumed, and tons of waste disposed. Activity data was combined with the performance targets and indicators identified by the City and PMC staff. Together, the metrics of activity data and performance targets and indicators were used throughout the quantification process to calculate the GHG reduction benefit of each measure. This approach ensures that the City's GHG reductions are tied to the baseline and to future activities that are actually occurring within the city.

SUPPORTIVE MEASURES

Not all measures presented in **Chapter 4** will result in direct GHG emissions reductions. However, the implementation of these measures, commonly referred to as supportive measures, are essential to achieve the reported GHG reductions for quantified measures. For these reasons, the following measures are those with no reportable methods, metrics, and sources.

- Measure 1.3: Discretionary Project Review
- Measure 1.8: Online Energy Monitoring
- Measure 3.4: Municipal Best Practices in Renewable Energy
- Measure 4.1: Tiered Water Rates
- Measure 4.2: Recycled Water
- Measure 5.1: Increased Densities
- Measure 5.2: Urban Plazas
- Measure 5.3: Open Space
- Measure 6.2: BART-Friendly Environment
- Measure 6.3: Dense and Centralized Development
- Measure 7.1: Expanded City Parks
- Measure 7.2: Complete Streets
- Measure 7.3: Bikeways Master Plan Infrastructure
- Measure 7.4: Bikeways Master Plan Outreach
- Measure 7.5: Bicycle Parking
- Measure 8.3: Transit Education and Outreach
- Measure 8.4: Regional Transit Use
- Measure 9.1: Unbundled Parking Costs
- Measure 9.2: Nonresidential Parking Requirements
- Measure 10.2: Alternative Fueling Stations
- Measure 10.3: Electric Vehicle Partnerships
- Measure 10.6: BART Pedestrian Circulator

APPENDIX B: REDUCTION MEASURE METHODS AND SOURCES

TECHNICAL DATA FOR QUANTIFIED MEASURES

Measure:	1.1: Residential Energy Audits in Older Homes
2020 Emissions Reductions ($MTCO_2e$):	-3,930
Assumed Reduction per Participant (2020):	160 kWh and 10 therms per participating home
Performance Target(s) (2020):	Participation of 6,030 homes built before 1980
Reduction Method:	Reductions in electricity and natural gas use from energy audits are assumed to follow those from an aggressive energy efficiency outreach program. The Bonneville Power Administration published a case study in 2011 that showed a 2–3% reduction in home energy use through outreach programs. Since an energy audit does not directly result in energy reductions, only the identification of energy efficiency and conservations measures, it is assumed that with this knowledge, homeowners will take low- to no-cost actions, like those highlighted in outreach programs, to reduce energy use. Reductions are applied to a static target number of examples or representative homes, an assumed percentage of pre-1980 homes audited using grant funds, and a target percentage of pre-1980 homes audited through a business partnership program.
Reduction Sources:	BPA (Bonneville Power Administration). 2011. Residential Behavior Based Energy Efficiency Program Profiles 2011. http://www.bpa.gov/Energy/n/pdf/BBEE_Res_Profiles_Dec_2011.pdf.

Measure:	1.2: Energy Upgrade California
2020 Emissions Reductions ($MTCO_2e$):	-10,360
Assumed Reduction per Participant (2020):	1,160 kWh and 390 therms saved per single-family home 2,330 kWh and 780 therms saved per multi-family unit
Performance Target(s) (2020):	3,260 single-family homes and 630 multi-family units
Reduction Method:	Target participation rates for single-family and multi-family homes were applied to the number of homes in the baseline year to calculate the number of necessary retrofits to reach the participation targets. Baseline electricity and natural gas use was used for both single-family and multi-family homes using baseline energy use and 2005 households provided by the Association of Bay Area Governments (ABAG). The household number was broken out into single- and multi-family homes using the US Census Bureau's 2005–2007 American Community Survey. Metrics on the amount of energy saved per household participating in the Bay Area's Energy Upgrade California programs, known as Upgrade Bay Area, came from the 2012 ABAG report, titled "Retrofit Bay Area Final Report."
Reduction Sources:	ABAG (Association of Bay Area Governments). 2012. Retrofit Bay Area Final Report. US Census Bureau. 2005–2007 American Community Survey 3-Year Estimates.

