

CITY OF APPLETON

# CLIMATE ACTION PLAN PROPOSAL

Recommendations of the Taskforce on  
Resiliency, Climate Mitigation and Adaptation

DECEMBER 2021





# Land Acknowledgement

A Land Acknowledgement statement will be inserted here when it has been co-created with local Indigenous communities.

# Acknowledgements

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*Taskforce on  
Resiliency, Climate  
Mitigation and Adaptation*

# Letter from Mayor Jake Woodford



## FELLOW APPLETONIANS,

The enclosed Climate Action Plan Proposal is the result of a concerted effort of a citizen-led team to provide recommendations to help shape our ongoing efforts to be a more sustainable and resilient community. It also represents the successful completion of the work set forth by the Appleton Common Council in 2019 to develop this proposal.

Created by Resolution 13-R-19 (Alders Schultz, Meltzer, Fenton, Otis) and originally appointed by Mayor Hanna, the Appleton Taskforce on Resiliency, Climate Mitigation, and Adaptation (Taskforce) has worked diligently to assemble a set of recommendations aimed at reducing the City's emissions, use of non-renewable resources, and to increase our resiliency to the future effects of global climate change.

The passage of Resolution 13-R-19 also established the goal of the City of Appleton achieving net-zero greenhouse gas emissions by 2050 or sooner – a goal we continue to actively pursue through ongoing efforts such as our recent installation of a photovoltaic system at our Municipal Services Building.

Working to address the issue of climate change is a longstanding priority of the City of Appleton. In fact, Appleton is a charter member of the State of Wisconsin's Green Tier Legacy Community program, which formed in 2004 and exists to "advance sustainable practices and stretch limited local government resources." Appleton, like our fellow Legacy Communities, is actively "preparing for the future, building resilient communities, and moving faster toward [our] goals."

The City of Appleton will look to build on our progress to-date, which includes meeting our goal of reducing electricity use by 25% by 2025 four years ahead of target. This result was a product of using strategic, evidence-based interventions to meet our sustainability goals.

The Taskforce has organized their recommendations into four broad areas – Leadership; Well-Being & Public Spaces; Resource Allocation; and the Natural World. They believe the City government and our community are well-positioned to create and thrive in an environmentally sustainable future, and I agree. This Climate Action Plan, and the updates to the City's Sustainability Strategic Plan that it will inform, are key aspects of our ability to meet that aspiration as a community.

Together, we can and must take action to reduce our impact on the environment and to prepare for a future shaped by the effects of climate change we are already facing. The City of Appleton remains committed to leading in this important work. Our next steps will be to create an ongoing mechanism to support and monitor our progress against our 2050 goal and for city staff to determine the feasibility and sequencing of viable projects. This work is already underway.

In closing, I would like to thank the members of the Taskforce who have volunteered to serve, and especially to the two chairs who have led the work: Terry Dawson and Heather McCombs. We owe them a debt of gratitude for their leadership.

Sincerely,

Jake Woodford  
Mayor of Appleton

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# Executive Summary

One of the most pressing issues for people and communities around the globe is climate change. Climate change threatens our environment, economy, and people. In Wisconsin, we have already begun to experience impacts of climate change, including warmer winters and wetter springs. Therefore, a broad set of actions to reduce greenhouse gas emissions is necessary to avert the most serious impacts of climate change. The Appleton Taskforce on Resiliency, Climate Mitigation and Adaptation was approved by the Appleton Common Council in 2019 to develop a climate action plan that would help the City meet a goal of zero greenhouse gas emissions. Mitigation, resiliency, and adaptation are the three pillars in a successful response to climate change and are recognized in the name of the Committee. Mitigation is aimed at reducing the effects of climate change through reductions in greenhouse gas emissions, while resiliency focuses on the ability to anticipate and recover from hazardous events related to a changing climate, and adaptation encompasses new processes, practices, and structures to moderate potential damages associated with climate change.

The City of Appleton has already employed many successful sustainability measures on City properties, grounds and facilities and the climate action plan builds on these sustainability measures. An important first step in developing an action plan was the completion of a greenhouse gas inventory for the City as a means to identify emission sources and measure progress towards carbon neutrality. The proposal contains almost 50 recommendations and specific action steps to achieve each recommendation. One of these recommendations is the creation of a Climate Change Commission composed primarily of community members that will advise the Mayor and Common Council on issues related to climate change.

The recommendations and actions are divided into four broad categories – Leadership, Wellbeing and Public Spaces, Resource Allocation, and Natural World. Within the Leadership category, we are strongly recommending that the city create a position for a Climate Resiliency Specialist whose duties will include facilitating education and community outreach about climate change and mitigation, resiliency, and adaptation in response to climate change. Wellbeing and Public Spaces recommendations include those related to green buildings, green infrastructure, and alternative transportation. Initiatives to address energy consumption, waste, renewable energy, sustainable procurement, and water are included in the Resource Allocation category. Recommendations pertaining to the Natural World and the ecosystem make up the final broad category in this proposed Climate Action Plan. The climate action plan proposed by the Taskforce also includes initiatives for businesses and residents.

It will not be possible to implement all the recommendations in the action plan at once. Therefore, a prioritization process has been developed to evaluate which projects should be undertaken first. The prioritization process takes cost, environmental impact, equity, and other factors into consideration. While many of the proposed recommendations and actions cost money, overall reduction of energy use and switching to renewable forms of energy will have long-term economic benefits.

The Taskforce was united in the belief that the City of Appleton must provide leadership to achieve carbon neutrality and create a sustainable future. The use of a climate action plan will help our community address climate change while simultaneously improving the overall health and economic vitality of the community. The recommendations and actions described herein engage the City of Appleton and the families, businesses, and industries within the city, relying on participation from all members of our community for success. We urge others to join us to create a healthy and economically vibrant community. Together we can make a difference.

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A dirt path winds through a lush forest. The path is light-colored and leads towards a dense canopy of green trees. In the foreground, there are large, vibrant purple flowers with green foliage. The overall scene is bright and natural.

# BACKGROUND



# The City of Appleton

Appleton is in northeast Wisconsin, in Outagamie, Winnebago, and Calumet Counties. The territory where Appleton is today was traditionally occupied by the Ho-Chunk and the Menominee. The Menominee Nation ceded the territory to the United States in the Treaty of the Cedars in 1836, with Chief Oshkosh representing the Menominee. Fur traders seeking to do business with Fox River Valley Indian tribes were the first European settlers in Appleton. Hippolyte Grignon built the White Heron in 1835 to house his family and serve as an inn and trading post. Lawrence Institute, now Lawrence University, was chartered in 1847 with the financial backing of philanthropist Amos Lawrence. Appleton, which started with workers and their families from the Lawrence Institute settling in the area, gets its name from Samuel Appleton, Amos's Father-in-law, who donated \$10,000 to the newly founded college library, and the town took his name in appreciation.

