Section 01
Introduction

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GHG Emissions

generated community-wide in Albert Lea

52,415
Metric tons CO2e in 2019 from vehicle use.

249,542
Metric tons CO2e in 2019 from building energy.

4,201
Metric tons CO2e in 2019 from solid waste

520
Metric tons CO2e in 2019 from water and wastewater

Introduction

Albert Lea, Minnesota, a City of 17,770 people, is located on the crossroads of interstates 35 and 90. The city benefits from a diverse economic base, ranging from health care, education, manufacturing (primarily food related), and financial, to unique design and boutique-type businesses. Its natural beauty, seven lakes and bays, offer a unique environment for its residents and visitors.

Albert Lea's major assets are its lakes. In the center of town is Fountain Lake. This is a recreational lake, known for boating, fishing, water skiing, and paddle boarding. It also has a walking path around its perimeter. In the city and connected by a channel to Fountain Lake is Albert Lea Lake. This large natural lake is primarily used for canoeing, kayaking, and fishing. It is bordered by Myre Big Island State Park which features a natural oak savanna landscape. This State Park is known for its wildlife with 234 different kinds of birds.

The City has been dedicated sustainability issues for many years, and its focus on these topics has become increasingly strong in recent years. In 2017, Albert Lea achieved "Step 3" in the GreenStep Cities program. Minnesota GreenStep Cities is a voluntary challenge, assistance and recognition program to help cities achieve their sustainability and quality-of-life goals.

In 2017, the City of Albert Lea was selected by the State of Minnesota to receive technical assistance in developing a Climate Vulnerability Assessment. The assessment was completed by paleBLUEdot in January 2018. In 2019, supported through a second grant by the State of Minnesota, the City of Albert Lea engaged paleBLUEdot for the development of a Climate Action Plan outlining strategies and actions to support achieving increased climate resilience as well as reductions in City of Albert Lea City-Wide emissions. This report plan is the result, developed in collaboration with the City's Climate Action Planning Team.

Why Create a Climate Action Plan

The creation and dedicated implementation of a Climate Action Plan (CAP) is an organized way for a City to contribute to solving the global climate crisis while helping its resident and business communities create improved resilience to the current and future impacts and risks of climate change. Climate action can also create investment in innovation, jobs and actions that save households and businesses money.

What is a Climate Action Plan (CAP)

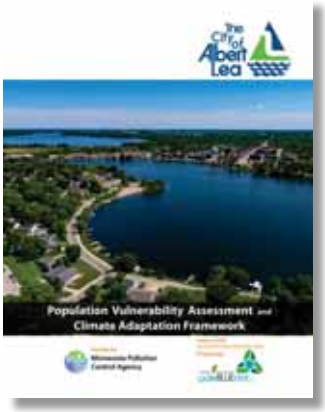
Climate action plans are comprehensive road maps that outline the specific Strategies and Actions that a City will implement to reduce greenhouse gas emissions and build resilience to related climatic impacts. The Albert Lea CAP addresses both climate mitigation and climate adaptation actions.

The Role of Communities in Climate Action

With a large majority of Americans living in urban areas, communities play a key role in addressing climate change. While each individual community's impact on global GHG emissions is relatively small, the leadership municipalities provide in motivating change can be extremely significant. According to a survey by the US Conference of Mayors, more than half (53%) had committed to reducing greenhouse gas emissions.

Building on Past Work

This Climate Action Plan builds on past projects and planning efforts of the City of Albert Lea, including the City's Climate Vulnerability Assessment and Renewable Energy Potentials Study



Introduction

Climate Action as a Journey

The Climate Action Plan represents a robust vision of the future with a comprehensive scope of actions befitting the magnitude of our collective climate challenge ahead. This Climate Action Plan establishes a long-term climate resilience vision and mitigation goal for the community. The plan itself, its strategies, and detailed actions, are intended as a 9 year plan. It is anticipated that this plan would be updated by 2030 to outline the next phase of action towards achieving the long-term community-wide goals.

The Albert Lea Climate Action Plan should be seen as a living document. Action progress and effectiveness should be reviewed at regular intervals through the plan's implementation and adjustments should be made to expand or modify the scope of individual actions and to augment the plan with new actions as appropriate to respond to ever-changing market and community conditions.