APPENDIX B: REDUCTION MEASURE METHODS AND SOURCES

Measure:	1.4: Energy Benchmarking
2020 Emissions Reductions ($MTCO_2e$):	-8,260
Assumed Reduction per Participant (2020):	2,050 kWh and 130 therms per home rated and retrofitted 31,340 kWh and 690 therms per nonresidential buildings rated and retrofitted
Performance Target(s) (2020):	4,560 homes benchmarked and 1,140 homes audited and retrofitted 2,960 nonresidential buildings benchmarked and 740 nonresidential buildings audited and retrofitted
Reduction Method:	An estimated number of homes sales per year, based on common online sources, was applied to an assumed rate of energy benchmarking activity. Of these newly sold and rated homes, a certain percentage was assumed to go through a basic energy retrofit to see energy savings. A similar approach was used for nonresidential buildings. Savings from residential retrofits were derived from reported savings for homes in the Bay Area that went through the Energy Upgrade California program, and nonresidential savings came from the Brown et al. report cited below.
Reduction Sources:	ABAG (Association of Bay Area Governments). 2012. Retrofit Bay Area Final Report. Brown, Rich, Sam Borgeson, Jon Koomey, and Peter Biermayer. 2008. U.S. Building-Sector Energy Efficiency Potential. Ernest Orlando Lawrence Berkeley National Laboratory, University of California. http://enduse.lbl.gov/info/LBNL-1096E.pdf. Trulia, Inc. 2012. Milpitas Market Trends. http://www.trulia.com/real_estate/Milpitas-California/market-trends/.

Measure:	1.5: Urban Cooling
2020 Emissions Reductions ($MTCO_2e$):	-950
Assumed Reduction per Participant (2020):	0.25 $MTCO_2e$ reduced from energy conservation and carbon sequestration per home participating in a tree planting program, 120 kWh per home participating in a cool roof program, and 300 kWh per new passive solar home
Performance Target(s) (2020):	Participation of 890 remodeled homes and 2,920 new homes in the tree planting guidelines, participation of 450 existing homes in passive cooling outreach programs, 220 remodeled homes installing cool roofs, and 730 new passive solar homes

APPENDIX B: REDUCTION MEASURE METHODS AND SOURCES

Measure:	1.5: Urban Cooling
Reduction Method:	Reductions from the tree planting ordinance were applied to both new and existing development. A growth rate was formed to estimate the number of new homes built from 2013 to 2020 and the added electricity (using the forecast use adjusted for Title 24). An assumed target participation rate for new homes and remodels of existing homes was applied to the forecast and baseline information. Reductions come from the cited source below for sequestration and energy conservation from shading benefits. A target participation rate in an outreach program focused on cooling techniques was bundled with an assumed realization rate (percentage of those participating in outreach that will take the next step in cooling their home with passive devices). This effective percentage participation rate was applied to the kWh of cooling electricity (derived from the Residential Appliance Saturation Survey (RASS)) and the number of homes to gain the savings per home and total residential kWh saved. Action D applies only to existing homes going through retrofits (an estimated 5% by 2020). A target utilization rate was applied to reflect the likelihood that not all homes would participate in the cool roof program. A 20% reduction in cooling-related electricity was provided though personal communication with SMUD staff and was applied to the effective number of participating homes. Action E is applied only to new homes built between 2013 and 2020. An assumed participation rate was used with an assumed reduction in cooling electricity from using a passive solar design.
Reduction Sources:	Donovan, G., and D. Butry. 2009. The value of shade: Estimating the effect of urban trees on summertime electricity use. Energy and Buildings 41: 662–668. KEMA, Inc. 2010. 2009 California Residential Appliance Saturation Study, Volume 2: Results. CEC-200-2010-004. SMUD (Sacramento Municipal Utilities District). 2012. "Cool Roofs." https://www.smud.org/en/residential/save-energy/rebates-incentives-financing/cool-roofs.htm.

Measure:	1.6: Smart Grid Integration
2020 Emissions Reductions ($MTCO_2e$):	-180
Assumed Reduction per Participant (2020):	340 kWh and 10 therms per participating new home 3,090 kWh and 40 therms per participating new nonresidential building
Performance Target(s) (2020):	840 new homes added between 2018 and 2020 100 new businesses added between 2018 and 2020
Reduction Method:	A compounding annual growth rate was used to estimate the number of homes and businesses and the added energy use from 2018 to 2020. A common smart-grid appliance implementation rate of 95% was assumed for all new development from 2018 to 2020. Assumed reductions in electricity and natural gas use were applied to reflect the likely reductions from using smart-grid-enabled appliances.
Reduction Sources:	US Census Bureau. 2005–2007 American Community Survey 3-Year Estimates.