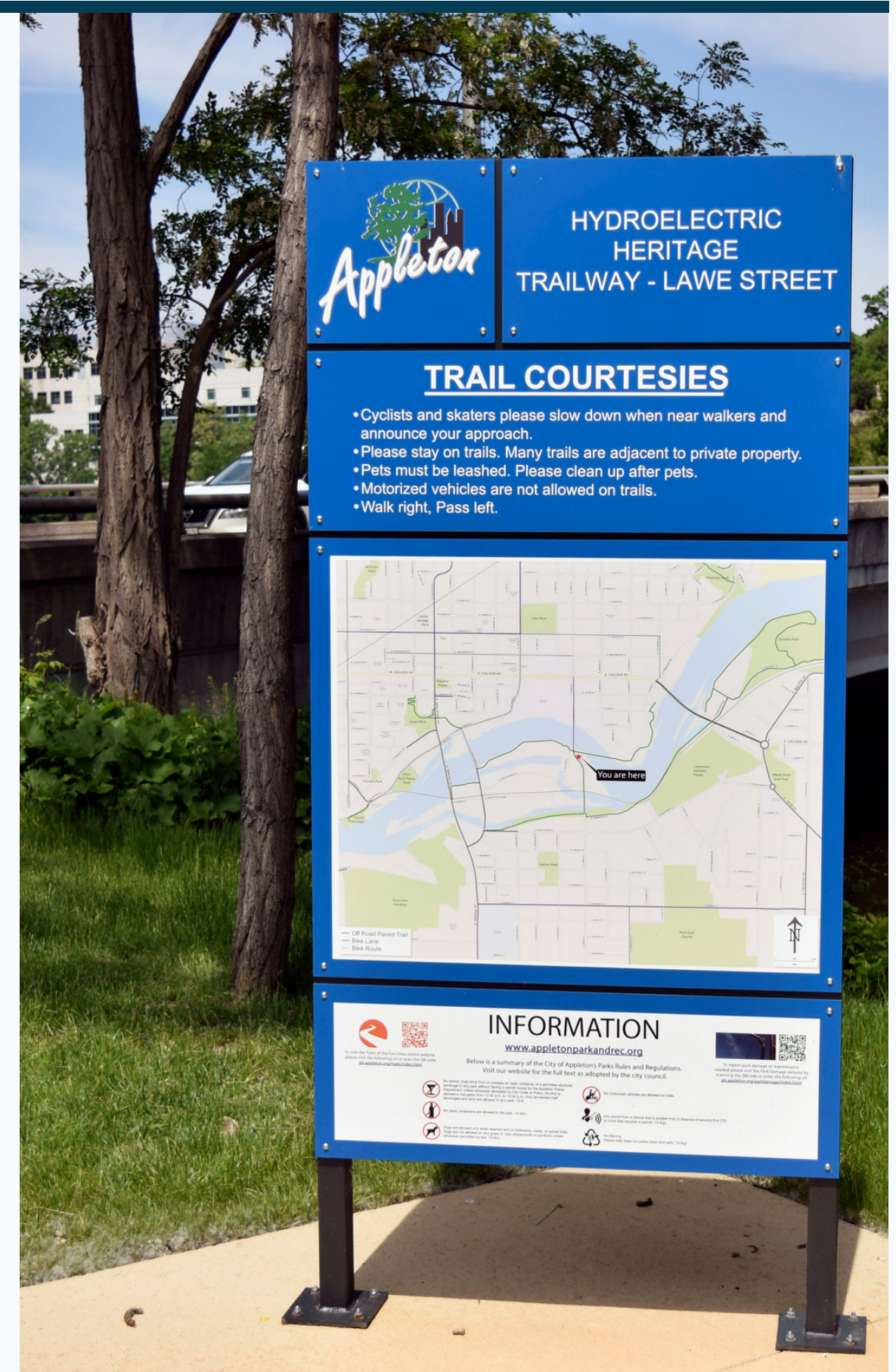
During the first years of its history, there were three villages where Appleton now stands: Lawesburgh on the east side, Grand Chute on the west side and Appleton in the middle. The three settlements were incorporated under the name of Appleton as a village in 1853, and later as a city in 1857.

The Fox River, which runs through the city, has always played a vital role in the life of our community. In the mid-nineteenth century, the Fox River provided waterpower for flour and paper mills, the first of which was built in 1853. To provide electricity to the paper industry, the Vulcan Street Hydroelectric Central Station began operation on September 30, 1882, becoming the first in the nation. The Hearthstone House, which still operates as a museum, was the first private residence in the world powered by a hydroelectric central station.

Appleton has a history of innovation, with telephones being installed in local businesses starting in 1877, and with the first commercially successful electric streetcar company launched in 1886. Electric streetlights replaced gas lamps on College Avenue in 1912. As of the 2020 census, Appleton has a population of 75,644. The largest employers are in health care, financial service, education, government, and manufacturing.

Reference:

<https://www.appleton.org/government/about-the-city-of-appleton>



# Appleton's History of Sustainability

The City of Appleton has demonstrated innovative leadership in sustainability from the very beginning including resiliency, climate mitigation and adaptation. As a regional leader, we have already accomplished many of our sustainability objectives. Major accomplishments include:



Installation of a 300-kw solar array at our Municipal Services Building to replace over 50% of electrical usage.



Converted 100% of all city-owned streetlights to LED.



Installed ultraviolet light disinfection at the Water Plant reducing electrical usage by 1.3 million kWh annually.



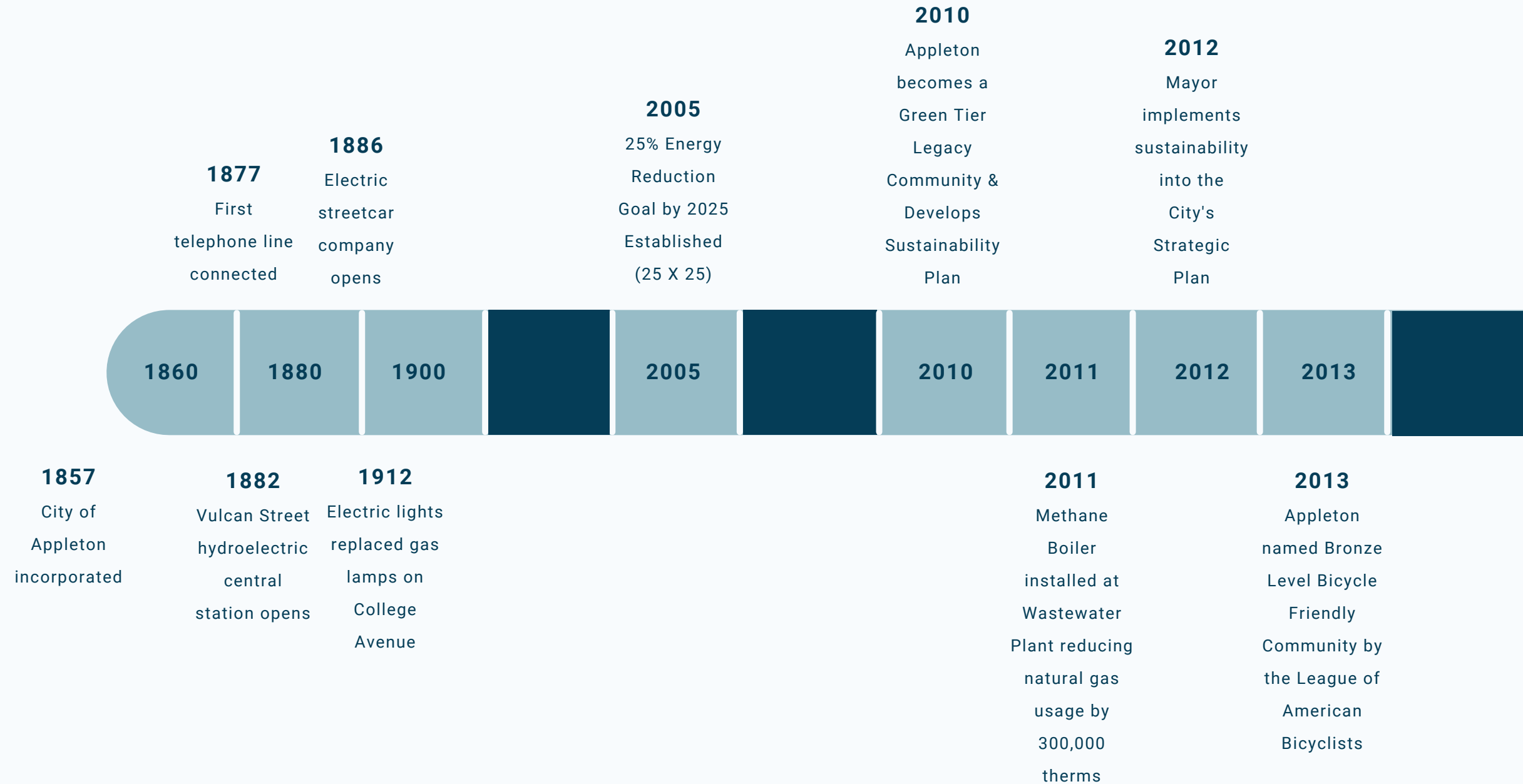
Installed 51 wet ponds, 12 dry ponds and 9 biofilters to improve water quality and quantity benefits to the community.

