# The City of White Plains

## Local Government Operations Climate Action Plan

**ADOPTED JULY 1, 2024**

**Produced by the City of White Plains**
**Office of the Mayor**
With Assistance from ICLEI – Local Governments for Sustainability USA and the Hudson Valley Regional Council

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# Executive Summary

The City of White Plains is committed to protecting and preserving its natural resources and has established itself as a leader in supporting clean energy and other climate change mitigation measures. It is vital that the City continue to respond to climate change and promote sustainability through the lens of both mitigation and adaptation. This recognition is reflected within the City's One White Plains Comprehensive Plan and addressed in the greenWP section of the plan. This plan itself responds to an initiative within the Comprehensive Plan (greenWP15).

Studies from the International Panel on Climate Change (IPCC), Environmental Protection Agency (EPA), New York State Department of Environmental Conservation (NYSDEC), and other organizations around the world have demonstrated that we are facing climate challenges. The City of White Plains believes that it is our responsibility to act now so that we can leave behind a brighter future for our children.

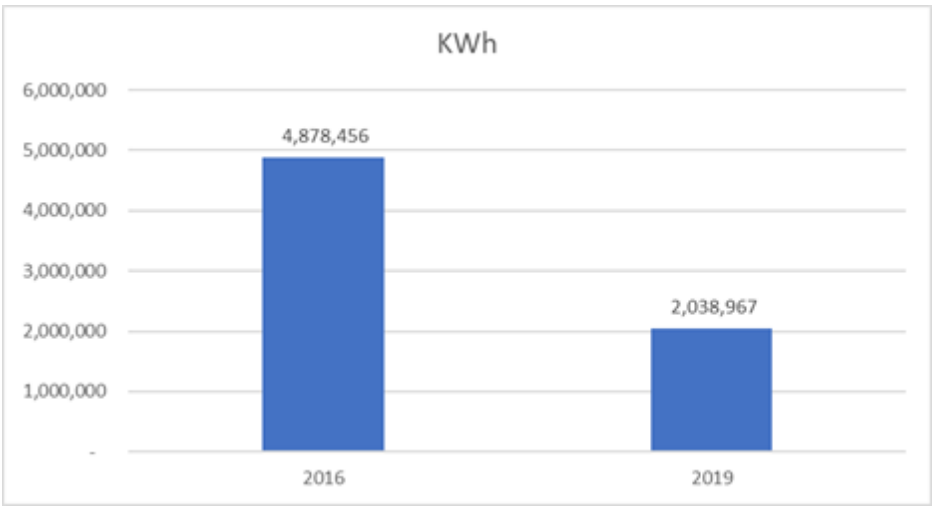
Inadequate action may lead to a future that is less prosperous and less safe for subsequent generations. But we have an opportunity to act, both to reduce our contribution to climate change, as well as to protect our community by adapting to impacts that will continue to affect White Plains in the future. Actions to mitigate our contribution to climate change must come from all levels— from nations and large corporations, but also from small and medium sized cities like White Plains. The City of White Plains has already taken a leadership role, both locally and regionally, to mitigate impacts on the climate and adapt to climate changes. The Mayor, Common Council, City departments, and the Sustainable White Plains Committee have all prioritized sustainability initiatives, which have led to significant strides in recent years:

- The City is a municipal member of the New York State Energy Improvement Corporation (EIC).
- The City has converted all streetlights to LEDs.
- White Plains was designated as a NYSERDA Clean Energy Community in 2017.
- The White Plains Community Solar Project, started in 2019, is a groundbreaking project that received the 2021 Mayors Climate Protection Award.
- As of April 2023, the City was officially certified as a Bronze Level Climate Smart Community.
- In April 2023, Governor Hochul announced that White Plains was one of the first three communities to become a member of the Green Purchasing Communities Program.

This document outlines the City's opportunities to continue to meet climate challenges within the purview of government operations. This plan corresponds with the greenWP section of the One White Plains Comprehensive Plan. The City of White Plains believes that it is the City's responsibility to mitigate government operations' role in contributing to climate change. Given that the climate is already changing, the City needs to adapt to those changes so that our government operations remain resilient in the future.

**City of White Plains Local Government Operations Climate Action Plan Vision Statement**: The City of White Plains mitigates negative climate impacts resulting from municipal operations, and promotes adaptation to the changing climate while advancing equity and economic development goals.

One example of this vision in action is illustrated through the City's initiative to install 100% LED streetlights. The data from before and after this changeover note significant decreases in kilowatt hours used as well as significant cost savings to the City. See charts below. It is this sort of positive action that this plan seeks to highlight.



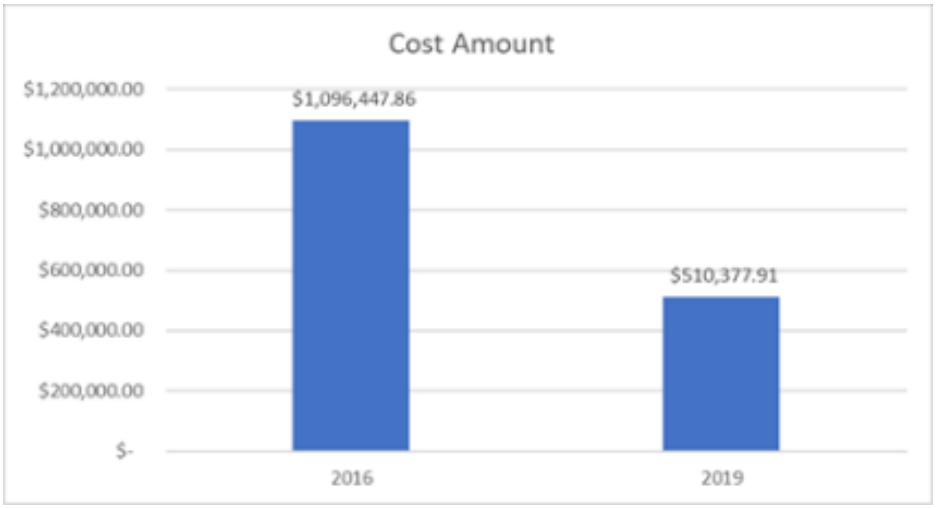




**Figure 1:** White Plains 2019 Local Government LED Cost Savings

In 2023, the City of White Plains participated in a regional Climate Action Planning Institute led by the Hudson Valley Regional Council and ICLEI–Local Governments for Sustainability USA (ICLEI USA). The process led to the completion of a Local Government Operations Greenhouse Gas Emissions Inventory (see Appendix 1).

The results of the Local Government Operations Greenhouse Gas Emissions Inventory documented that for the baseline year of 2019, City operations resulted in a total of 7,071 Metric Tons of CO2e. The largest contributing sectors were Buildings and Facilities and Vehicle Fleet, each responsible for 38% of the emissions due to government operations.

Projections show that if the City continues with business as usual, greenhouse gas emissions from local governmental operations will remain basically unchanged. Projections also demonstrate that if the City implements certain high impact actions, such as fleet and building electrification, the City could achieve significant progress towards mitigating the impact of government operations on climate change.

White Plains has chosen to align its reduction goals with statewide goals. The Climate Leadership and Community Protection Act (CLCPA), signed into law on July 18, 2019, sets goals to reduce emissions to 40% below 1990 levels by 2030 and then to 85% below 1990 levels by 2050.

According to the 2022 Statewide GHG Emissions Report, NY has already reduced emissions by 7% from 1990 levels, so the City is setting its 2030 goal at 33% and its 2050 goal at 78%.

Please note that the City may have exceeded this 7% reduction due to early adoption of climate smart actions such as switching to all LED street lights prior to the inventory baseline of 2019.

To reach these goals, the City will implement initiatives of the Comprehensive Plan, noted below:

a. Further enhance the energy efficiency of municipal buildings (greenWP16)
b. Electrify the vehicle fleet
c. Evaluate opportunities to expand municipal renewable energy projects (greenWP10)
d. Increase recycling education and efforts
e. Retrofit existing buildings to adapt to impacts of climate change (greenWP25)
f. Create an open space and natural resources inventory (greenWP1)
g. Assess opportunities to improve natural open spaces (greenWP6)
h. Address urban heat by creating a greener white plains (greenWP24)
i. Update heating and cooling center plans and inform the public
j. Maintain City infrastructure to support EV charging and alternative forms of transportation (greewnWP19 and connectWP8)
k. Encourage / educate employees to use alternative forms of transportation to commute to work.