APPENDIX B: REDUCTION MEASURE METHODS AND SOURCES

Measure:	1.7: Appliance Upgrades
2020 Emissions Reductions ($MTCO_2e$):	-1,560
Assumed Reduction per Participant (2020):	160 kWh saved per existing single-family home 210 kWh saved per existing multi-family home 5,050 kWh and 120 therms reduced per existing business
Performance Target(s) (2020):	3,260 existing single-family homes, 1,960 existing multi-family homes, and 880 existing businesses
Reduction Method:	Reductions from upgrading appliances were reported by the California Air Pollution Control Officers Association (CAPCOA) source cited below and were applied to an assumed number of participating single-family and multi-family households. A target utilization rate of 75% was applied to reflect the likelihood of homes not utilizing all possible forms of energy-efficient appliances. Nonresidential reductions were calculated using the California Commercial End-Use Survey (CEUS). A utilization rate was also applied to nonresidential reductions based on the likelihood that not all efficient appliances would be installed in all buildings.
Reduction Sources:	CAPCOA (California Air Pollution Control Officers Association). 2010. Quantifying Greenhouse Gas Mitigation Measures. Itron, Inc. 2007. California Commercial End-Use Survey – Results Page. http://capabilities.itron.com/CeusWeb/Chart.aspx.

Measure:	2.1: Energy Efficiency in New Development
2020 Emissions Reductions ($MTCO_2e$):	-150
Assumed Reduction per Participant (2020):	10 kWh and 10 therms per new home 210 kWh and 30 therms per new average-size business
Performance Target(s) (2020):	60 new single-family homes, 350 new multi-family homes, and 260 new average size businesses
Reduction Method:	Tier 1 and Tier 2 levels of CALGreen are improvements upon the existing Title 24 Building Code in California. These improvements were translated into pure energy reductions using the CAPCOA source cited below. Reductions shown for this measure reflect one year (2013) of required Tier 1 improvements for all new development followed by the Tier 2 standard for 2014–2020. In this case, both phases of tiers are assumed to have the same improvement beyond Title 24.

APPENDIX B:
REDUCTION MEASURE METHODS AND SOURCES

Measure:	2.1: Energy Efficiency in New Development
Reduction Sources:	California Energy Commission. 2012. Proposed Energy Provisions of the California Green Building Standards Code. http://www.energy.ca.gov/title24/2013standards/green_building/documents/2012-09-20_webinar/2012-09-20_Webinar-Energy_Provisions_of_2013_Title_24_Part_11.pdf. ———. 2012. 2013 Building Energy Efficiency Standards. http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/2012-5-31-Item-05-Adoption_Hearing_Presentation.pdf. CAPCOA (California Air Pollution Control Officers Association). 2010. Quantifying Greenhouse Gas Mitigation Measures. Hexagon Transportation Consultants, Inc. 2011. Milpitas Climate Action Plan VMT Calculations. Itron, Inc. 2007. California Commercial End-Use Survey – Results Page. http://capabilities.itron.com/CeusWeb/Chart.aspx. KEMA, Inc. 2010. 2009 California Residential Appliance Saturation Study, Volume 2: Results. CEC-200-2010-004.

Measure:	3.1: Renewable Energy in New Development
2020 Emissions Reductions ($MTCO_2e$):	-1,360
Assumed Reduction per Participant (2020):	19,960 kWh and 1,370 therms per new nonresidential building 5,040 kWh per participating new single-family home
Performance Target(s) (2020):	20 new nonresidential facilities and 1,210 new single-family homes pre-wired for solar which install solar by 2020
Reduction Method:	Energy use added from 2013 to 2020 was calculated for both nonresidential and residential sectors along with businesses and single family homes added for the same period. An assumed percent of nonresidential energy was attributed to be subject to this measure, i.e. the participation rate, of 5%. It was assumed that 5% of new nonresidential buildings would achieve 50% of their energy from renewable sources through the City's discretionary review process. It was also assumed that 25% of new single family homes would be pre-wired with solar capabilities and that 25% of those pre-wired homes would install an average size solar system by 2020.
Reduction Sources:	NREL (National Renewable Energy Laboratory). 2012. PVWatts Calculator. http://www.nrel.gov/rredc/pvwatts/.