# Timeline

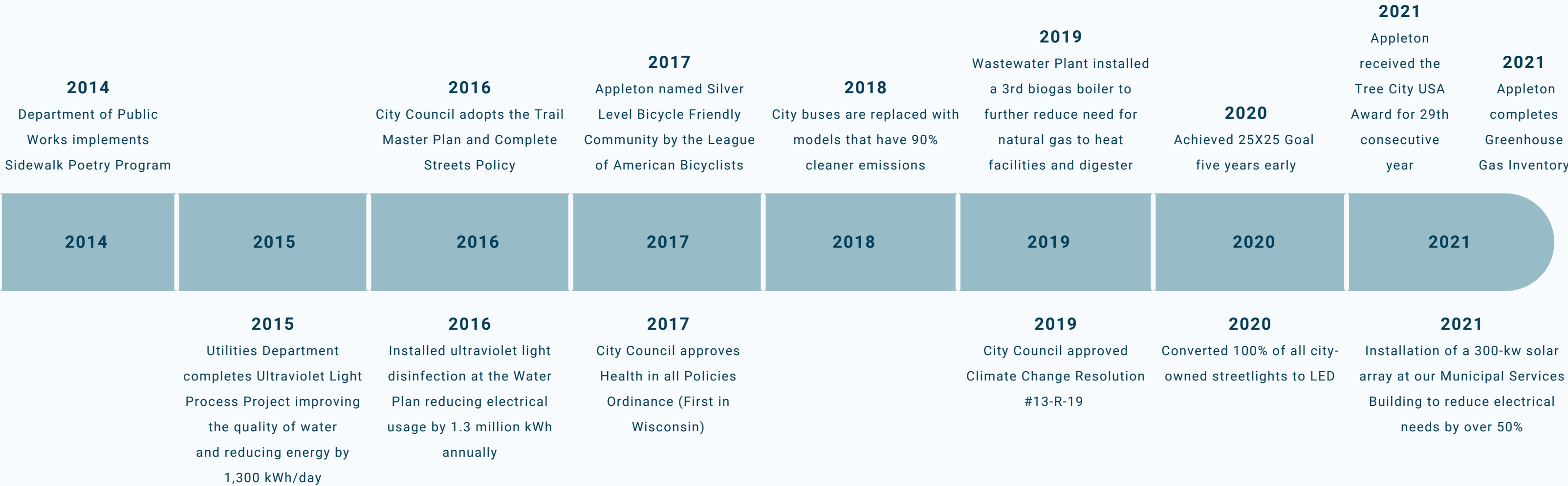
In addition, the city implements numerous Energy Consumption, Waste, Renewable Energy, Health, Transportation, Water Management and other projects and programs to improve resiliency, climate mitigation and adaptation within the City of Appleton.

Sustainability goals and achievements are incorporated in these additional documents found on the City Sustainability website:

1. [City of Appleton Comprehensive Plan](#)
2. [City of Appleton Trails Master Plan](#)
3. [Health in All Policies Ordinance](#)
4. [Parking Study](#)
5. Complete Streets Policy
6. Methane Gas Utilization Plan
7. City of Appleton Strategic Plan
8. Departmental Strategic Plans



# Timeline (continued)



# Greenhouse Gas Inventory - Municipal

EHSE Management Solutions, LLC conducted a municipal greenhouse gas inventory for the City of Appleton in 2021. This Municipal Greenhouse Gas (GHG) Emission Inventory was completed following the guidelines in Global Protocol for Community-Scale Greenhouse Emission Inventories or GPC. This GHG Inventory includes municipal emissions generated within the following scope and boundary:

- Scope 1 emissions from stationary municipal energy sources
- Scope 1 emissions from municipal vehicles and other mobile equipment and regional transit vehicles
- Scope 2 emissions from stationary municipal energy sources
- Scope 3 emissions from landfilled waste generated by the city
- Scope 3 emissions from transportation sources from regional transit vehicles

## Data Sources and Calculation Methods

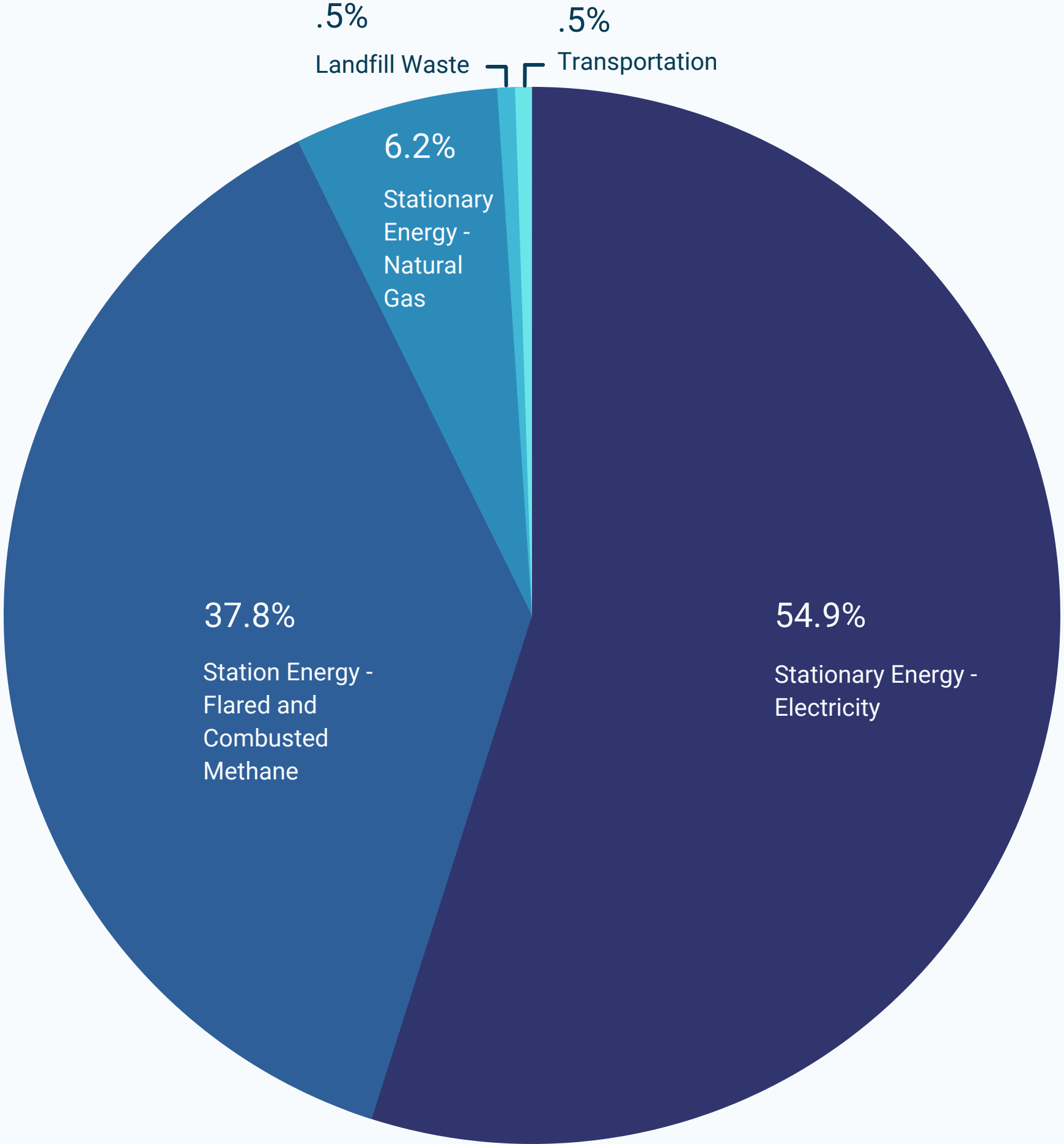
Category	Data Collected	Data Units
Municipal buildings, facilities, streetlights and signals	Electricity Natural Gas	Kwh Therms
Municipal vehicles and other mobile equipment	Gasoline and diesel	Gallons and miles
Wastewater generated methane	Methane combusted and flared	Cubic feet
Waste generated by municipal employees	Landfilled waste	Tons
Regional transit vehicles	Valley Transit miles and fuel usage	Gallons and miles