# Introduction

The City of White Plains is committed to protecting and preserving its natural resources and has established itself as a leader in supporting clean energy and other climate change mitigation measures. It is vital that the City continue to respond to climate change and promote sustainability through the lens of both mitigation and adaptation. Within the One White Plains Comprehensive Plan, greenWP highlights the City's ongoing leadership and future plans related to principles of sustainability, including preservation of environmental resources, climate change mitigation, and climate change adaptation.

Scientists do expect that with the current trends in greenhouse gas (GHG) emissions, Americans will experience more intense heat waves, droughts, rainstorms, floods, wildfires and landslides in the future. These impacts will have significant repercussions on our economy, stress our natural resources and worsen inequities facing many Americans and millions of people across the globe. Action is required at all levels, and local governments have a unique role to play in building low-carbon communities.

The impacts of climate change are caused by the accumulation of GHGs such as carbon dioxide (CO2) and methane (CH4) in the atmosphere, primarily resulting from burning fossil fuels and land use changes. Although the natural greenhouse effect is needed to keep the earth warm, human activities have created an enhanced greenhouse effect due to the rapid accumulation of GHGs in the atmosphere. Unprecedented concentrations of these gases in the atmosphere has led to too much heat and radiation being trapped on Earth.

Carbon emissions from human activities have soared in recent decades and are currently at the highest rates in human history. About half of all carbon dioxide emitted between 1750 and 2010 occurred in the last 40 years. The energy, industry and transportation sectors have dominated these emissions increases. With the current trajectory of population growth, urbanization, and reliance on personal vehicles, global transportation emissions are expected to double by 2050. Given the serious impacts of climate change on humanity, the time to act to reduce GHG and our carbon footprint is now. While there is a great need for community-wide climate action plans, addressing emissions from local government operations and leading by example is critical.

# Purpose, Scope, & Process Behind the Climate Action Plan

The 2014 Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5), written by a panel of hundreds of climate experts and scientists and approved by a team of external reviewers, states unambiguously that anthropogenic or "man-made" GHG emissions are causing global climate change. For this reason, White Plains is joining an increasing number of local governments committed to addressing climate change at the local level through reducing emissions in their own government operations and by supporting programs such as Climate Smart Communities.

The City of White Plains recognizes the risk that climate change poses to its constituents, and is acting now to reduce the GHG emissions, or "carbon footprint," of its government operations through the programs laid out in this Climate Action Plan. Furthermore, it is recognized that White Plains needs to address existing climate risks, such as flooding, and adapt its systems and infrastructure to new conditions. This Climate Action Plan takes advantage of common-sense approaches and policies that our local government is uniquely positioned to implement – actions that can reduce energy use, waste, and fuel use for White Plains' vehicle fleet and building operations.

## Purpose

This Climate Action Plan drives and coordinates efforts toward to emissions reductions of 33% below 1990 levels by 2030 and then to 78% below 1990 levels by 2050.

The Climate Action Plan is a framework for the development and implementation of actions that reduce White Plains' government operations GHG emissions. The Plan provides guiding objectives and strategies to realize White Plains' government operations GHG reduction goals.

## Scope

This Plan covers objectives and strategies for reducing GHG emissions resulting from local government operations within White Plains. It addresses the major sources of emissions in the City's infrastructure and operations and sets forth objectives and strategies in five focus areas that White Plains can implement to achieve greenhouse gas reductions: building and facilities; the vehicle fleet; renewable energy; recycling; and employee commute.

The Plan creates a framework to document, coordinate, measure, and adapt efforts moving forward. In addition to listing actions, the Plan discusses how each action will be implemented via timelines, and assignment of responsibilities to departments, staff, or other partner agencies where known.

# Process

In February 2023, the City of White Plains began participation in the Westchester Climate Action Planning Institute (CAPI) The process was led by the Hudson Valley Regional Council in partnership with ICLEI (International Council for Local Environmental Initiatives).

The City of White Plains CAPI effort was led by Mayor Roach with a CAPI team that team included the City's Climate Smart Community Coordinator and the Planning Department with participation as needed from other City departments.

The process began with a local governmental operations greenhouse gas inventory (LGOGHGI) (see Appendix One). The results of the LGOGHGI indicated that the two sectors that contribute the most to greenhouse gas emissions are Buildings and Facilities and Vehicle Fleets.

Contemporaneously with the LGOGHGI, the City was drafting the One White Plains Comprehensive Plan, including significant community input and meetings. As part of the Comprehensive Plan development, the City engaged the services of the environmental consulting firm, Ramboll. Ramboll used the information gained from these community outreach efforts as well as a comprehensive review of existing conditions in White Plains and an exhaustive consideration of current data to write the greenWP element of the Comprehensive Plan. This element, along with the LGOGHGI, serves as the basis for this plan.

Community outreach has included social media, online surveys, a Listening Tour, virtual and in-person community workshops and events, tabling at Farmers Markets, and public hearings. Internal engagement and input efforts include CAPI cohort meetings and ongoing meetings and consultations with City departments including the Mayor's Office, Planning Department, Building Department, Department of Public Works, and Recreation and Parks Department.

# Vision Statements and Objectives

City of White Plains Local Government Operations Climate Action Plan Vision Statement: The City of White Plains' municipal operations mitigate negative climate impacts and promote adaptation to the changing climate while advancing equity and economic development goals.

The City of White Plains has chosen to align its reduction goals with statewide goals. The Climate Leadership and Community Protection Act (CLCPA), signed into law on July 18, 2019, sets goals to reduce emissions to 40% below 1990 levels by 2030 and then to 85% below 1990 levels by 2050.

According to the 2022 Statewide GHG Emissions Report, NY has already reduced emissions by 7% from 1990 levels, so the City is setting its 2030 goal at 33% and its 2050 goal at 78%.

Please note that the City may have exceeded this 7% reduction due to early adoption of climate smart actions such as switching to all LED street lights prior to the inventory baseline of 2019.

The City of White Plains has established the following overall reduction goals are based on a baseline year of 2019:

## 2030

1. CLCPA greenhouse gas reduction goal – 33% below 1990 levels
2. Buildings electrification target – 30% building HVAC electrification
3. EV adoption target – 40% EV Municipal Fleet

## 2050

1. CLCPA greenhouse gas reduction goal – 78% below 1990 levels

2. EV adoption target - 75% EV Municipal Fleet
3. Building electrification target – 50% building HVAC electrification
4. Employee commute target – 50% increase in EV adoption or alternative commute

To reach these targets, the City will implement the following initiatives, many of which are included in the City's One White Plains Comprehensive Plan in the greenWP element as noted below.

1. Mitigation Initiatives
    a. Further Enhance the Energy Efficiency of Municipal Buildings (greenWP16)
        i. Increase municipal buildings enrolled in demand response
        ii. Pursue a Comprehensive Building Electrification pilot program for existing buildings (greenWP22). Upgrade HVAC equipment (convert to heat pumps) as heating/cooling systems reach the end of their useful life and/or as energy audits indicate need.
        iii. Install LED lighting in parking garages
    b. Electrify the Vehicle Fleet
        i. Purchase EVs as City vehicles reach the end of their useful life
        ii. Adopt a green fleet policy
        iii. Continue to invest in electric vehicle charging station infrastructure (greenWP19)
    c. Evaluate opportunities to expand municipal renewable energy projects (greenWP10)
        i. Explore floating solar
        ii. Explore solar panels on municipal buildings
    d. Increase recycling education and efforts
        i. Recycling program/educate staff
        ii. Purchase recycled paper policy
    e. Reduce GHG emissions from employee commute
        i. Encourage/educate employees about switching to personal electric vehicles from gasoline/diesel vehicles and/or using alternative forms of transportation to commute to and from work (public transportation, cycling, etc.)
        ii. Maintain City infrastructure to support EV charging and alternative forms of transportation (greewnWP19 and connectWP8)
2. Adaptation Initiatives
    a. Retrofit existing buildings to be more adaptive to impacts of climate change (greenWP25)
        i. Explore funding for retrofits such as shading, ventilation, green or white roofs, insulation
    b. Create an open space and natural resources inventory (greenWP1)
    c. Assess opportunities to improve natural open spaces (greenWP6)
    d. Address urban heat by creating a greener White Plains (greenWP24)
    e. Update Heating and Cooling Center plans and inform the public

Each strategy and objective was created and reviewed through an internal engagement and input process where participants considered technology limitations, funding constraints, the feasibility of implementation, environmental justice considerations, and other barriers.