Measure:	3.2: Group Purchasing of Renewable Energy
2020 Emissions Reductions ($MTCO_2e$):	-7,290
Assumed Reduction per Participant (2020):	5,040 kWh per participating home

APPENDIX B: REDUCTION MEASURE METHODS AND SOURCES

Measure:	3.2: Group Purchasing of Renewable Energy
Performance Target(s) (2020):	3,260 single-family and 630 multi-family homes participating in financing and bulk purchasing programs
Reduction Method:	Assumed participation rates for single-family and multi-family homes were assumed for both the financing and bulk-purchasing portions of this measure. An average system size was then used along with the NREL's PVWatts calculator to produce kWh of electricity produced from solar energy per year.
Reduction Sources:	NREL (National Renewable Energy Laboratory). 2012. PVWatts Calculator. http://www.nrel.gov/rredc/pvwatts/.

Measure:	3.3: Voluntary Renewable Energy
2020 Emissions Reductions ($MTCO_2e$):	-2,600
Assumed Reduction per Participant (2020):	5,040 kWh per participating home
Performance Target(s) (2020):	2,450 single-family and 320 multi-family homes installing solar systems
Reduction Method:	Assumed participation rates for the installation of solar systems in both single-family and multi-family homes were applied to baseline household and electricity use data. An average system size was then used along with NREL's PVWatts calculator to produce kWh of electricity produced from solar energy per year.
Reduction Sources:	NREL (National Renewable Energy Laboratory). 2012. PVWatts Calculator. http://www.nrel.gov/rredc/pvwatts/.

Measure:	3.5: Model Power Purchase Agreement
2020 Emissions Reductions ($MTCO_2e$):	-3,950
Assumed Reduction per Participant (2020):	36,000 kWh per average-sized business
Performance Target(s) (2020):	590 average-sized businesses
Reduction Method:	A target participation rate in the PPA and solar installation programs was applied to estimates of the number of businesses in Milpitas (derived from a 2007 US Census Bureau count of the number of firms in the city) to get the number of participating businesses. An average system size of 15 kW was applied to each participant, and the NREL's PVWatts calculator was used to calculate the total kWh produced by each system.
Reduction Sources:	NREL (National Renewable Energy Laboratory). 2012. PVWatts Calculator. http://www.nrel.gov/rredc/pvwatts/. US Census Bureau. 2005–2007 American Community Survey 3-Year Estimates.

APPENDIX B: REDUCTION MEASURE METHODS AND SOURCES

Measure:	6.1: Transit Density
2020 Emissions Reductions ($MTCO_2e$):	-11,750
Assumed Reduction per Participant (2020):	360 VMT per home and 480 VMT per job
Performance Target(s) (2020):	8,000 new transit riders working and/or living in Milpitas
Reduction Method:	Milpitas's business-as-usual VMT forecast included reductions in conventional VMT as a result of increased transit ridership. Further correspondence with Hexagon Transportation Consultants, Inc., resulted in pulling out a set number of transit VMT from the forecast and including them here.
Reduction Sources:	Hexagon Transportation Consultants, Inc. 2011. Milpitas Climate Action Plan VMT Calculations. Hexagon Transportation Consultants, Inc. 2011. Personal Correspondence with At van den Hout.

Measure:	6.4: Regional Arterials
2020 Emissions Reductions ($MTCO_2e$):	-600
Assumed Reduction per Participant (2020):	10 $MTCO_2e$ reduced per synchronized traffic intersection
Performance Target(s) (2020):	60 intersections
Reduction Method:	The number of intersections in Milpitas was reported in the FY 2010 CAFR, cited below. The savings per synchronized signal was derived from a 2008 funding proposal by the City of San Jose. Using the number of signals to be synchronized in the projects and the reported future savings in fuel use, a factor of gallons saved per signal was calculated and applied to the City of Milpitas. The project outline in the City of San Jose funding proposal was 90% engineered at the time, leading to a high confidence in the reduction numbers reported and used.
Reduction Sources:	California Air Resources Board, et al. 2010. Local Government Operations Protocol. City of Milpitas. 2010. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2010. City of San Jose. 2008. Proposition 1B Traffic Light Synchronization Program Application for Traffic Signal Communications and Synchronization Project. http://www.sanjoseca.gov/transportation/supportFiles/tlsp/TLSP_APPLICATION.pdf. CARB (California Air Resources Board). Climate Change Draft Scoping Plan – Measure Documentation Supplement. http://www.arb.ca.gov/cc/scopingplan/document/measure_documentation.pdf.