## Summary of city of Appleton Municipal GHG Emissions

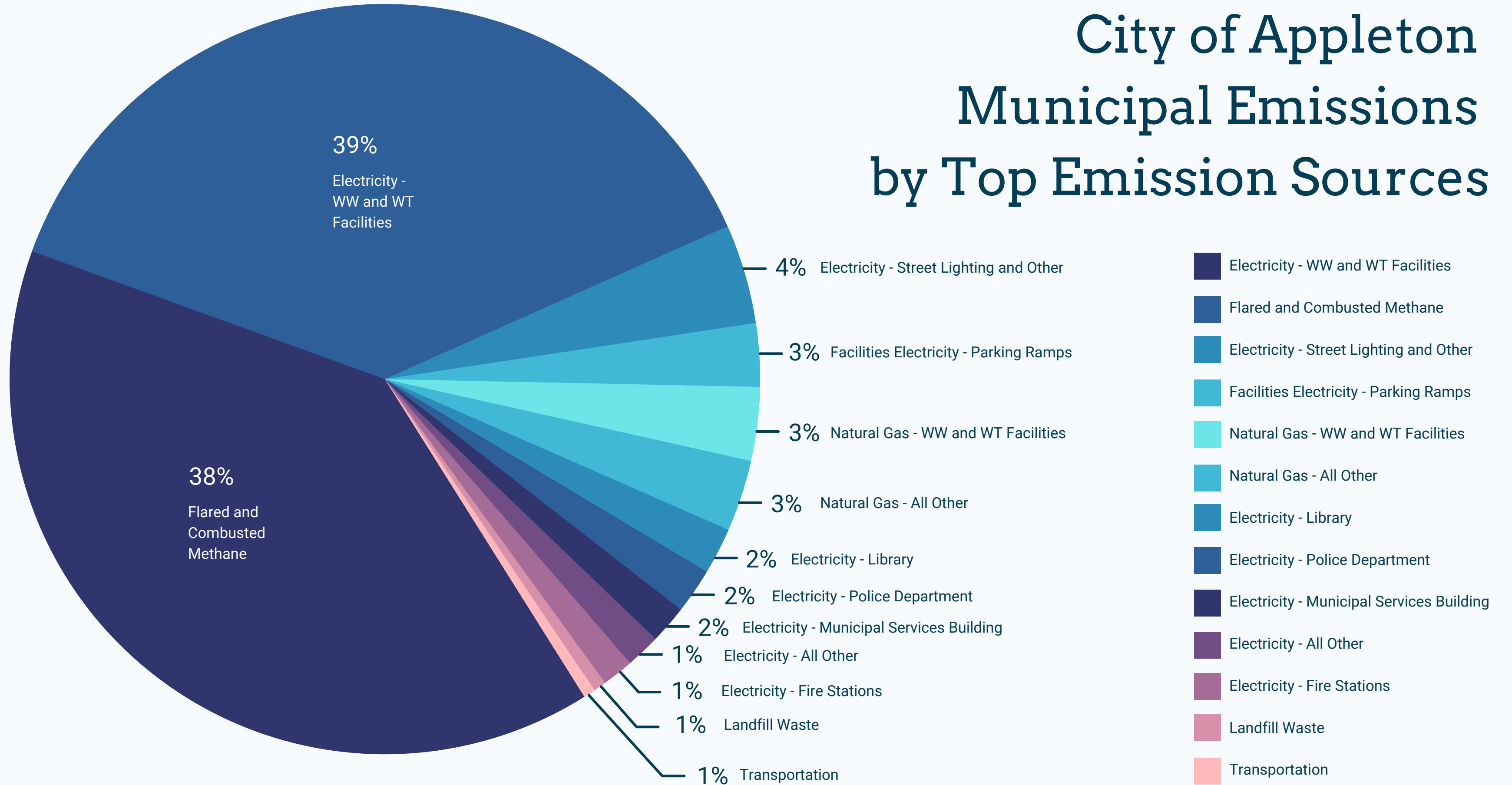
GPC recommends reporting of emissions by scope and including an assessment of the quality of the data and emission factors, following a High-Medium-Low rating.

Sector	2020 GHG Emissions (Metric Tons CO <sub>2</sub> e)					
	Scope 1	Scope 2	Scope 3	Data Quality	Emission Factor Quality	Comments
Stationary Energy (electricity & natural gas)	1,097	9,636	Not Applicable	H	H	Does not include leased lights.
Stationary Energy (methane combusted and flared)	6,631	Not Applicable	Not Applicable	H	M	Emissions for flare based on EPA petroleum refinery flare equation.
Transportation	0.25	Not Applicable	Not Applicable	M	H	Actual Valley Transit VMT within City of Appleton not known. Assumed 60% contribution based on evaluation of service area.
Waste (landfilled waste)	Not Applicable	Not Applicable	95	M	H	Actual waste generated by City and landfill not known. EPA rate used for waste generated by employee per day.
<b>TOTAL</b>	<b>7,728</b>	<b>9,636</b>	<b>95</b>			

# City of Appleton Municipal Emissions by Sector



# City of Appleton Municipal Emissions by Top Emission Sources



# The Taskforce Charge

Resolution #13-R-19 was submitted by Alderpersons Alex Schultz (District 9), Vered Meltzer (District 2), Denise Fenton (District 6) and Corey Otis (District 15) on October 2, 2019. The resolution was referred to the Parks and Recreation Committee and was approved by the Common Council on November 20, 2019. Resolution #13-R-19 included statements relating to the impacts and causes of climate change and resolved that the Taskforce be created with this charge:

“Appleton hereby establishes a taskforce named the “Appleton Taskforce on Resiliency, Climate Mitigation and Adaptation” to convene area leaders for the purpose of making practical recommendations consistent with the 2018 Intergovernmental Panel on Climate Change (IPCC) and the Fourth National Climate Assessment (NCA4) reports so the City of Appleton may meet the goal of achieving net zero greenhouse gas emissions by 2050, or sooner; mitigate the adverse effects of multiple sources of pollution; reduce waste in energy and food production stream; address resource depletion and other human-induced environmental stressors; increase our protection efforts of native biodiversity and reduce the spread of invasive species; and adapt to the growing threats of climate change by establishing enhanced conservation and alternative use policies that empower the city, businesses and individual citizens to deploy alternative methods of traditional resource management and energy production.”

The Taskforce is to advise the city of its recommendations by providing:

- a roadmap of required and measurable government actions to accomplish greenhouse gas reduction goals
- a comprehensive list of actionable items and potential implementation costs to address climate mitigation, all aspects of waste management, biodiversity protection and enhanced resiliency
- a list of outside experts who may be used to further the goals of the Taskforce

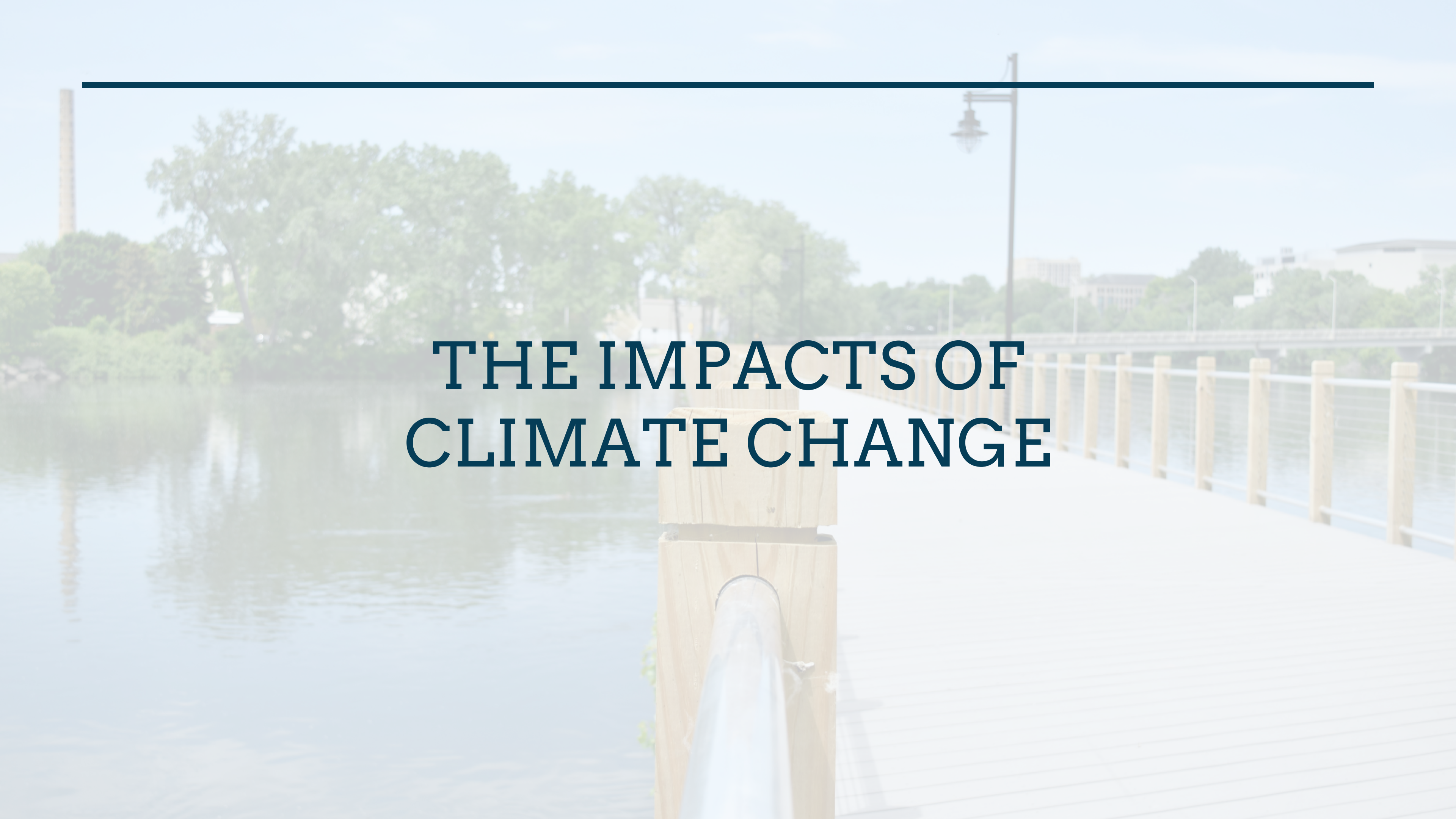
The Taskforce was appointed by Mayor Tim Hanna in January 2020. The first meeting occurred on February 5, 2020, and there were three more meetings before the city suspended all in-person meetings as part of restrictions enacted to control the spread of COVID-19. Because the Taskforce was unable to meet for most of the period after passage of the resolution, Mayor Woodford extended the date for completion of the draft report to November 1, 2020.