# Local and Regional Climate Context

## Climate Impacts

In order to plan for climate change, White Plains first must understand the changes the City is likely to experience. Over the more recent years, we have experienced firsthand, the rising temperatures and heat that occur during the summer months. Annual temperatures in New York State have increased by about 0.6°F per decade since 1970, which is projected to rise by 4.1°F to 6.1°F by 2080.). In White Plains, the projected annual average temperature is expected to rise 4.5°F to 6.2°F above the current average temperature.

Extreme temperatures are also expected to increase. Extreme heat days are defined as those with maximum temperatures above 90°F. Heat waves are defined as periods of three or more consecutive days with maximum temperatures above 90°F. The frequency of heat waves has increased in New York State since the 1960s. In White Plains, there may be as many as 27 – 41 additional extreme heat days by 2050. In addition, winter temperatures are projected to rise, with some 60 degree days in December.

In the coming decades, the changing climate is likely to increase coastal and inland flooding, disrupt farming and winter recreation, and increase some risks to human health. According to an analysis by the New York State Department of Environmental Conservation (NYS DEC), some of the climate hazards projected to impact communities like White Plains include increased frequency of high-intensity storms, increase in average annual precipitation, increase in average annual temperatures, and increase in extreme heat events. In the case of White Plains, sea level rise is not a significant issue because White Plains is landlocked by other municipalities. However, White Plains is close to both the Hudson River and the Long Island Sound, and will feel the indirect effects of sea level rise that the neighboring municipalities face directly.

“Cloudburst” events, defined as a sudden, extreme downpour in a short period of time, have become more frequent throughout the United States and the northeast. Cloudburst events can be unpredictable, dropping substantial amounts of rainwater, in excess of the rain events for which municipal storm sewers were designed. As a result, flooding occurs in neighborhoods that may not be in designated FEMA floodplains, which regularly experience flooding events.

One recent example of a cloudburst event that impacted White Plains and the broader region was Tropical Depression Ida. Ida set precipitation records throughout the region, dropping 3.15” of rain in Central Park within one hour. In White Plains, Ida caused flash flooding in the following areas:

- The Bronx River Parkway
- Land adjacent to both the White Plains and North White Plains Metro-North train stations
- Cloverdale Avenue
- Rosedale Avenue
- Areas around Prospect Avenue and Livingston Avenue

# Co-Benefits of Climate Protection Measures

## 1. Saving Money

In addition to addressing climate change, measures taken to reduce GHG emissions have other important benefits, such as the potential for significant cost savings. Climate protection measures, such as LED lights, can produce significant cost savings for the City in addition to reducing GHG emissions. (see Figure 1 on page 8)

Many of the measures in this plan pay for themselves quickly by reducing direct costs, such as fuel or energy used, as well as indirect costs such as maintenance.

Improving energy efficiency, encouraging public transit use, installing on-site renewables, and other measures may also result in lower energy and water bills for the City. Acting now will also save on runaway costs on climate change, especially in the longer term, such as from infrastructure damage from more frequent and extreme storms. Saving money on bills leaves more money for other things that can benefit the City as a whole.

## 2. Enhancing Resource Security

A key strategic side benefit of climate change mitigation activities is enhanced energy security through reduction in total demand. This will put less strain on the energy system as a whole as we transition to clean renewable energy. Many of the actions identified here to mitigate GHG emissions will also help the City's government adapt to a changing climate. For example, extreme and prolonged heat waves can put considerable strain on the reliability of energy delivery in peak periods, possibly leading to service disruption during times when cooling is most needed. By increasing efficiency across White Plains facilities, such service disruptions are less likely and the City will be able to better cope with those situations.

## 3. Creating Jobs

The renewable energy industry has become a leading sector in job growth. In 2018, clean energy employment rose 3.6%, and the U.S. Bureau of Labor Statistics expects solar installers and wind technicians to be the two fastest-growing jobs through 2026. Energy efficiency jobs are also growing rapidly. These climate protection measures in this plan can spur business and job growth during the design, manufacture, and installation of energy efficient technologies and other green sectors. This presents a particular opportunity to reinvest in the local economy and generate green jobs within White Plains. greenWP 12 is a direct reference to this benefit, stating, "Ensure that clean energy projects are equitable and advance inclusivity by creating local jobs and economic benefits."

## 4. Improving Public Health

Climate change mitigation activities, particularly those related to transportation, help to clean the air by reducing vehicle emissions and, therefore, improve public health throughout the community.

Transportation mitigation strategies often focus on encouraging the use active transportation, such as biking and walking, to get to work. City employees who increase their use of active transportation will benefit from a healthier lifestyle.

## 5. Delivering Benefits to Frontline Communities

Social equity is a major concern for addressing climate change. Research shows that vulnerable populations such as the elderly or chronically ill, low income families and people of color are more at risk when it comes to experiencing impacts of climate change. These communities already experience less access to resources, capital, and services. Climate change exacerbates these gaps. By targeting programs and making changes to services or infrastructure before extreme events happen, we can mitigate the most devastating impacts to already vulnerable populations. Additional measures aimed solely at climate adaptation, such as modifying flood protection and heat emergency response programs will also be addressed in this Climate Action Plan.

# Climate Equity within White Plains

Equity is when all individuals have access to the opportunities necessary to satisfy their essential needs, advance their well-being and achieve their full potential. Low income populations, communities of color, people with disabilities, elders, refugees and immigrants, and other at risk communities often bear the brunt of climate impacts without the necessary infrastructure, support systems, and resources for recovery. Inequity correlates with greater vulnerability to physical challenges, making some communities disproportionately affected by natural disasters and the impacts of climate change for a variety of reasons, such as lack of financial resources to cool a home; assets inadequately insured against damage from national disasters; and communities with less tree canopy more vulnerable to an urban heat island effect.

Creating a resilient community means addressing the social inequities that cause disparities in health, income, educational attainment, and outcomes.

It is a guiding principle of the One White Plains Comprehensive Plan, that the City approaches all future initiatives with the objective to advance social justice. For instance, future capital investments made by the City to address climate change mitigation and adaptation should prioritize the City's most vulnerable neighborhoods and areas, and initiatives that pertain to programs or campaigns should be met with effective outreach and educational efforts to build awareness and understanding.

Climate equity ensures the just distribution of the benefits of climate protection efforts and alleviates unequal burdens created by climate change. This requires intentional policies and projects that simultaneously address the effects of and the systems that perpetuate both climate change and inequity.

Government action alone is not enough to address climate change; everyone must be a part of the solution. and everyone must be offered equitable opportunities to participate and benefit.

Climate change is likely to amplify the impacts of existing inequities, and at risk communities such as lower income, communities of color, unhoused, outdoor workers, the very young, and older residents, will disproportionately bear the effects of climate change impacts. In addition, the many economic and health benefits of carbon reduction investments must be shared equitably across the City, especially among people of color and low-income communities.

# Jurisdiction's Local Government Operations Emissions

## Inventory Basics

Since the early 1990s, U.S. cities have developed community-wide and local government operations greenhouse gas inventories based on accounting protocols created by ICLEI. Known as the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions and the Local Government Operations Protocol, these standards created a credible and defensible methodology which accelerated the number of inventories created and provides consistency within and across U.S. communities. In 2014, ICLEI partnered with the World Resources Institute and C40 Climate Leadership Group to create the Global Protocol for Community Scale GHG Emissions, which allows communities around the world to compare their emissions footprint. White Plains used the Local Government Operations Protocol for the inventory described in this report.

See Appendix One for more information.