Benefits of Climate Action

The strategies and actions contained in this plan seek to reduce Albert Lea's dependence on fossil fuels, prioritize sustainable uses of land and water, reduce waste, and support improved equity and livability. The actions outlined in this plan will reduce Albert Lea's GHG emissions. In addition to reducing the community's contribution to climate change this plan strives to identify how climate change will increasingly impact the community. The Climate Action Plan addresses next steps for Albert Lea to adequately respond to climate change. If implemented successfully the plan will enhance Albert Lea's economic vitality, resilience, and viability as a healthy, livable community.

Introduction

Albert Lea's Vulnerability to Climate Risks:

Climate change is a global phenomenon that creates local impacts. It presents one of the most profound challenges of our time. A broad international consensus exists among atmospheric scientists that the Earth's climate system is being destabilized in response to elevated levels of greenhouse gas emissions in the atmosphere.

Two changes to Minnesota's climate are occurring already: shorter winters with fewer cold extremes, and more heavy and extreme precipitation. Increases in the global surface temperature and changes in precipitation levels and patterns are expected to continue and intensify for decades. In turn, these changes in climate have impacts on the economy and health of local communities.

The following highlight the vulnerabilities to climate risks facing Albert Lea, excerpted from the 2018 Albert Lea Climate Vulnerability Assessment:

Heat Stress
(High)

Warmer temperatures and more extreme heat may lead to higher risk of heat-related illness.

Air Quality
(High)

Increased heat may result in more days of poor air quality and exposure to allergens, impacting respiratory illnesses.

Vector-Borne Disease
(Medium—Low)

Longer growing seasons and higher temperatures may increase vector-borne diseases like West Nile Virus and Lyme disease.

Mental Health
(Medium)

Exposure to increased climate impacts and disasters may lead to increased anxiety and other mental health ramifications.

Housing
(High)

Warmer temperatures will increase demand for air conditioning and weatherization needs. Energy costs may be difficult for vulnerable populations to meet. Heavier rains coupled with higher risk of surface drought conditions may cause more local flooding, particularly "flash flooding" which could cause damage to housing and reduce mobility for portions of the community.

Stormwater Management
(High)

Heavier rains coupled with higher risk of surface drought conditions may significantly increase demand on stormwater management. The City's stormwater infrastructure may not be capable of handling the amount of runoff during more frequent heavy down pours, requiring resources to make needed upgrades.

Trees, Greenspace, and Agriculture
(Medium)

Increased temperatures and changes to precipitation will stress trees, greenspace, and agriculture. Conditions may be more favorable for disease, pests, and invasive species. Trees and crop species which formerly thrived in the area's climate may be less suited for future climate conditions.

Surface Water Quality
(Low)

Increases to heavy rain events and flooding/flash flooding risk may negatively impact water quality in the City's lakes, streams, and rivers. Increased pollutants and contamination potential, combined with increased annual water temperatures could increase risk to algal and bacterial growth, harming habitats and limiting recreation.

Introduction

What Are GHG's?

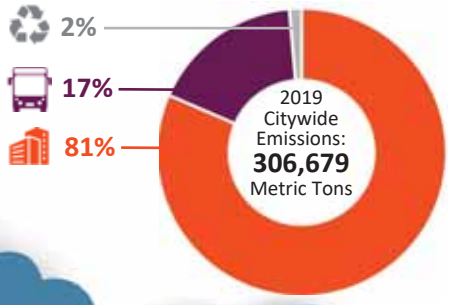
A greenhouse gas is a molecule in the atmosphere which does not react to light energy in the visible range (like sunlight), but does react to light energy in the infrared range -like that which is emitted from the Earth after being warmed by the sun. The most common greenhouse gases include carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O).

Why do GHG's Matter?

GHG's let the sun's light shine onto the Earth's surface, but they trap the heat that reflects back up into the atmosphere. In this way, they act like the insulating glass walls of a greenhouse. The more GHGs there are, the more heat that is trapped in our atmosphere and the more we experience the impacts of global warming.