APPENDIX B:
REDUCTION MEASURE METHODS AND SOURCES

Measure:	8.1: Transportation Demand Management
2020 Emissions Reductions ($MTCO_2e$):	-440
Assumed Reduction per Participant (2020):	210 miles reduced per participating commuter
Performance Target(s) (2020):	6,010 single-occupant commuters participating in rideshare program
Reduction Method:	The total number of people who commute from Milpitas by driving alone was obtained from the US Census Bureau's 2005–2007 American Community Survey. An assumed participation rate was applied to get the number of drivers switching to a rideshare commuting program. A VMT reduction per participant was applied to show the savings from a rideshare program.
Reduction Sources:	Blake, Cindy. 2009. Rideshare Administrative Assistant. Lucky Bucks statistical data. November 3. US Census Bureau. 2005–2007 American Community Survey 3-Year Estimates.

Measure:	8.2: Car-Share Programs
2020 Emissions Reductions ($MTCO_2e$):	-3,790
Assumed Reduction per Participant (2020):	3,000 miles per participant per year
Performance Target(s) (2020):	3,610 single-occupant commuters participating in car-share program
Reduction Method:	The total number of single-occupant commuters was retrieved from the US Census Bureau's American Community Survey. An assumed participation rate was applied. Participation in car-sharing programs in a typical region is 10–20% of residents living in neighborhoods suitable for car sharing, and perhaps 3–5% of those residents would car share rather than own a private vehicle ownership if the service were available (VTPI 2009). Car sharing is found to typically be used by residents that drive 6,000 miles a year or less. Reduction is approximately 50%, or 3,000 miles a year.
Reduction Sources:	City Car Share. n.d. Bringing Car-Sharing to Your Community. http://www.citycarshare.org/download/CCS_BCCtYC_Long.pdf. VTPI (Victoria Transport Policy Institute). 2008. TDM Encyclopedia. Ridesharing. http://www.vtpi.org/tdm/tdm34.htm.

Measure:	10.1: Parking for Low-Emissions Vehicles
2020 Emissions Reductions ($MTCO_2e$):	-2,800
Assumed Reduction per Participant (2020):	4.6 $MTCO_2e$ reduced per electric vehicle charging station parking spot installed
Performance Target(s) (2020):	1,220 additional electric vehicle charging station parking spots

APPENDIX B: REDUCTION MEASURE METHODS AND SOURCES

Measure:	10.1: Parking for Low-Emissions Vehicles
Reduction Method:	Reductions are assumed to come from an aggressive outreach program focused on electric vehicle fleet conversion and the setting aside of parking spots for electric and other low-emissions vehicles. An assumed mileage driven per parking spot per year metric was used to estimate the emissions associated with one nonresidential parking spot per year. The difference between these emissions and the emissions associated with driving an electric or low-emissions vehicle is the reduction reported for the measure.
Reduction Sources:	Plug-In Cars. 2010. Nissan LEAF Finally Gets Official EPA Fuel Economy Label. http://www.plugincars.com/nissan-leaf-finally-gets-official-epa-label-106486.html.

Measure:	10.4: Residential Electric Vehicle Charging
2020 Emissions Reductions ($MTCO_2e$):	-790
Assumed Reduction per Participant (2020):	2,060 fossil fuel–powered VMT per household
Performance Target(s) (2020):	1,100 new homes pre-wired for electric vehicles
Reduction Method:	The number of vehicle miles traveled (VMT) within Milpitas on local roads, assumed to be the most common use for an electric vehicle (EV), was collected from Table 2 of the Hexagon memo cited below. An assumed participation rate for pre-wiring and a further rate for pre-wired homes utilizing EVs were used to calculate the total savings. Per household savings assume that the internal trips on local roads are replaced completely by EVs.
Reduction Sources:	ABAG (Association of Bay Area Governments). 2009. Projections 2009. Hexagon Transportation Consultants, Inc. 2011. Milpitas Climate Action Plan VMT Calculations.