## Summary of Inventory Results

Through the completion of a local government operations GHG emissions inventory, White Plains has determined emissions levels for City government operations. Emissions from local government operations represent the sum of total emissions produced by government facilities, vehicle fleets, and other government-owned or operated activities. In this way, the local government operations figures represent emissions for which the local government is responsible. Government operations are therefore a subset of total community emissions.

For this Climate Action Plan, White Plains completed a Local Government Operations inventory that analyzes the 2019 year. This inventory was conducted using the Local Government Operations Inventory and ICLEI's ClearPath tool. Through this inventory, the City determined its overall emissions in the 2019 year equated to **7,068 metric tons of carbon dioxide equivalent ($MTCO_2e$)**. The Buildings & Facilities sector is the largest source of emissions, with 2,692 MTCO2e which is 38.1% of the total emissions (Figure 1). This is followed very closely by the Vehicle Fleet then the Employee Commute Sectors with 2,685 $MTCO_2e$ (38%) and 1,372 **$MTCO_2e$** (19.4%) respectively (Figure 2).

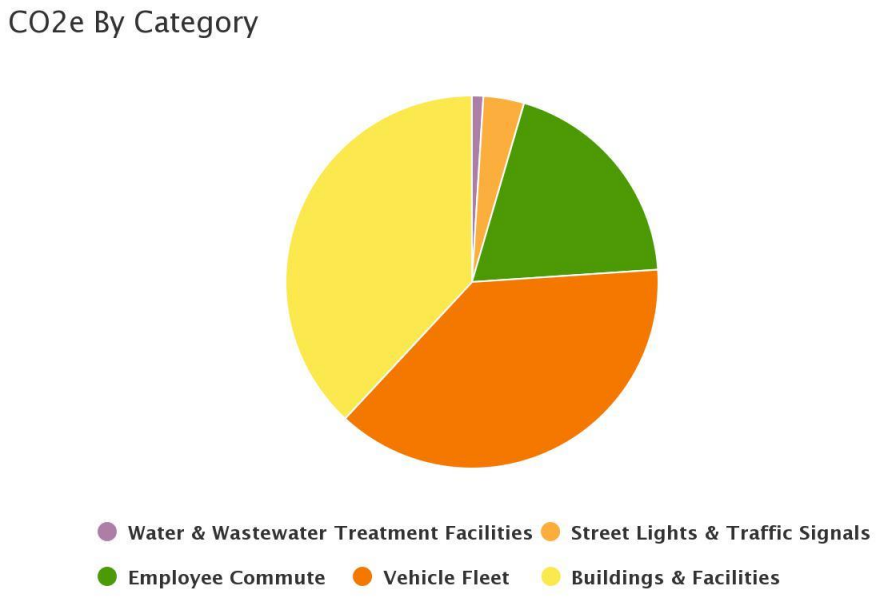



**Figure 2:** White Plains 2019 Local Government GHG Emissions by Sector

# White Plains Projected Growth in Local Government Operations GHG Emissions

White Plains has also completed an emissions forecast based on projections of current data and expected future trends. The emissions forecast is a "Business-As-Usual" (BAU) forecast, a scenario estimating future emissions levels if no further local action (i.e. projects within this Climate Action Plan) were to take place. The forecast indicates that, if the City does not take action, GHG emissions will stay relatively the same.

## Projected Growth in GHG Emissions

Figure 2 shows the projected growth in GHG emissions in White Plains from 2019 to 2050 if the City continues with business as usual (BAU). The emission growth shown in the forecast below is based on population growth, employee count projections, electricity grid decarbonization projections, and changes in automotive fuel efficiency standards. The City's Local Government Operations business as usual forecast shows that emissions will slightly decrease to 6,373 MTCO2e by 2050 if no action is taken to reduce the emissions trajectory due to the state regulations that are going to be put in place over time. This is only around a 10% reduction in emissions from 2019 to 2050.

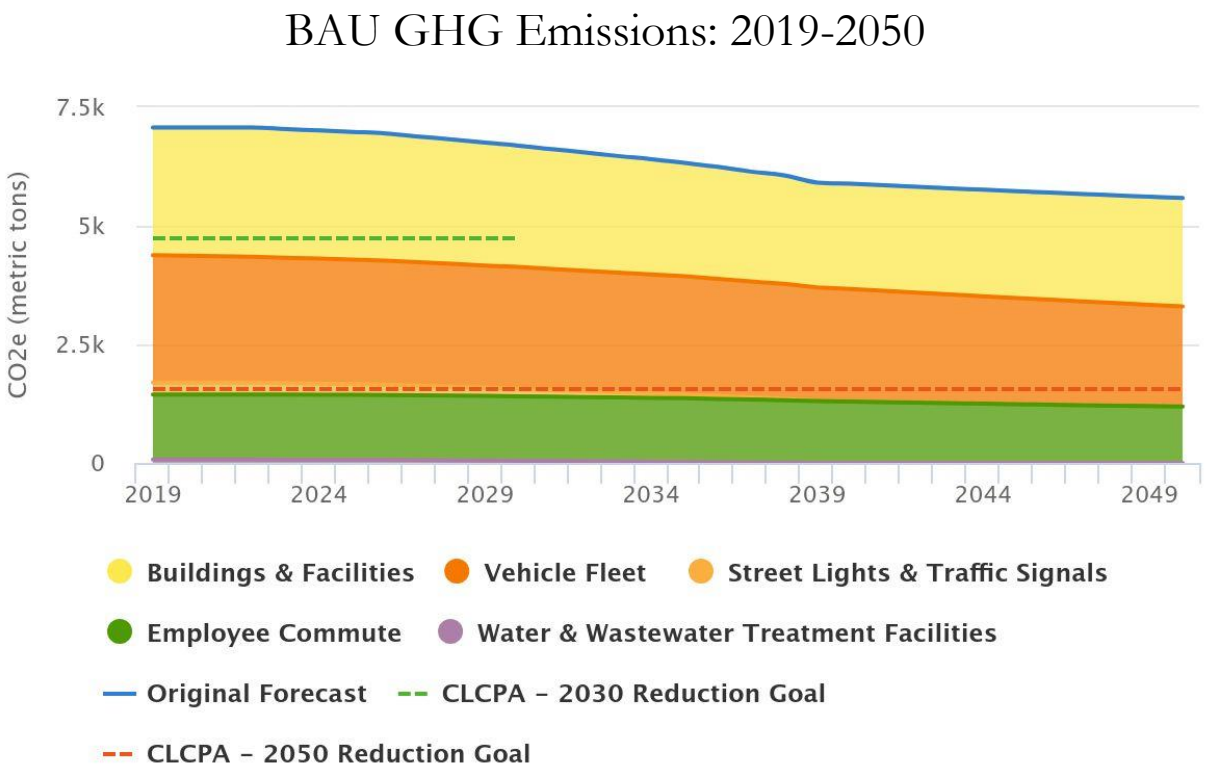



**Figure 3:** Business as Usual projected trend GHG Emissions from 2019 to 2050

# Government Operations Climate Mitigation

## Emissions Reduction Focus Areas

The focus areas of: building and facilities; the vehicle fleet; renewable energy; recycling; and employee commute within the White Plains Local Government Operations Climate Action Plan are explored in the following pages.

In each focus area, an objective with supporting strategies is outlined. An "Objective" is a goal, end result, or target that mitigates emissions in a focus area, and a "Strategy" is an action designed to help realize the objective.

The summary table below (Table 2) identifies the focus areas, the number of strategies within each focus area, and the contribution of each focus area toward the GHG reduction goal. Each focus area is further described below.

While the White Plains local government cannot address climate change by itself, government policies and practices can reduce GHG emissions from a range of sources and help prepare the City for the anticipated impacts of climate change. Through this plan, White Plains can not only do its part toward achieving a stable climate - it can also reap the benefits of healthier air, savings on energy costs, improved government services, and many other positive side effects of reducing its carbon footprint.