Subcommittees were formed and continued work on the draft plan through virtual meetings throughout the spring and summer of 2020. The draft report was released to the community for comment in mid-October of 2020 and those comments were reviewed and taken into consideration before the draft report was released on November 1, 2020.

After the Taskforce released the first draft of the Climate Action Plan Proposal, the city hired EHSE Management Solutions LLC to consult on the final report and to perform a Greenhouse Gas Inventory based on city operations.



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A wooden pier with a railing extends into a body of water. In the background, there are trees and a city skyline under a blue sky. The text "THE IMPACTS OF CLIMATE CHANGE" is overlaid in the center.

# THE IMPACTS OF CLIMATE CHANGE

# Global Impacts

Many reports were used by the Taskforce to explain the impacts of climate change and to support the work of the Taskforce. The most notable is the latest United Nations Intergovernmental Panel of Climate Change (IPCC) Sixth Assessment Report (AR6) which was issued on August 2, 2021. The IPCC is an international scientific body that provides the most up-to-date information about climate change. This unbiased group aims to “provide policymakers with regular scientific assessments on climate change, its implications and potential future risks, as well as to put forward adaptation and mitigation options.”

The IPCC AR6 report presented many global impacts of climate change. These quotes from the report were deemed especially notable by the Taskforce.

***“It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred.”***

***“The scale of recent changes across the climate system as a whole and the present state of many aspects of the climate system are unprecedented over many centuries to many thousands of years.”***

The report presents these alarming statistical impacts of climate change with high confidence:

- Atmospheric carbon dioxide concentrations in 2019 were higher than at any time in the last 2 million years.
- Concentrations of methane and nitrous oxide in 2019 were higher than at any time in at least 800,000 years.
- Global surface temperature has increased faster since 1970 than in any other 50-year period in the last 2000 years.
- Between 2011 and 2020, the annual average Arctic Sea ice area reached its lowest level since at least 1850.
- Global mean sea level has risen faster since 1900 than over any preceding century in the last 3000 years.

References:

[United Nations Intergovernmental Panel of Climate Change \(IPCC\) Sixth Assessment Report Climate Change 2021/The Physical Science Basis/Summary for Policymakers](#)



# National Impacts

Nationally, the 2021 IPCC Report states the following climate impacts for North America.

- Increases in drought and fire weather in WNA and CNA and will continue to increase in the future particularly at higher warming levels (high confidence, but medium confidence for fire weather in CNA)
- Projected increase in extreme precipitation (very likely)
- Projected increases in precipitation in northern part of CNA in winter (medium confidence).
- Expected increase in river and rain event flooding (medium confidence).

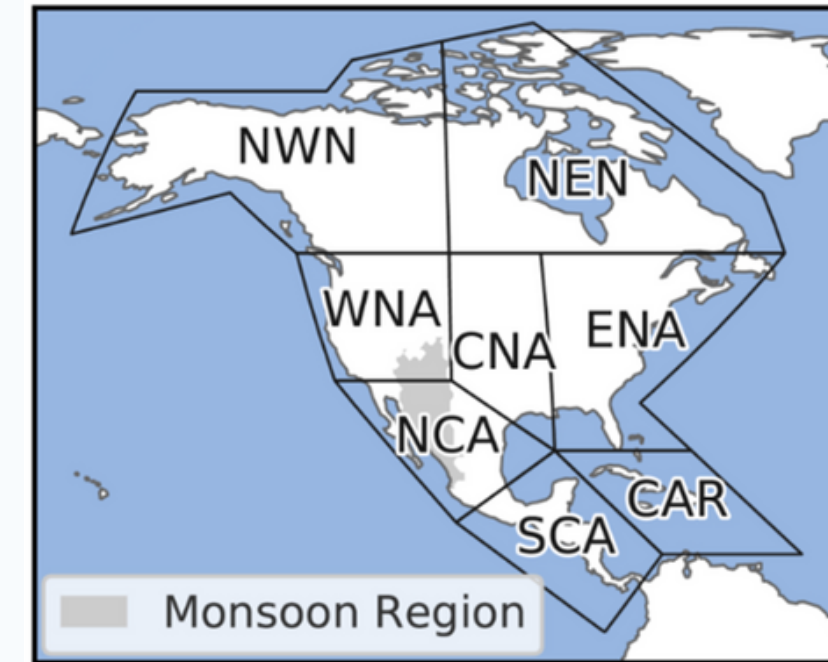


Figure 1: United Nations Intergovernmental Panel of Climate Change (IPCC) Sixth Assessment Report (AR6) August 2, 2021.

## GLOBAL AND NATIONAL CLIMATE CHANGE THREATS

How do the increases of temperature, sea level, extreme heat, fires, and floods affect people in their day to day lives? That can vary widely depending on location and socio-economic status.

Threats to day to day lives of people around the world include:

- Relocation of entire cities
- Food and water shortages
- Increased cost of food and consumer goods
- Widespread poverty and homelessness
- Increased spread of disease
- Increased war over limited resources
- Decreased ability to work due to extreme heat
- Exorbitant costs to adapt coastal areas to rising sea levels

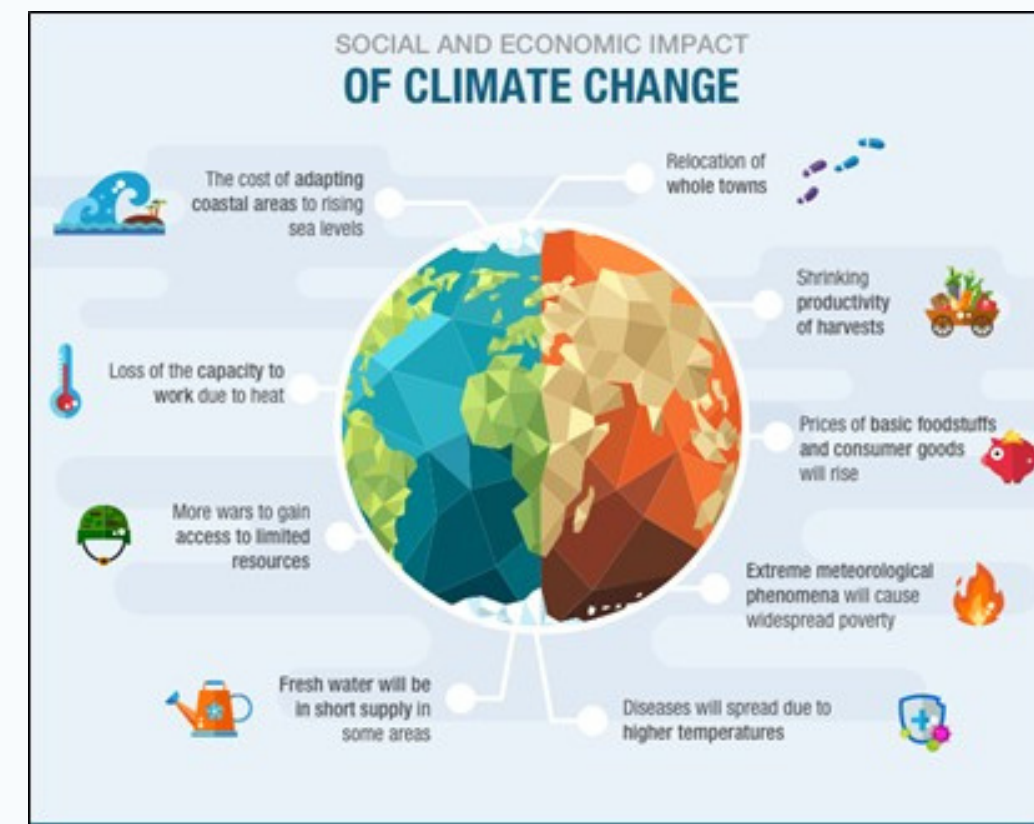


Figure 2: by Iberdrola, global renewable energy utility

# Local Impacts

The Wisconsin Initiative on Climate Change Impacts (WICCI) report to the Governor’s Task Force on Climate Change in July of 2020 determined that Wisconsin has become 2.1 °F warmer since the 1950s, with winters warming more rapidly than summer. The updated trends confirm that nighttime temperatures are warming more than daytime temperatures.