Measure:	11.1: Waste Diversion
2020 Emissions Reductions ($MTCO_2e$):	-9,200
Assumed Reduction per Participant (2020):	0.4 tons of food waste per participating customer 1.5 tons of C&D waste per new construction project
Performance Target(s) (2020):	6,020 customers participating in food waste collection program and 40% of new construction projects

APPENDIX B:
REDUCTION MEASURE METHODS AND SOURCES

Measure:	11.1: Waste Diversion
Reduction Method:	For the food waste collection action focused on the community, an assumed participation rate of 5% was applied, along with the percentage of waste which was food, to calculate the tons of food waste disposed of in 2005. A factor utilized in the quantification of existing measures was used to calculate the amount of $MTCO_2e$ offset by composting food waste and not disposing of it in a landfill. Implementation is based on a target percentage of restaurants participating. The number of restaurants in the city was estimated using a focused search of yelp.com. An assumed number of employees per restaurant was applied so that the CIWMB's tons per employee per day figure could be better utilized. Table SW-1.3 of CAPCOA was used to calculate the tons of food waste from total tons. A factor utilized in the quantification of existing measures was used to calculate the amount of $MTCO_2e$ offset by composting food waste and not disposing of it in a landfill. Implementation is based on a target percentage of restaurants participating. For the C&D ordinance action, the amount of waste disposed in 2020 was used because it is based on future growth and is more accurate for the future C&D generation from growth in Milpitas. The amount of waste from C&D, as a percentage of total, came from the CARB Landfill Emissions Tool v1.2. A compliance rate of 95% was applied to the 75% diversion rate to calculate the effective diversion rate of 71%. The CARB Landfill Emissions Tool was used again to calculate how much $MTCO_2e$ is emitted per each ton of C&D waste disposed. This factor was applied to the tons of C&D diverted in 2020 to calculate the total GHG benefit of the ordinance.
Reduction Sources:	CIWMB (California Integrated Waste Management Board). 2006. Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups. CAPCOA (California Air Pollution Control Officers Association). 2010. Quantifying Greenhouse Gas Mitigation Measures. California Air Resources Board. Landfill Emissions Tool. V1.2. http://www.arb.ca.gov/cc/protocols/localgov/localgov.htm Haight, M. 2005. "Assessing the environmental burdens of anaerobic digestion in comparison to alternative options for managing the biodegradable fraction of municipal solid wastes." Water Science & Technology (52): 553–559.

Measure:	12.1: Lawn and Garden Equipment
2020 Emissions Reductions ($MTCO_2e$):	-250
Assumed Reduction per Participant (2020):	0.08 $MTCO_2e$ per lawn mower replaced and 0.04 $MTCO_2e$ per leaf blower replaced
Performance Target(s) (2020):	680 conventional leaf blowers and 2,670 conventional lawn mowers replaced with electric versions
Reduction Method:	The GHG reduction potential of switching leaf blowers and lawn mowers to electric from gasoline or diesel will result in decreased fuel consumption and air pollution but will also result in a small increase in electricity use to power this equipment. The net difference between the original emissions of those converted pieces of equipment and the emissions from the added electricity use from conversion is represented here.

APPENDIX B:
REDUCTION MEASURE METHODS AND SOURCES

Measure:	12.1: Lawn and Garden Equipment
Reduction Sources:	BAAQMD (Bay Area Air Quality Management District). 2010. History of Air District: 1995–2000. http://www.baaqmd.gov/Divisions/Communications-and-Outreach/News-Media-and-Features/History-of-Air-District-2005/1995--2000.aspx. CAPCOA (California Air Pollution Control Officers Association). 2010. Quantifying Greenhouse Gas Mitigation Measures. CARB (California Air Resources Board). 2007. Off-Road Software.