Table 1: White Plains Climate Action Plan Summary Table – Focus Areas

| Focus Area | Description | # of Distinct Strategies | GHG Reduction * |
|---|---|---|---|
| **Buildings & Facilities** | Strategies and programs to reduce municipal energy usage, interfacing with local utility efforts. | 3 |  |
| **Transportation / Vehicle Fleet** | Policies and programs to reduce municipal vehicle fleet fuel usage, including transition to electric vehicles | 3 |  |
| **Renewable Energy** | Assessing City ability to increase solar installations | 2 | N/A |
| **Waste / Recycling** | Education and policy that promote recycling | 2 |  |
| **Transportation / Employee Commute** | Educate and maintain infrastructure to encourage cleaner commutes | 2 |  |

* See following page for explanation of GHG reduction potential

## Emissions Reduction Potential

Calculating expected emissions reductions for each objective requires making assumptions about the degree of implementation, technology, and individual behavioral changes several years into the future. The uncertainty associated with these assumptions makes it difficult to assign exact reduction totals to each objective or strategy. To address this uncertainty and provide a simple but useful reference for reduction potential, a series of symbols and percentage ranges has been devised to represent the emission reductions associated with each objective and its strategies:

**Table 2:** GHG Reduction Symbols

| Symbol | GHG Reduction |
|---|---|
|  | <500 MTCO2e |
|  | 500-1,000 MTCO2e |
|  | 1,000-2,000 MTCO2e |

## Co-Benefits

In addition to measuring the GHG reduction potential, each strategy is also evaluated for other benefits such as public health, equity and justice, jobs and prosperity, and environmental conversation. The symbols below will indicate which co-benefits a measure will generate.

Table 3: Co-Benefit Symbols

| Symbol | Co-Benefit |
|---|---|
|  | High potential to save money |
|  | High potential to enhance resource security |
|  | High potential to create jobs |
|  | High potential to improve public health |
|  | High potential to deliver benefits to frontline communities |

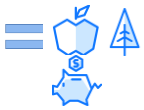
# Climate Action Objectives

## Buildings and Facilities

The City's buildings and facilities are powered by electricity and natural gas. The consumption of fossil fuels for heat and energy on-site contributes directly to the government's emissions, and the electricity used for lighting, heat and other operations is generated from burning fossil fuels as well.

Energy consumed in City owned and operated buildings and facilities accounts for 38.1% of White Plains' total GHG emissions. Improving the efficiency of the City's buildings and infrastructure will contribute significantly to achieving the City's GHG reduction targets, while saving the government money on utility bills and reducing the need for new infrastructure. The strategies in the table below focus on opportunities to retrofit existing facilities and aim to ensure that future management and planning of these operations is compatible with the local government and community climate protection goals.

Table 4: Building and Facilities Energy Objectives

| Objective | Supporting Strategies | Benefits | Reduction Potential | Metric | Lead Actor |
|---|---|---|---|---|---|
| Further Enhance the Energy Efficiency of Municipal Buildings (greenWP16) | Increase buildings enrolled in demand response |  |  | Number of buildings enrolled in demand response | DPW |
| | Upgrade HVAC equipment (convert to heat pumps) as heating/cooling systems reach the end of their useful life and/or as energy audits indicate need |  |  | Spring 2024 and ongoing | DPW |
| | Install LED lights in parking garages |  |  | 2025 and ongoing | DPW |

## Vehicle Fleet

White Plains owns and operates a fleet of government vehicles, ranging from passenger cars to large construction equipment. Besides emitting GHGs, transportation fuels such as gasoline and diesel also produce many criteria air pollutants when combusted, deteriorating local air quality and affecting residents' health.

Energy consumed by fleet vehicles accounts for 38% of White Plains' total GHG emissions. Transitioning the municipal vehicle fleet to electric vehicles (EVs) will contribute significantly to achieving the City's GHG reduction targets, while saving the government money on fuel costs and improving local air quality. The objectives in the table below focus on opportunities to use more efficient vehicles and to electrify the vehicle fleet, and aims to ensure that future activities in the sector are compatible with the local government and community climate protection goals.

Table 5: Vehicle Fleet Objectives

| Objective | Supporting Strategies | Benefits | Reduction Potential | Metric | Lead Actor |
|---|---|---|---|---|---|
| Electrify the Vehicle Fleet | Purchase EVs as City vehicles reach the end of their useful life |  |  | Number of EV's purchased | Purchasing |
| | Adopt a green fleet policy |  |  | Green Fleet Policy | Common Council |
| | Continue to invest in electric vehicle charging station infrastructure (GreenWP19) |  | N/A | Number of charging stations | Parking/ DPW |

## Renewable Energy

With climate change becoming more of a global problem each year, the race to implement cleaner energy to reduce GHG emissions is becoming more important as well. White Plains is a strong supporter of renewable energy and strives to explore and implement strategies to reduce the amount of emissions from energy sources, while still being able to meet the demand.

**Table 6:** Renewable Energy Objectives

| Objective | Supporting Strategies | Benefits | Reduction Potential | Metric | Lead Actor |
|---|---|---|---|---|---|
| Evaluate opportunities to expand municipal renewable energy projects (greenWP10) | Explore floating solar |  | N/A | N/A | DPW |
| | Explore solar panels on municipal buildings |  | N/A | N/A | DPW |

## Recycling

Recycling is an environmentally responsible initiative that the City of White Plains encourages and participates in. Education is an important part of the recycling process and White Plains wishes to contribute to the benefits that recycling brings.

**Table 7:** Recycling Objectives

| Objective | Supporting Strategies | Benefits | Reduction Potential | Metric | Lead Actor |
|---|---|---|---|---|---|
| Increase recycling education and efforts | Recycling program/educate staff |  |  | N/A | Mayor's Office |
| | Purchase recycled paper policy |  |  | Purchase recylced paper policy | Common Council |

## Employee Commute

As shown in figure 2, the amount of emissions stemming from employee commute was quite significant. White Plains is adamant about reducing emissions related to commuting through education efforts relating to alternate modes of transportation that can be less polluting than private gasoline vehicles.

**Table 8:** Employee Commute Objectives

| Objective | Supporting Strategies | Benefits | Reduction Potential | Metric | Lead Actor |
|---|---|---|---|---|---|
| Reduce Emissions from Employee Commute | Encourage/educate employees about switching to personal electric vehicles from gasoline/diesel vehicles and/or using alternative forms of transportation to commute to and from work (public transportation, cycling, etc.) |  |  | Number of employees using alternate forms of transportation | Mayor's Office |
| | Maintain City infrastructure to support EV charging and alternative forms of transportation | N/A | N/A | N/A | DPW |

Overall emissions reductions for a scenario combining multiple reduction actions from the above tables is shown below. These reduction scenarios are using our 2019 baseline data with the reductions starting in

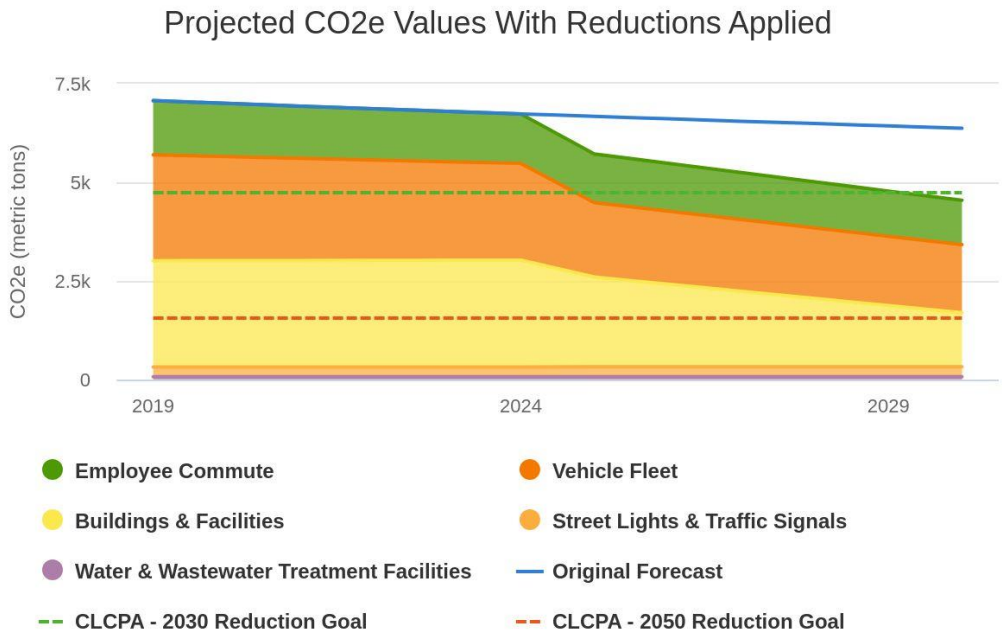
2024. This is all to show how The City of White Plains plans to reach our GHG emissions reduction targets which coincide with the 2030 and 2050 CLCPA goals.