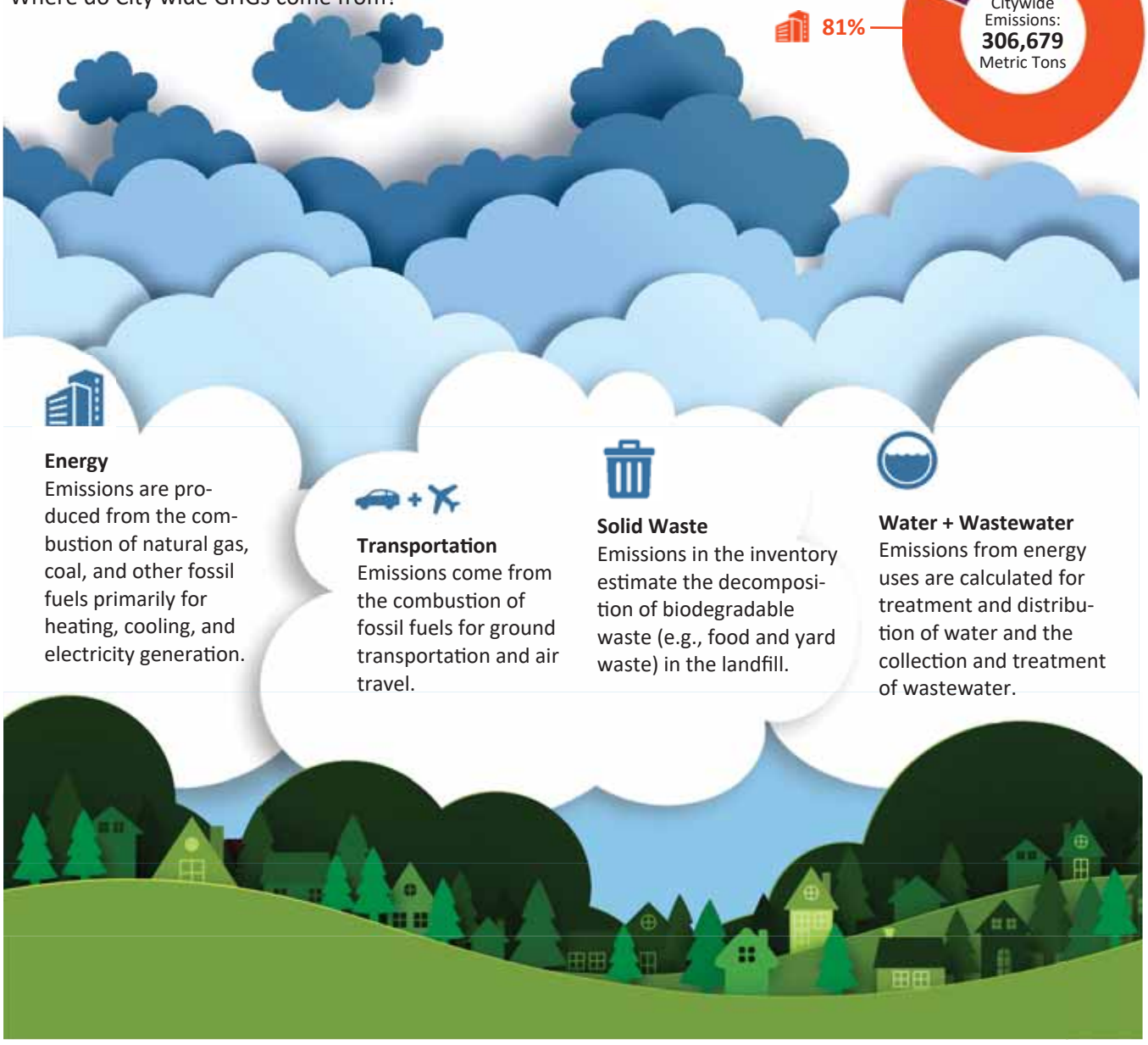
City of Albert Lea GHG Emissions

The City of Albert Lea's community-wide emissions for 2019 totaled 306,679 metric tons. Of that, 249,542 metric tons were from the buildings and energy sector, 52,415 metric tons were from the transportation sector, 4,201 metric tons were generated from solid waste, and 520 metric tons came from water and wastewater generation.



Key Greenhouse Gas Sectors

Where do City wide GHGs come from?



Energy
Emissions are produced from the combustion of natural gas, coal, and other fossil fuels primarily for heating, cooling, and electricity generation.