Measure:	12.2: Construction Best Management Practices
2020 Emissions Reductions ($MTCO_2e$):	-4,010
Assumed Reduction per Participant (2020):	5% to 9% reduction in emissions per piece of equipment
Performance Target(s) (2020):	40% of construction equipment comply with applicable best management practices
Reduction Method:	A target conversion rate to alternative fuels of 40% was assumed for all construction equipment used in Milpitas. An even distribution was used for the four fuels listed in the measure, meaning each will have a market penetration of 10%. Emissions factors from Table 4 in the EPA report "Potential for Reducing Greenhouse Gas Emissions in the Construction Sector" were used to calculate the reduction from converting diesel vehicles to CNG fuel; Table 5 was used for conversion to biodiesel and assumed reductions were used for electric and hybrid conversions.
Reduction Sources:	EPA (US Environmental Protection Agency). 2009. Potential for Reducing Greenhouse Gas Emissions in the Construction Sector. http://www.epa.gov/sectors/pdf/construction-sector-report.pdf.

APPENDIX C: DEVELOPMENT CHECKLIST

DEVELOPMENT CHECKLIST

The following checklist has been developed to assist project applicants and City staff to determine whether a proposed project complies with the Climate Action Plan.

If the proposed project's expected GHG emissions were not considered in the GHG emissions 2020 and 2035 forecast included in **Appendix A** of the CAP, this checklist is provided for informational use but may not preclude preparation of separate GHG analysis for the project. Examples of projects that may not be incorporated into the City's forecast include stationary source emissions regulated by the Bay Area Air Quality Management District, General Plan amendments, new specific plans that exceed the City's proposed population and job growth forecasts, and GHG emissions used in specific manufacturing processes that are not easily tracked at a community-wide level.

PROJECT DESCRIPTION/CHARACTERISTICS

Please identify the applicable land uses included in the proposed project and provide a brief description of the proposed project (or the project description to be used for the associated environmental document).

Identify the applicable land uses:

☐ Residential ☐ Commercial ☐ Industrial ☐ Manufacturing ☐ Other

Project Description:

APPENDIX C: DEVELOPMENT CHECKLIST

AMENDMENTS REQUESTED

Does the project require an amendment to any of the following planning documents?

General Plan: ☐ Yes ☐ No ☐ Not Sure

Midtown Specific Plan: ☐ Yes ☐ No ☐ Not Sure

Transit Area Specific Plan: ☐ Yes ☐ No ☐ Not Sure

GHG EMISSIONS INCORPORATED WITHIN CITY GHG FORECAST

Was this project, and its potential GHG emissions sources, considered in the City's GHG inventory and forecast?

☐ Yes ☐ No ☐ To be determined by staff

PROJECT SOURCES OF GHG EMISSIONS CONSIDERED IN CITY INVENTORY

Identify the activities and sources of GHG emissions anticipated by the proposed project during either the construction or operational phases of the project.

Potential GHG Emissions Sources:		
☐ Electricity Use	☐ Res./Comm./Ind. Waste	☐ Gasoline or Diesel Use
☐ Natural Gas Use	☐ Wastewater Disposal	☐ Transportation (On-Road)
☐ Const. & Demolition Waste	☐ Water Use	☐ Off-Road Equipment
☐ Other _____		

APPLICABLE MEASURES/COMPLIANCE

Identify in the checklist below the applicable measures that will be implemented as part of the proposed project to demonstrate consistency with the City's Climate Action Plan.

Required Measures

This list includes measures and actions included in the CAP that are (1) required to be included in the project design and implementation and(2) currently being implemented by the City. By following these

two conditions and meeting the requirements identified below, the project demonstrates consistency with the CAP. As the City implements additional CAP measures, they will be added to this list.

Measure	Action	Applicability	Compliance*
			☐ Yes ☐ No ☐ N/A
			☐ Yes ☐ No ☐ N/A
			☐ Yes ☐ No ☐ N/A
			☐ Yes ☐ No ☐ N/A
			☐ Yes ☐ No ☐ N/A
			☐ Yes ☐ No ☐ N/A
			☐ Yes ☐ No ☐ N/A

** All measures that are considered applicable on this list are required to be implemented in order to demonstrate consistency with the CAP.*

RECOMMENDED MEASURES

This list includes measures and actions identified in the CAP, or programs and regulations that have yet to be adopted by the City, which would apply to a project of this type. These measures should be included in the project design as feasible and, once implemented or adopted by the City, be included in the list of required measures above.