## WI ANNUAL TEMP TO INCREASE 4-9°F BY 2050

The WICCI projections show that Wisconsin’s average annual temperature is expected to warm by 4 to 9 °F by 2050. Overall, the expected rate of warming is four times greater than what we experienced since 1950. By 2050, the number of extremely hot days in Wisconsin is likely to triple (number of days where temperature exceeds 90°F), and the number of extremely hot nights is likely to quadruple (number of nights when temperature stays above 70°F). Under the scenario where greenhouse gas emissions remain high, southern Wisconsin may experience 80 to 90 days per year – nearly an entire summer – with high temperatures exceeding 90°F by the end of this century.

## 2000-2010 IS WISCONSIN’S WETTEST DECADE ON RECORD

Wisconsin is also becoming wetter, with all nine of the state’s climate divisions reporting their wettest decade since the 2011 WICCI Assessment Report was released. Since 1950, Wisconsin’s annual precipitation has increased by 4.5 inches, or 15%. Extreme precipitation events are becoming more common, with many communities experiencing 100 year or greater rainfall events over the last decade. Research has shown that extreme flooding events such as 100, 500 and 1000-year events that occurred in Northern Wisconsin in 2012, 2016, and 2018, and in Southern Wisconsin in August of 2018, are most likely caused by a warming climate. A 25 % increase in intense precipitation days is projected, with extreme precipitation events increasing throughout the state.

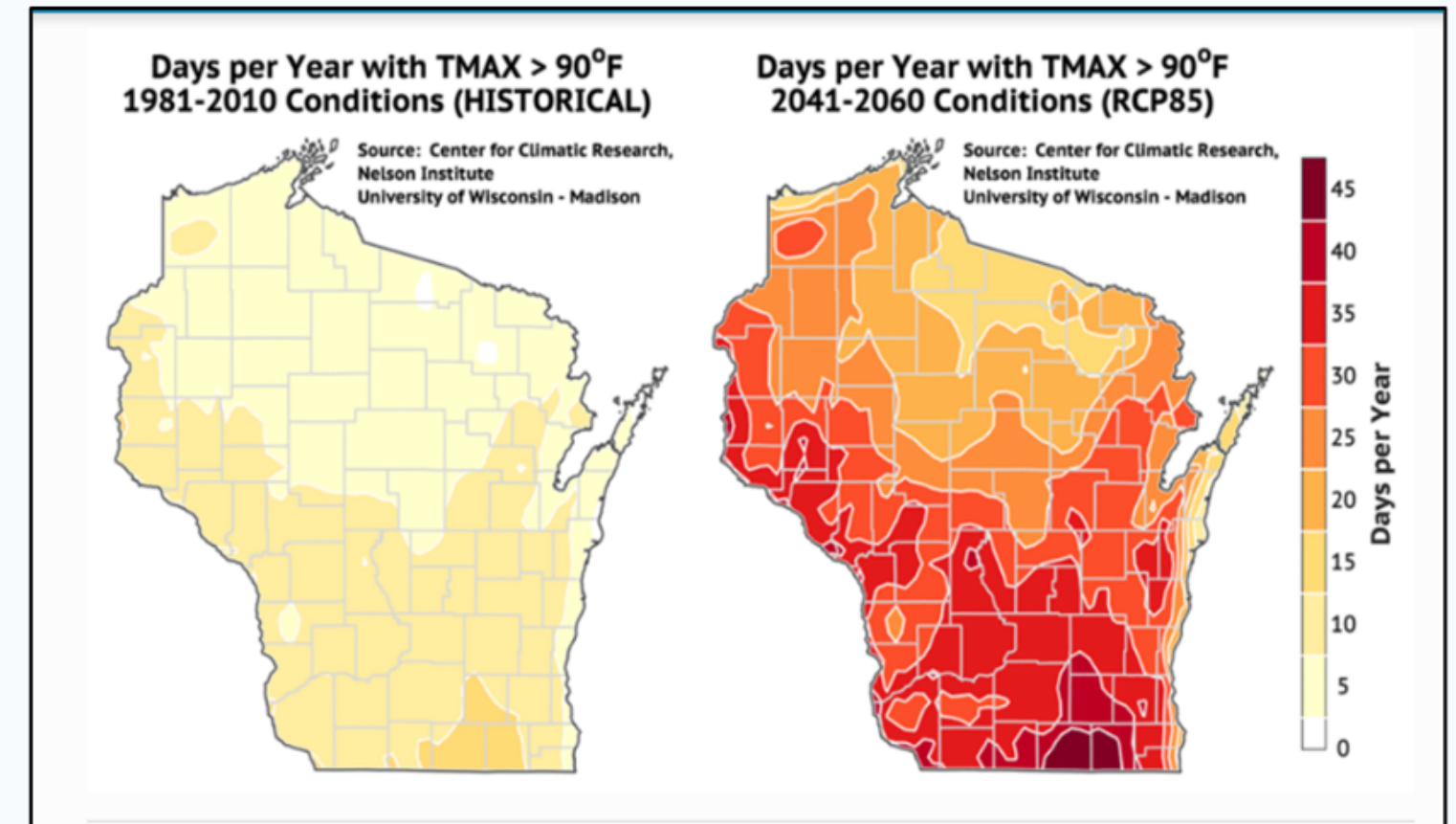


Figure 3: Projected number of days per year when the temperature exceeds 90°F for historical conditions (left) and by mid-21st century (right). From the Wisconsin Initiative on Climate Change Impacts. WI DNR

## LOCAL CLIMATE CHANGE THREATS

How do the local impacts of climate change such as warmer temperatures and increased rainfall threaten the everyday lives of people living in Wisconsin? Depending on people’s socio-economic background, health and source of income, Wisconsinites can be affected in a variety of different ways:

- Waterlogged soils have delayed planting in the spring and harvesting in the fall impacting income and food security.
- Extreme heat has decreased milk production in Wisconsin’s multi-billion-dollar dairy industry and increased water usage.
- Global supply chain shortages have impacted availability of food, consumer goods and building materials.



Figure 4: The Starting line of the annual Birkebeiner race in Hayward, WI lacked the snow required to run the race in February 2017. Courtesy of WI Skis.

### Warmer Temps Harm WI Winter Tourism

Lack of snow and ice have reduced skiing, snow-mobiling, ice fishing, sledding, skating and other winter sports that have annually generated nearly \$650 million to the Wisconsin economy. The American Birkebeiner ski race in northern Wisconsin was canceled two times in the last 22 years, in 2000 and 2017, due to lack of snow. The race can bring as many as 13,000 skiers from 46 states and 22 countries to the area.



Figure 5: Tom McHugh Construction addresses the housing crisis in the Fox Cities by building smaller, affordable homes. WPR 9/18/21

### Climate Migration Contributes to Housing Crises in Fox Cities

The effects of rising sea levels and extreme heat, fire, and floods in coastal and southern regions of the U.S. has caused climate migration to areas like the Fox Cities and contributed to the existing housing crisis in Northeast WI. The increased cost of building materials and decrease of people selling homes has created a lack of affordable housing. In the April 2021 Wall Street Journal/Realtor.com Emerging Housing Markets Index, the city of Appleton was ranked #14 in the top emerging real estate markets in the U.S.