## Emissions Reduction Scenario 1 (Using 2019 Baseline Data Implementing Actions in 2024)

This scenario includes:

1. Reduce municipal energy use by 30% by 2030
2. 40% EV municipal fleet by 2030
3. 30% building HVAC electrification by 2030
4. LED light replacement in garages

**Figure 4:** Scenario 1 Emissions reductions

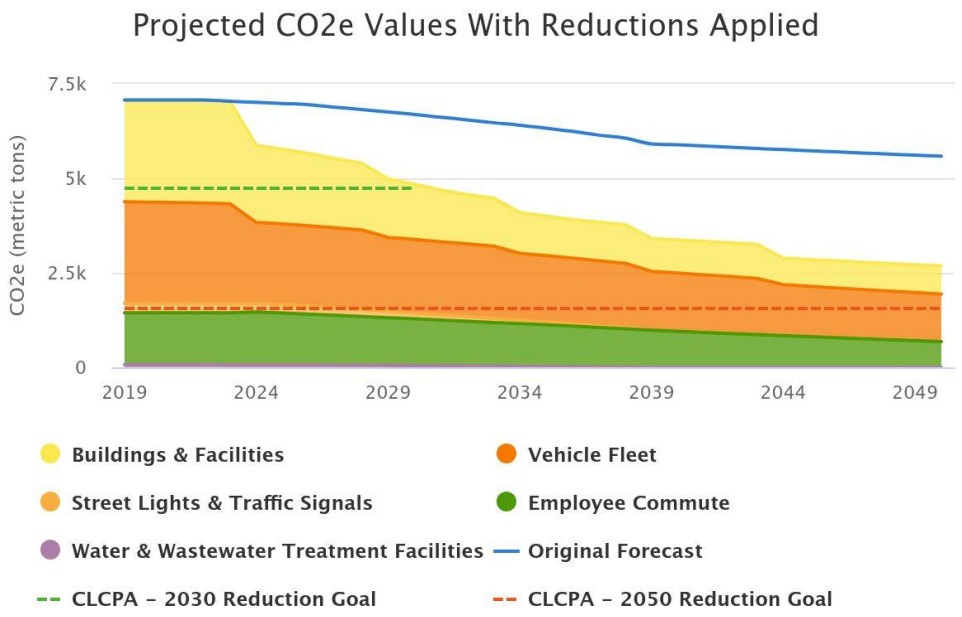


## Emissions Reduction Scenario 2 (Using 2019 Baseline Data Implementing Actions in 2024)

This scenario includes:

1. Reduce municipal energy use by 50% by 2050
2. 75% EV municipal fleet by 2050
3. 50% building HVAC electrification by 2050
4. LED light replacement in garages
5. 50% of employee commute converting to EVs

**Figure 5:** Scenario 2 Emissions reductions




# Monitoring Plan

Many of the actions within the White Plains Local Government Operations Climate Action Plan are well underway. White Plains has, and will continue to, engage with stakeholders through a multifaceted community awareness and involvement campaign.

The City of White Plains Climate Smart Community Coordinator, together with the Planning Department, will review the progress of strategies and objectives on at least a quarterly basis. The local government operations GHG inventory will be updated every five years.

Establishing a monitoring process enables the City of White Plains to track the impacts of the actions included in the plan and compare estimated impacts to what is actually achieved in terms of energy savings and GHG emissions reduction. Assessing the implementation status of the actions will allow for determination of whether the action is performing well or to identify corrective measures. This process is

also an opportunity to understand the barriers to implementation and identify best practices or new opportunities for moving forward.

The table below describes the components of the monitoring reports. Action reports are to be developed every two years and will only include status updates on the overall strategy, the mitigation action plan, and the adaptation action plan. A full monitoring report will be developed every five years, and in addition to the components in the action report, it will include an updated local government operations GHG inventory. This will help the City of White Plains track its GHG emissions reduction progress. With the approval of this Local Government Operations Climate Action Plan in 2024, the first monitoring action report will be due in 2026 and the first full monitoring report with the updated GHG inventory will be due in year 2029. Ideally, the most recent GHG inventory should be no more than five years old.

Table 9: Monitoring Status

| Monitoring Report Component | Action Reporting | Full Reporting |
|---|---|---|
| **Overall Strategy:** Reporting any changes to initial strategy as well as updated information on human and financial resources | Yes | Yes |
| **GHG Emissions Inventories:** Provide updated energy consumption and GHG emissions data for the reporting year | No | Yes |
| **Mitigation and Adaptation Action Plans:** Report the implementation status (completed, in progress, on hold) of key actions and update their impacts | Yes | Yes |

# Appendix I: White Plains LGO GHG 2019 Inventory

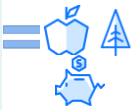
**Please refer to the City of White Plains website linked here for the full LGOGHG 2019 Inventory Report: (https://www.Cityofwhiteplains.com/1034/Climate-Action-Planning-Institute-Projec )**

# Appendix II: Detailed Strategies and Analysis

## Building and Facilities

**Table A1:** Objective E1 Details

| Objective E1 – Further Enhance the Energy Efficiency of Municipal Buildings (greenWP16) |
|---|
| Reducing energy use within Municipal buildings while lowering GHG emissions through various methods. |

| Strategy Number | Strategy | Benefits | Lead Actor | Metric |
|---|---|---|---|---|
| E1-A | Increase buildings enrolled in demand response |  | DPW | Number of buildings enrolled in demand response |
| E1-B | Pursue a Comprehensive Building Electrification pilot program for existing buildings (greenWP22). |  | DPW | Building electrification pilot program |
| E1-C | Upgrade HVAC equipment (convert to heat pumps) as heating/cooling systems reach the end of their useful life and/or as energy audits indicate need |  | DPW | Number of HVAC equipment replaced |
| E1-D | Explore solar panels on municipal buildings |  | DPW | Solar Viability reports for each municipal building |
| E1-E | Retrofit existing buildings to be more adaptive to impacts of climate change (shading, ventilation, green/white roofs, insulation) (greenWP25) |  | DPW | Retrofit viability reports for existing buildings |

# Vehicle Fleet

**Table A2:** Objective T1 Details

| Objective T1: Electrify the Vehicle Fleet | | | | |
|---|---|---|---|---|
| Converting the municipal vehicle fleet from diesel or gasoline to electric to help reduce GHG emissions. | | | | |
| **Strategy Number** | **Strategy** | **Benefits** | **Lead Actor** | **Metric** |
| T1-A | Purchase EVs as City vehicles reach the end of their useful life |  | DPW/ Purchasing | Number of EVs purchased |
| T1-B | Adopt a green fleet policy |  | Law Dept/ Common Council | Green Fleet Policy |
| T1-C | Continue to invest in electric vehicle charging station infrastructure (GreenWP19) |  | Parking/ DPW | Number of charging stations |

# Additional Tables

**Table A3:** Estimated emissions reductions and simple payback time for actions.

*The data below are estimates made from internal data on municipal facilities based on state-wide averages

| Action | Simple payback time (years) | Annual Emissions reduction (MTCO2e) |
|---|---|---|
| LED lighting (reduction data from LED conversion) | 2.5 | 1184 |
| EV acquisition (1 Car Avg) | Avg: 5-6 | 5.7 |
| New building efficiency (Planning Dept. as Example) | Avg: 6-10 | 13.5 |
| Solar PV (rooftop) (Avg 5kw system) | Avg: ~8 | 6.8 |