Transportation
Emissions come from the combustion of fossil fuels for ground transportation and air travel.

Solid Waste
Emissions in the inventory estimate the decomposition of biodegradable waste (e.g., food and yard waste) in the landfill.

Water + Wastewater
Emissions from energy uses are calculated for treatment and distribution of water and the collection and treatment of wastewater.

Introduction

GHG Emission Reduction Goal in State Context

The State of Minnesota has established state-wide greenhouse gas (GHG) reduction goals through 2050. Using a baseline year of 2005, the State's goals are to reduce total emissions by 80% by 2050 with a benchmark reduction of 30% by 2025. Through 2018, state-wide emissions have been reduced by 8%

Our Climate Goals

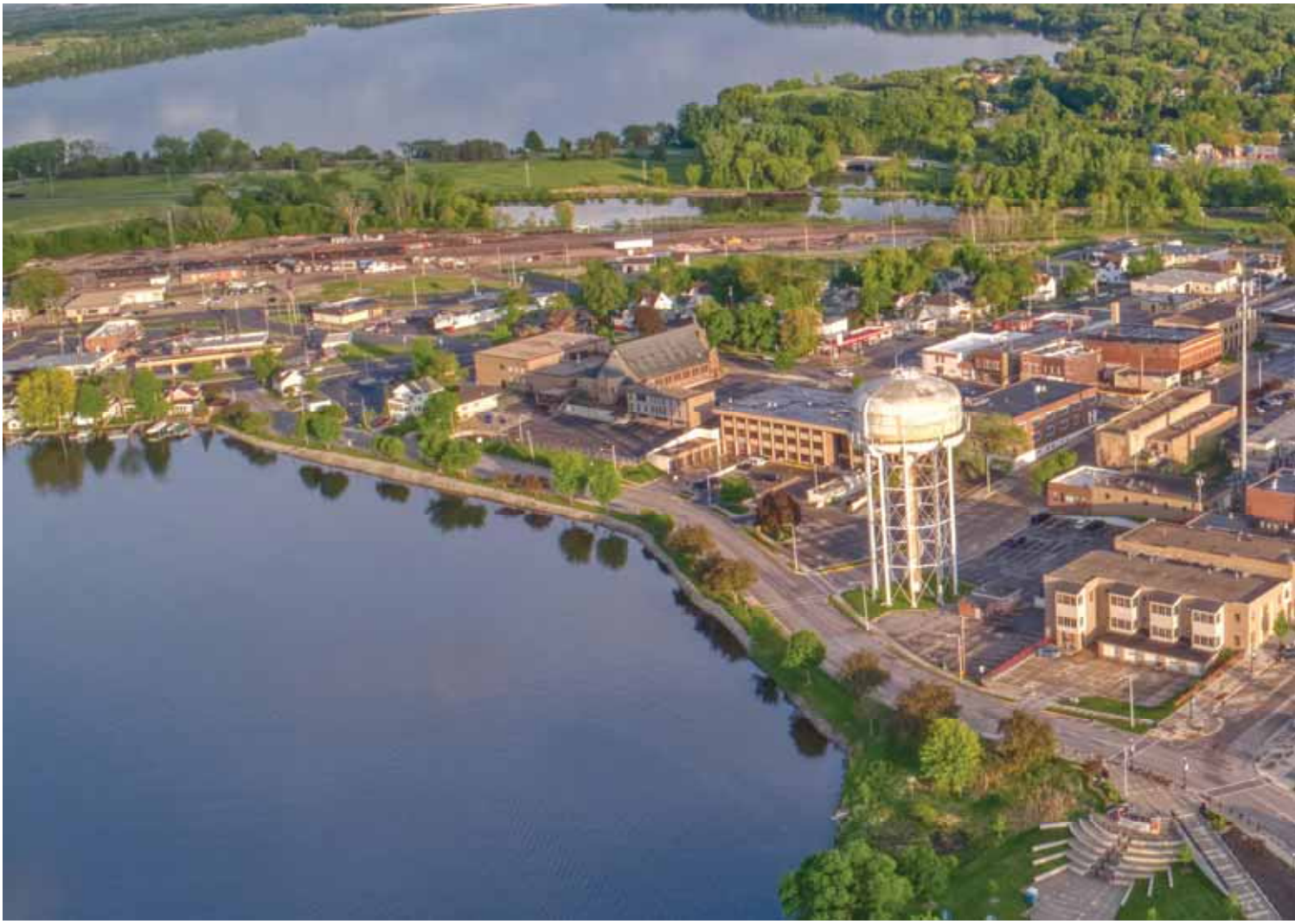
This Climate Action Plan includes a Climate Resilience Vision as well as a GHG reduction goal. These goals are designed to support and relate to the overall State of Minnesota goals and fit with current science based recommendations:

Albert Lea Climate Resilience Vision

To become a climate resilient community, making the social and economic transitions necessary to reduce city-wide greenhouse gas emissions while protecting Albert Lea's natural ecosystems, most vulnerable populations, and economic vitality against the increasing impacts of climate change.

Albert Lea GHG Reduction Goal

The City of Albert Lea's GHG emission reduction goals are to be compatible with the State of Minnesota GHG Emissions goals and shall target a reduction in City operations and community-wide emissions of 25% below 2019 levels by 2030 and 80% below 2019 levels by 2050.



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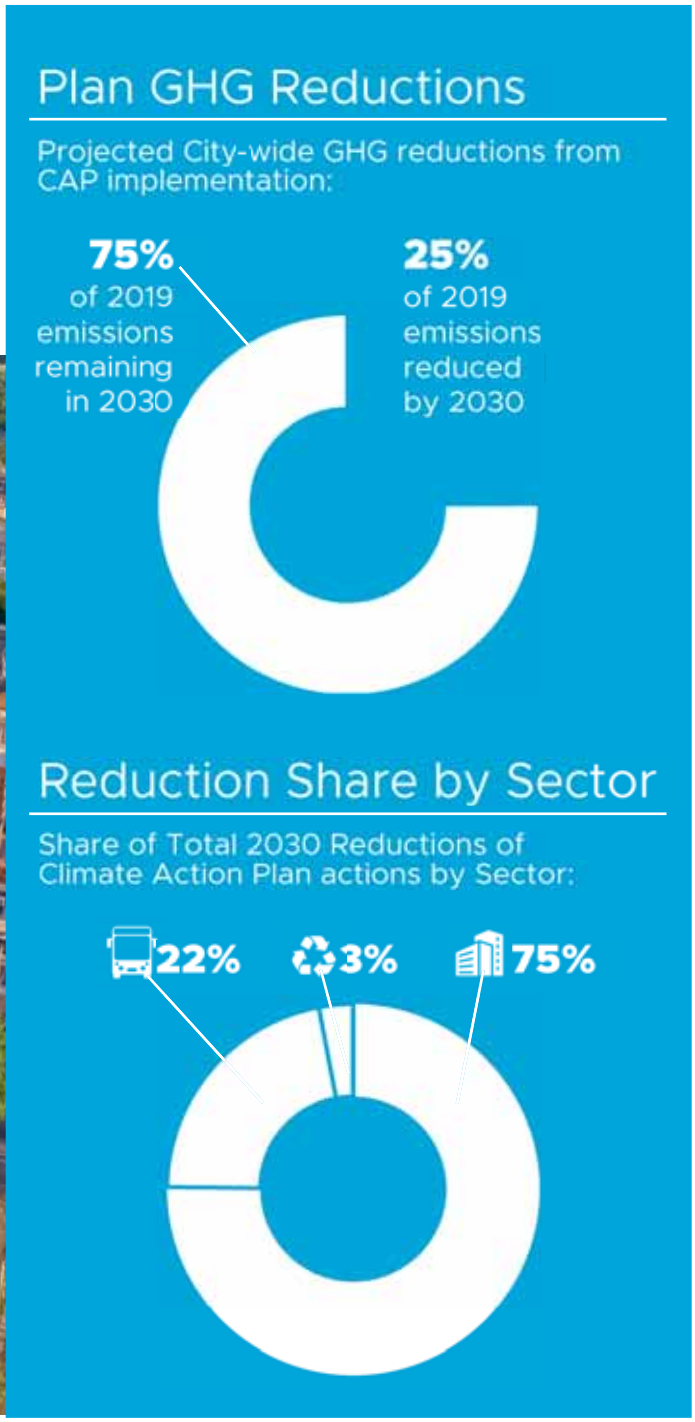
Estimated City Wide GHG Reductions Included in This Plan