Figure 6: Wisconsin's Great River Road follows along the Mississippi River through 33 historic river towns & villages for 250 miles. <https://www.wigr.com/>

### Flooding Impacts WI Summer Tourism Economy

Warm weather tourism in Wisconsin has been heavily impacted by the impacts of flooding. Tourism on Wisconsin's Great River Road along the Mississippi River declined 77% due to flooding in 2019. Flooding from more frequent and severe storms is particularly high on the west side of the state in communities along the Upper Mississippi River where flooding has occurred in seven of the last ten years and the amount of water flowing into the Mississippi River began to double in 2019.

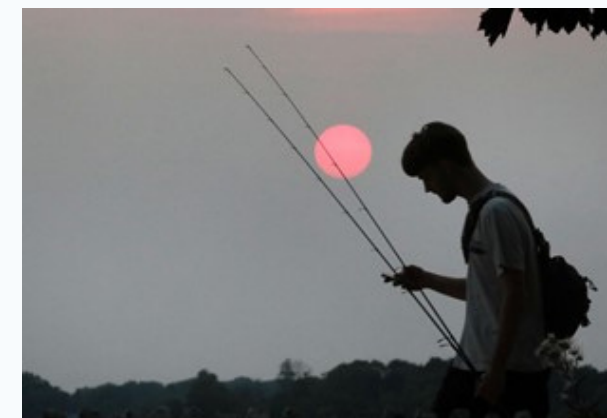


Figure 7: WI State Journal, July 20, 2021. The sky over Lac La Belle in Oconomowoc is tinged by drifting plumes of smoke generated by wildfires in the western United States and Canada.

### Increased Health Risks to Wisconsin Residents

Wisconsin's warming climate will increase adverse health outcomes including worsening chronic illnesses from heat and smoke, injuries and deaths from extreme weather events, infectious diseases spread by mosquitoes and ticks, illnesses from contaminated food and water, and increased allergies. In July 2021 Wisconsin was placed under an air-quality advisory due to smoke from wildfires as 83 active large fires burned more than 1 million acres in the U.S. and Canada.



Figure 8: City of Appleton traffic camera on College Avenue show

## Storms Cause Severe Damage to Housing and Infrastructure Across WI

In recent years, Appleton has experienced several extreme climate events including severe wind events in July and August of 2019 which caused over \$715,000 in damage to city property and the loss of over 750 terrace and public park trees. Overall, damage in Wood, Portage, Waupaca, and Outagamie Counties was estimated at \$8.13 million. Other storms have produced uncharacteristically large hail and rainfall adding to property damage and infrastructure repair costs.



Figure 9: Barker's Island beach in Superior, Wis., was closed in September 2021 due to a potentially toxic algae bloom in a warmer Lake Superior. Courtesy of Star Tribune 9-19-21

## Warm Weather Recreation Jeopardized by Pollution and Erosion

Severe storms, changing lake levels, and extreme heat are impacting warm weather activities including swimming, boating, fishing, birding, hiking, and biking. With 15,000 inland lakes, two Great Lakes, and over 56,000 miles of rivers, there is a high demand for beaches and water-based activities in WI. More frequent and severe harmful algal blooms in our lakes and an uptick in invasive species along with increased frequency and severity of storms reduce access for recreational opportunities around the state.



Figure 10: A WI Ash tree with Emerald Ash Borer disease shows increased woodpecker activity. Courtesy of Madison Gas & Electric.

## Damaging Impact of Invasive Species to Trees and Waterways

Changing climate produces favorable conditions for invasive species and greater risks for native species. Appleton will continue to see impacts like significant tree canopy losses due to the Emerald Ash Borer which necessitated the removal of most mature ash trees from public property. Tourism has also been impacted due to invasives like the Round Goby which has prevented a fully open and traversable lock system along the Upper Fox River since 2015. Signs of Emerald Ash Borer disease include dead branches throughout the canopy beginning at the top and/or new branches growing at the base of the trunk, vertical splitting, D-shaped holes and S-shaped patterns in the bark and increased woodpecker activity or damage.

## References

[The Wisconsin Initiative on Climate Change Impacts, 2020](#)

[https://www.geo.umass.edu/climate/stateClimateReports/WI\\_ClimateReport\\_CSRC.pdf](https://www.geo.umass.edu/climate/stateClimateReports/WI_ClimateReport_CSRC.pdf)

<https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-wi.pdf>

[https://nca2018.globalchange.gov/chapter/21#case-21\\_1](https://nca2018.globalchange.gov/chapter/21#case-21_1)

<https://www.startribune.com/lack-of-snow-cancels-birkebeiner-ski-race-for-second-time-in-its-history/414726153/>

NE WI Housing Shortage

<https://dnr.wisconsin.gov/climatechange/impacts>

<https://wicci.wisc.edu/wp-content/uploads/wicci-report-to-governors-task-force.pdf>

April 2021 Realtor.com/Wall Street Journal Emerging Housing Market Index

WI State Journal 7-20-21

<https://www.wpr.org/fox-valley-builder-provides-affordable-housing-its-not-easy>

<https://www.wbay.com/content/news/Appleton-July-storm-damage-totals-top-715000-539951231.html>

<https://www.wbay.com/content/news/Appleton-July-storm-damage-totals-top-715000-539951231.html>

<https://www.startribune.com/hot-summer-causes-algae-blooms-to-become-more-common-on-lake-superior/600098874/>

<https://wicci.wisc.edu/wp-content/uploads/wicci-report-to-governors-task-force.pdf>

<https://spectrumnews1.com/wi/milwaukee/news/2020/10/06/climate-change-report-details-current-and-future-impacts-in-wisconsin>



<https://www.mge.com/our-environment/trees-and-landscaping/emerald-ash-borer>

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# SUMMARY OF RECOMMENDATIONS

A paved path winds through a lush green park. The path is flanked by tall trees and dense foliage. A lamppost stands on the right side of the path. The overall scene is bright and verdant, suggesting a well-maintained outdoor space.



Priority	Recommendation	Sector(s)	Cost to City	Payback on City Investment	GHG Reductions for City	Forecasted Sustainability Benefit for Community
	<b>LEADERSHIP</b>					
	Climate Resiliency Staff Position	City	M	H	M	M
	Climate Change Commission	City	L	M	M	M
	Greenhouse Gas Inventory - Community	Residential   Business	L	L	L	L
	Education and Outreach/ Conduct research to determine successful approaches	City	L	NA	NA	NA
	Education and Outreach/Develop education plan to engage the community	City	L	L	L	L
	Education and Outreach/Develop an outreach plan to work with community partners	City	L	L	L	L
	DEI Language/ Land Acknowledgement	City	L	L	L	M
	DEI Language/ City Guidelines	City	L	L	L	M


Ranking Factors Key			
	H (high)	M (medium)	L (low)
Payback	<1 year	>1 year and <10 years	>10 years
Cost	>\$500k	>\$50k and <\$500k	<\$50k
GHG reductions	>1400 tons (<2,000,000 kwh or 350,000 therm energy reduction)	>200 tons and <1400 tons	<200 tons (<500,000 kwh or 25,000 therm energy reduction)

Priority	Recommendation	Sector(s)	Cost to City	Payback on City Investment	GHG Reductions for City	Forecasted Sustainability Benefit for Community
<b>WELLBEING AND PUBLIC SPACES</b>						
 	Green Buildings/Building Certification - Existing Buildings	City	H	M	M/L	M/L
	Green Buildings/Building Certifications - New Building Projects	City	M	M/L	M/L	M/L
	Green Buildings/Stormwater Management	City	H	M/L	L	M/L
	Green Buildings/City Sustainable Policy Implementation	City	M	M/L	M/L	M/L
	Green Buildings/Residential Green Building Certification Incentives	Residential	NA	NA	NA	M/L
	Green Buildings/Commercial Green Building Certification Policy	Business	NA	NA	NA	M/L
	Alternative Transportation/Hybrid & Electric Vehicle Incentives	Residential   Business	NA	NA	NA	M/L
	Alternative Transportation/Hybrid & Electric Vehicles/City Fleet	City	H	M	L	M/L
	Alternative Transportation/Alternative Transportation Infrastructure	City	H	M	L	M/L
	Alternative Transportation/Create Dedicated Position	City	M	M	L	M
	Alternative Transportation/Increase Use	Residential   Business	L	M	L	M/L


Ranking Factors Key	H (high)	M (medium)	L (low)
Payback	<1 year	>1 year and <10 years	>10 years
Cost	>\$500k	>\$50k and <\$500k	<\$50k
GHG reductions	>1400 tons (<2,000,000 kwh or 350,000 therm energy reduction)	>200 tons and <1400 tons	<200 tons (<500,000 kwh or 25,000 therm energy reduction)