**Table A4:** Timeline for Action

| Timeline for Action - Completion Year | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|
| **BUILDINGS AND FACILITIES** | | | | | | | |
| Increase Buildings enrolled in demand response | X | X | X | X | X | X | X |
| Upgrade HVAC equipment (convert to heat pumps) as heating/cooling systems reach the end of their useful life and/or as energy audits indicate need | X | X | X | X | X | X | X |
| Install LED lights in parking garages | | X | X | X | X | X | X |
| **Vehicle Fleet** | | | | | | | |
| Purchase EVs as City vehicles reach the end of their useful life | X | X | X | X | X | X | X |
| Continue to invest in electric vehicle charging station infrastructure (GreenWP19) | | X | X | X | X | X | X |
| Adopt a green fleet policy | | | | | | | X |
| **Renewable Energy** | | | | | | | |
| Explore floating solar | | X | | | | | |
| Explore solar panels on municipal buildings | | X | | | | | |
| **Recycling** | | | | | | | |
| Recycling program/educate staff | | X | X | X | X | X | X |
| Purchase recycled paper policy | | | | | | | X |
| **Employee Commute** | | | | | | | |
| Encourage/educate employees about switching to personal electric vehicles from gasoline/diesel vehicles and/or using alternative forms of transportation to commute to and from work (public transportation, cycling, etc.) | | X | | | | | |
| Maintain City infrastructure to support EV charging and alternative forms of transportation | X | X | X | X | X | X | X |

# Appendix III: Climate Change Science

The City of White Plains will continue to experience the effects of climate change. An increase in frequency of high-intensity storms, average annual temperatures and extreme heat events, and an increase in average annual precipitation are all effects of climate change and will continue to get worse if action is not taken. These climate change effects will negatively impact the residents of White Plains directly with increased flooding, electricity usage (for heating and cooling due to abnormal temperature fluctuations like heat waves), and natural environment damage from high-intensity storms. Thus, it is important for the City of White Plains local government to act, and make strides towards a cleaner and healthier environment for its residents, and to create solutions for mitigation and adaptation to the effects of climate change.

The Intergovernmental Panel on Climate Change (IPCC)'s Fifth Assessment Report affirms that "warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level."[1] Researchers have made progress in their understanding of how the Earth's climate is changing in space and time through improvements and extensions of numerous datasets and data analyses, broader geographical coverage, better understanding of uncertainties and a wider variety of measurements.[2] These refinements expand upon the findings of previous IPCC Assessments – today, observational evidence from all continents and most oceans shows that "regional changes in temperature have had discernible impacts on physical and biological systems."

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

[2]. IPCC, 2014: Summary for Policymakers. In: Climate Change 2014: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

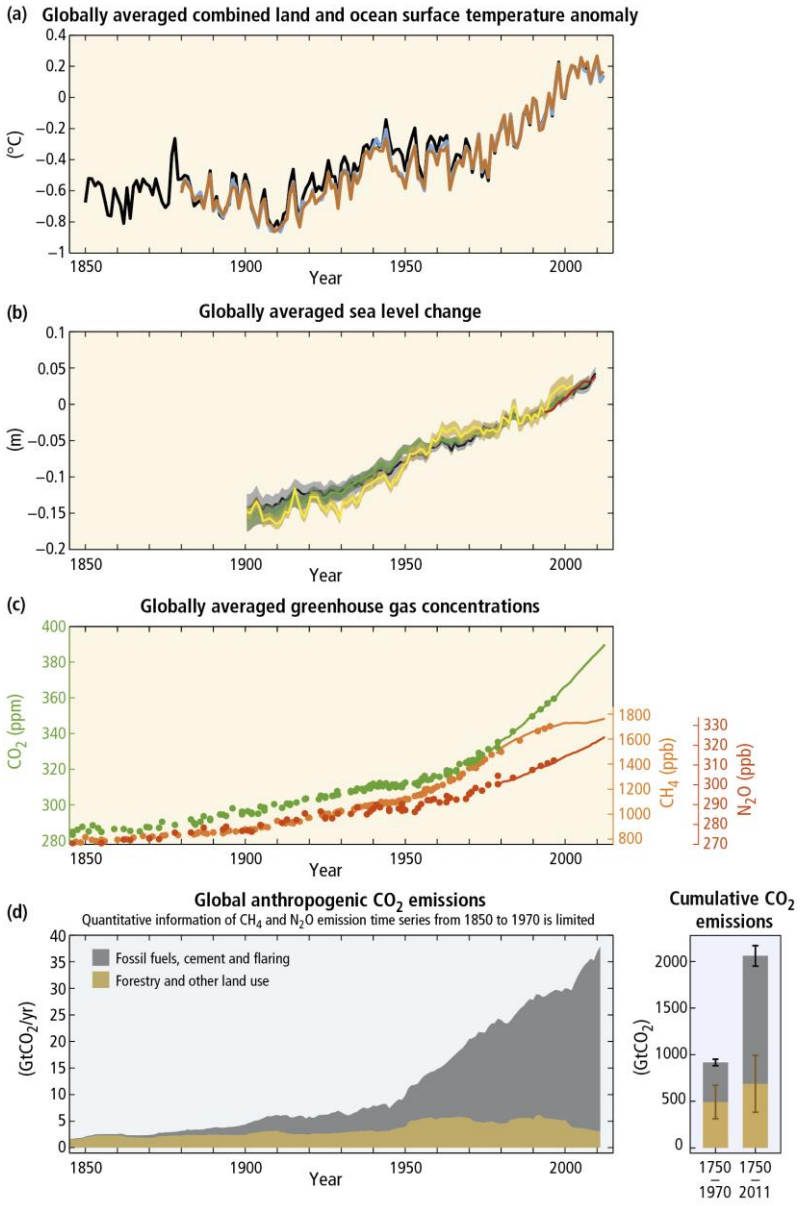



**Figure A1:** Observations and other indicators of a changing global climate system[3]

The Fifth Assessment Report of the Intergovernmental Panel on Climate Change asserts that "it is *extremely likely* that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forces. Globally, economic and population growth continue to be the most important drivers of increases in $CO_2$ emissions from fossil fuel combustion. Changes in many extreme weather and climate events have been observed since about 1950. Some of these changes have been linked to human influences, including a decrease in cold temperature extremes, an increase in warm temperature extremes, an increase in

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

extreme high sea levels and an increase in the number of heavy precipitation events in a number of regions".

In short, the Earth is already responding to climate change drivers introduced by mankind.