Long-term emission reduction potentials of the strategies and actions included in this plan have been modeled based on projected energy and fuel reductions and adoption rates of renewable energy and low/no emission transportation modes outlined in the strategies and actions. From this modeling, we know that with the successful implementation of this climate action plan, by 2030 City wide annual GHG emissions are projected to be 76,348 metric tons below 2019 levels. The potential cumulative GHG emissions reductions over the 9 year implementation period are estimated at over 350,000 metric tons - an elimination of over **6.9 billion cubic feet** of man made greenhouse gas atmosphere resulting from this climate action plan.



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The Process

The plan was developed in collaboration with an 18 person planning team of community members, business community members, non-profit organizations, Freeborn County, and City of Albert Lea staff. The planning team was organized into sub-teams aligned with each of the community-wide climate action sectors included in this plan (see Plan Framework). The plan was developed through a number of planning workshops from January 2021 through May 2021.

Development and implementation of the Albert Lea Climate Action Plan are opportunities for the City of Albert Lea government and partners in the community to research and articulate some of Albert Lea's most pressing resilience challenges; identify specific, multi-benefit actions that contribute to solutions to those challenges; and secure additional resources, technical assistance, and partnerships to accelerate next steps.

The goals and actions identified in the Climate Action Plan are grounded in community input, expert analysis, and best practices from other cities throughout the United States. Strategic goals and detailed actions were developed by the Planning Team through a series of workshop meetings. A preliminary draft of actions were reviewed against action screening criteria which enabled the Planning Team to evaluate, refine, finalize, and prioritize the actions to be incorporated in the final Climate Action Plan.

Albert Lea Action Screening Criteria

Support: How likely is the proposal to be adopted by the City or community-wide? Is it politically feasible? Is there community support? If funding is needed can/will it be made available?

Potential for Success: Do these strategies have a track record for success locally or in other communities?

Co-Benefits: Does the action address multiple goals, or other City or community objectives ? Does the strategy address needs in resilience, public health/quality of life, economic prosperity, triple bottom line, stewardship, and/or innovation?

Climate Action Plan Framework

This Climate Action Plan includes an implementation framework designed to achieve community-wide goals for greenhouse gas reduction and climate adaptation and resilience. The plan is organized around a unifying framework organized by sector as illustrated to on the following page. Each sector has over-arching Strategies established to meet 2030 goals and detailed Actions for implementation. Sector actions include a focus on Climate Mitigation, Climate Adaptation, or both.

Climate Mitigation: addresses the root causes of climate change through the reduction or prevention of greenhouse gas (GHG) emissions. Sectors with this as a significant focus are shown to the right with this symbol:

Climate Adaptation: seeks to lower the risks posed by the impacts of climate change which are now inevitable or likely. Sectors with this as a significant focus are shown to the right with this symbol:

Introduction

Climate Action Plan Framework

Emissions associated with all electricity and natural gas consumption within the City. Approaches to this sector area include improved energy efficiency and resilience.

Emissions from on-road vehicle traffic occurring in the community. Approaches to this sector area include reductions in vehicle miles traveled as well as shifts to public transit and alternative

All solid waste generated by residents and businesses within the community and their associated emissions. Approaches in this sector focus on diversion of food, consumer, and construction waste.

All potable water, wastewater collection and treatment, flood mitigation, and surface water health. Approaches to this sector focus on water conservation, wastewater reduction, flood mitigation, and stormwater management.

Food cultivation and distribution, nutrition insecurity, and food waste. Approaches to this sector include reduction of food waste, food system resilience, strengthening of local food production, and equitable access to healthy food.

Resilience of urban tree canopy, ground cover, greenspace, parks, and ecosystems. Focus includes expansion of tree canopy coverage, improvement of beneficial use of lawn areas, and mitigation of heat island impacts.

Community health impacts and resilience in the face of current and projected climate impacts & risks. approaches in this sector focus on community resilience and connections.

Economic development, jobs, and business creation potential represented by the actions and goals of all sectors in this Climate Action Plan. Approaches include workforce and economic development, and resilience of businesses.