Measure	Action	Applicability	Compliance*
			☐ Yes ☐ No ☐ N/A
			☐ Yes ☐ No ☐ N/A
			☐ Yes ☐ No ☐ N/A
			☐ Yes ☐ No ☐ N/A
			☐ Yes ☐ No ☐ N/A
			☐ Yes ☐ No ☐ N/A

** All measures considered applicable on this list should be considered for implementation in order to demonstrate consistency with the CAP.*

OTHER GHG REDUCTION MEASURES IMPLEMENTED

List and describe any additional measures that this project will incorporate to reduce GHG emissions that are not included in the CAP. If available, provide the estimated GHG reductions that would occur on an annual basis from implementing the measure, in $MTCO_2e$.

Additional Measure	Estimated Annual GHG Reductions ($MTCO_2e$)

APPENDIX D:
CITY COUNCIL RESOLUTION ADOPTING THE CAP

RESOLUTION NO. 8252

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MILPITAS ADOPTING NEGATIVE DECLARATION AND CLIMATE ACTION PLAN

WHEREAS, on February 15, 2011, the Climate Action Plan (CAP) project was initiated to streamline environmental review of future development projects in the City of Milpitas consistent with the California Environmental Quality Act (CEQA) Guidelines Section 15183.5(b) and the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines. The CAP identifies a strategy, reduction measures, and implementation strategies the City will use to achieve the State-recommended greenhouse gas (GHG) emissions reduction target of 15% below 2005 emissions levels by 2020; and

WHEREAS, on March 20, 2013, the Planning Commission held a study session on the subject application, and considered evidence presented by City staff and other interested parties; and

WHEREAS, on April 10, 2013 the Planning Commission held a duly noticed public hearing on the Project at which time the Commission considered a written staff report as to the proposed application and its conformity with the requirements of Milpitas Municipal Code, the Negative Declaration, written and oral comments on the Negative Declaration and Climate Action Plan, and all other oral and written comments presented to it. Based on this evidence, the Planning Commission recommended that the City Council adopt the Climate Action Plan, adopt the proposed General Plan Text Amendments (GP13-0002), and adopt the Negative Declaration (Resolution No. 13-014); and

WHEREAS, the Planning Division completed an environmental assessment for the project in accordance with the California Environmental Quality Act (CEQA), and the Planning Commission recommended that they City Council adopt the Negative Declaration; and

WHEREAS, consistent with the CAP, a General Plan Text Amendment is proposed, however, since there are limitations on the number of times any single element of the General Plan can be amended, these amendments will be presented for adoption at a later date, coupled with another General Plan amendment effort; and

WHEREAS, on May 7, 2013, the City Council held a duly noticed public hearing to consider adoption of the Negative Declaration, and approval of the Project.

NOW, THEREFORE, the City Council of the City of Milpitas hereby finds, determines, and resolves as follows:

1. The City Council has considered the full record before it, which may include but is not limited to such things as the staff report, testimony by staff and the public, and other materials and evidence submitted or provided to it. Furthermore, the recitals set forth above are found to be true and correct and are incorporated herein by reference.

2. The City Council further determines, finds and certifies as follows:

   A. Regarding the Project:

      i. The proposed project is consistent with the General Plan in that the Climate Action Plan supports the policies of the General Plan.

ii. The proposed project will not adversely affect the public health, safety, and welfare in that the Climate Action Plan is a strategic document that proposes reduction of greenhouse gas emissions.

B. Regarding the Negative Declaration:

i. On the basis of the whole record before it, there is no substantial evidence that the project will have a significant effect on the environment.

ii. The negative declaration reflects the lead agency's independent judgment and analysis.

iii. The custodian of the documents and other materials which constitute the record of proceedings for the Project is the City of Milpitas Planning Division located at City Hall, 455 East Calaveras Boulevard, Milpitas, California 95035.

3. The City Council hereby approves and adopts the Climate Action Plan with Negative Declaration.

PASSED AND ADOPTED this 7th day of May 2013, by the following vote:

AYES:	(5)	Mayor Esteves, Vice Mayor Polanski, Councilmembers Giordano, Gomez, and Montano
NOES:	(0)	None
ABSENT:	(0)	None
ABSTAIN:	(0)	None

ATTEST:

Mary Lavelle, City Clerk

APPROVED:

Jose S. Esteves, Mayor

APPROVED AS TO FORM:

Michael J. Ogaz, City Attorney


CITY OF MILPITAS
CALIFORNIA
INCORPORATED
JANUARY 26, 1954