## Temperatures and Extreme Events are Increasing Globally

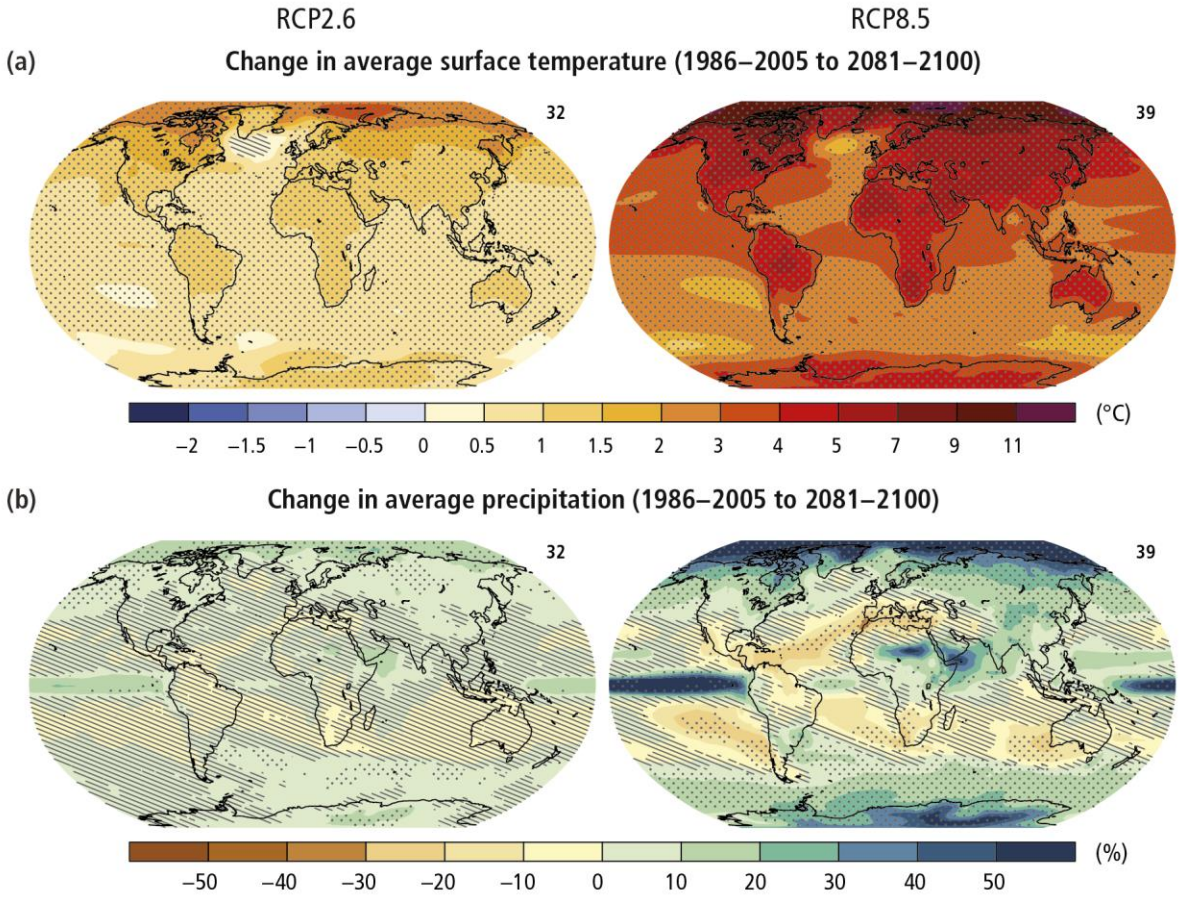



**Figure A2:** Change in average surface temperature (a) and change in average precipitation (b) based on multi-model mean projections for 2081–2100 relative to 1986–2005 under the RCP2.6 (left) and RCP8.5 (right) scenarios.

Surface temperature is projected to rise over the 21st century under all assessed emission scenarios. It is very likely that heat waves will occur more often and last longer, and that extreme precipitation events will become more intense and frequent in many regions. The ocean will continue to warm and acidify, and global mean sea level will rise.

## Climate Risks

Climate change is expected to cause significant negative effects on food security. Due to projected climate change by the mid-21st century and beyond, global marine species redistribution and marine biodiversity reduction in sensitive regions will challenge the sustained provision of fisheries productivity and other ecosystem services. For wheat, rice and maize in tropical and temperate regions, climate change is projected to negatively impact production under local temperature increases of 2°C or more above late 20th century levels, although in some cases individual locations may benefit. Global temperature increases of ~4°C or more above late 20th century levels, combined with increasing food demand, would pose drastic risks to food security globally. Climate change is projected to reduce renewable surface water and groundwater resources in most dry subtropical regions, intensifying competition for water.

Until mid-century, projected climate change will impact human health mainly by exacerbating health problems that already exist. Throughout the 21st century, climate change is expected to lead to increases in ill-health in many regions, particularly in developing countries. Health impacts include greater likelihood of injury and death due to more intense heat waves and fires, increased risks from foodborne and waterborne diseases and loss of work capacity and reduced labor productivity in vulnerable populations. Risks of undernutrition in poor regions will increase. Risks from vector-borne diseases are projected to generally increase with warming, due to the extension of the infection area and season, despite reductions in some areas that become too hot for disease vectors.

In urban areas, climate change is projected to increase risks for people, assets, economies and ecosystems, including risks from heat stress, storms and extreme precipitation, inland and coastal flooding, landslides, air pollution, drought, water scarcity, sea level rise and storm surges. These risks are amplified for those lacking essential infrastructure and services or living in exposed areas. Rural areas are expected to experience major impacts on water availability and supply, food security, infrastructure and agricultural incomes, including shifts in the production areas of food and non-food crops around the world.

Climate change is projected to increase displacement of people. Populations that lack the resources for planned migration experience higher exposure to extreme weather events, particularly in developing countries with low income. Climate change can indirectly increase risks of violent conflicts by amplifying well-documented drivers of these conflicts such as poverty and economic shocks.[4]

## Regional and Local Impacts

During the next century, annual precipitation and the frequency of heavy downpours are likely to keep rising. Higher water levels are eroding beaches, submerging lowlands, and exacerbating coastal flooding. Evidence of these adverse impacts have been illustrated via the results of intense coastal storms such as Hurricane Ida and Superstorm Sandy. Ida was estimated to have caused approximately $7.5–9 billion in damages across New York, in addition to at least 16 fatalities. In the coming decades, the changing climate is likely to increase coastal and inland flooding, disrupt farming and winter recreation, and increase some risks to human health. According to an analysis by the New York State Department of Environmental Conservation (NYS DEC), some of the climate hazards projected to impact communities like White Plains

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

include increased frequency of high-intensity storms, increase in average annual precipitation, increase in average annual temperatures, and increase in extreme heat events. To learn more about the regional and local impacts of climate change, please refer to the greenWP section of the OneWP Comprehensive Plan linked here.

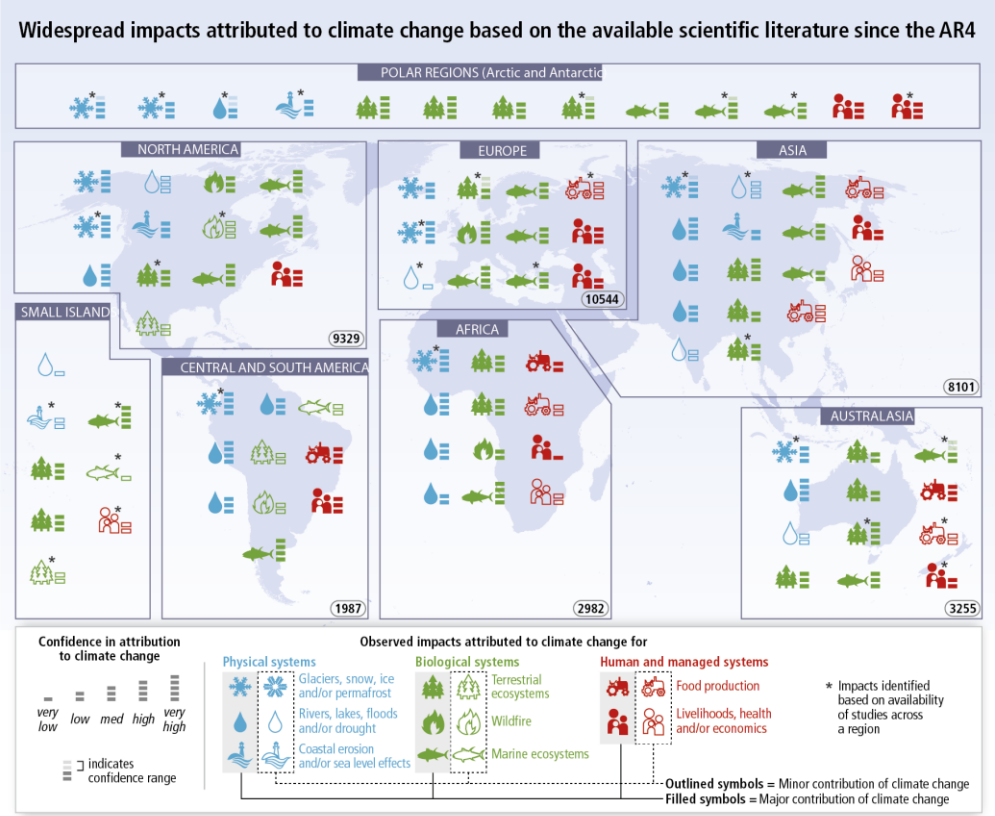



**Figure A3:** Climate impacts around the world. Symbols indicate categories of attributed impacts, the relative contribution of climate change (major or minor) to the observed impact and confidence in attribution.

Numbers in ovals indicate regional totals of climate change publications from 2001 to 2010, based on the Scopus bibliographic database for publications in English with individual countries mentioned in title, abstract or keywords (as of July 2011). These numbers provide an overall measure of the available scientific literature on climate change across regions; they do not indicate the number of publications supporting attribution of climate change impacts in each region. Studies for polar regions and small islands are grouped with neighboring continental regions.[5]



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