Priority	Recommendation	Sector(s)	Cost to City	Payback on City Investment	GHG Reductions for City	Forecasted Sustainability Benefit for Community
<b>RESOURCE ALLOCATION</b>						
	Energy Consumption/Reduce Energy Use of Streetlights	City	M	M	M	M
	Energy Consumption/Install Motion and Daylight Sensors	City	M	M	NA	M
	Energy Consumption/Convert Indoor and Outdoor Lighting to LED	City	M	M	NA	M
	Energy Consumption/Reduce Energy Use with HVAC policy	City	M	M	M	M
	Energy Consumption/Adopt Energy Star Certified Appliances	City	M	M	M	M
	Energy Consumption/Reduce Exterior Lighting Install Motion Sensors	Residential   Business	L	M	NA	M
	Energy Consumption/Convert Lighting to LED	Residential   Business	M	M	NA	M
	Energy Consumption/Install Smart Thermostats	Residential   Business	M	M	M	M
	Energy Consumption/Adopt Energy Star Certified Appliances	Residential   Business	M	M	M	M
	Renewable Energy/Resolution Committing to Renewable Energy Goals	City	L	NA	M	M
	Renewable Energy/Reinvestment Fund from Energy Savings for Capital Improvements to Promote Energy Conservation or Renewable Energy	City	NA	NA	NA	M
	Renewable Energy/Solar Arrays on City Buildings	City	H	M	H/M	M
	Renewable Energy/Install Other Renewable Energy Sources	City	H	M	H/M	M

Ranking Factors Key	H (high)	M (medium)	L (low)
Payback	<1 year	>1 year and <10 years	>10 years
Cost	>\$500k	>\$50k and <\$500k	<\$50k
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Priority	Recommendation	Sector(s)	Cost to City	Payback on City Investment	GHG Reductions for City	Forecasted Sustainability Benefit for Community
<b>RESOURCE ALLOCATION</b>						
	Renewable Energy/Renewable Energy Procurement	City	H	M	H/M	M
	Renewable Energy/Renewable Energy for Private Property	City	M	M	M	M
	Renewable Energy/Microgrids for Private Property	City	M	M	M	M
	Waste/Analysis to Determine How Much Reusable or Recyclable Material Goes to Landfill	City	L	NA	NA	NA
	Waste/Financial Incentives to Send Less to Landfill	City	NA	NA	NA	L
	Waste/Seek Repeal of "Ban on Bans"	Residential   Business	L	M	L	L
	Waste/Enact City Waste Reduction Policies	Residential   Business	M	M	L	L
	Waste/Composting	Residential   Business	NA	NA	NA	L
	Waste/Community Tool Shed	Residential   Business	L	L	L	L
	Waste/Public Education Program on Zero Waste	City	L	L	L	L
	Waste/Reduce Food Waste by Grocery and Restaurants	City	NA	NA	NA	L
	Waste/Increase Commercial Recycling	City	NA	NA	NA	L
	Waste/Encourage Schools to Participate in Zero Waste Program	City	M	M	M	M

Ranking Factors Key	H (high)	M (medium)	L (low)
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Priority	Recommendation	Sector(s)	Cost to City	Payback on City Investment	GHG Reductions for City	Forecasted Sustainability Benefit for Community
<b>RESOURCE ALLOCATION</b>						
	Sustainable Procurement/City Purchasing Policy	City	M	H	L	H
	Sustainable Procurement/Ban Purchase of Plasticware	City	M	M	NA	M
	Water/Modernize Plumbing Infrastructure	City	H	H	L	H
	Water/Low Flow Fixtures in City Facilities	City	M	H	L	L
	Water/Flood Resilience Plan	City	H	H	L	H
	Water/Reduce Water Usage	Residential   Business	NA	NA	NA	M
	Water/Control Runoff	Residential   Business	NA	NA	NA	M

Ranking Factors Key			
	H (high)	M (medium)	L (low)
Payback	<1 year	>1 year and <10 years	>10 years
Cost	>\$500k	>\$50k and <\$500k	<\$50k
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# RECOMMENDATIONS

## CO-BENEFITS KEY



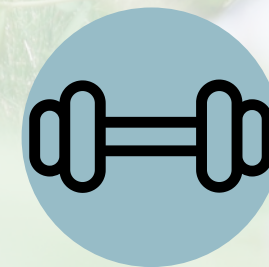
Increased engagement/  
awareness



Cleaner environment



Cost savings



Resilience



Health

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# Leadership Goals

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Climate action at the local government level and coordination with the business community now play a more important role than ever in developing climate solutions. In January of 2020, the United States Conference of Mayors published the results of a survey of 180 mayors about their cities' efforts in the areas of low-carbon transportation, energy efficiency in new and existing buildings, and green electricity and conservation efforts. A common thread was that cities, including a growing list of smaller cities, have become aware that cities need to demonstrate leadership in reducing their own carbon footprint. The recommendations documented in this section that the City of Appleton can take to further this goal, including recognizing the importance of the effort with designated staff and a permanent government/citizen body to promote and facilitate climate action, expanding our greenhouse gas inventory to the whole city and a focus on education and outreach to our community in order create the partnerships that will be required to achieve our goals.

<https://www.c2es.org/wp-content/uploads/2020/01/Mayors-Leading-the-Way-Volume-III.pdf>



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# Climate Resiliency Staff Position

Cities often face multiple risks from climate change and must make planning decisions despite uncertainty in climate projections. Climate-related severe weather events, and chronic impacts like flooding and extreme heat, are costly for cities and affect communities and local businesses. As climate impacts become more frequent and severe, cities will experience increasing impacts on their budgets and ability to attract new and protect existing businesses and residents. Resilience planning is highly localized, and no two towns will have identical resilience strategies. Some communities develop stand-alone climate resilience plans while others incorporate climate resilience into broader city plans.

We recommend that the City of Appleton create a position that fills this planning need and to continue the work of the taskforce. Cities and Counties such as Madison and La Crosse, have hired a staff position or multiple positions to work towards carbon neutrality and sustainability at the local level. The positions include titles such as Sustainability Coordinator, Environmental Program Coordinator, Climate Specialist, and Climate Data Assistant. Each municipality identified sources of funding for at least three years after the creation of the position. Sources of funding included grant funding and city funds from departments such as stormwater utility revenue and solid waste revenue. These municipalities could be contacted to better understand the process of creating such a position and identifying sources of long-term funding to ensure the position is sustainable.

## Examples

WI Office of Sustainability and Clean Energy – 2 staff

- Director
- Clean Energy Advisor

Dane County - [Office of Energy & Climate Change](#), 6 staff

- Climate Specialist
- Director of the Office of Energy & Climate Change
- Climate Data Assistant
- Climate Action Intern (2)
- Communications Intern

Madison – [Sustainability office](#), 6 staff

- Sustainability Initiatives
- Recycling
- Rain Gardens
- Water Quality
- Biking and Walking
- Transit

Milwaukee – [Environmental Collaboration Office](#), 5 staff

- Director of Environmental Sustainability
- Environmental Program Coordinator (3)
- Eco Sustainability Ambassador

La Crosse – [Sustainability Office](#), Sustainability Coordinator La Crosse County

Green Bay – [Sustainability Commission](#), 9 members

Oshkosh – [Sustainability Advisory Board](#), Staff Liaison

Eau Claire – [Green Team](#), 12 members

**Recommendation 1:** Create a city staff position to prioritize and organize climate change mitigation and resiliency efforts by the city. This position can also coordinate efforts between Appleton and neighboring counties such as Outagamie, Winnebago, Calumet and Brown.

**Actions:**

1. Identify tasks for the position, including recommendations in the Climate Action Plan, such as: infrastructure updates for energy efficiency and renewable energy production; building rating system administration; policy implementation for energy efficiency and sustainability in municipal operations; ensure that City resiliency policies consider inequities among residents of different races, abilities and socio-economic status; promote resiliency practices in families, businesses and farms in Appleton and surrounding areas; coordinate joint resiliency efforts with other nearby communities and counties; and coordinate with other communities to procure large-scale renewable energy through utility companies or other sources.
2. Define the role to include frequent listening sessions and collaboration with community members and to emphasize community feedback on policy proposals in terms of justice and equity for groups that are most affected by climate change, or that are least able to implement adaptations, specifically disabled and chronically ill residents, Black people, Indigenous peoples and other People of Color, and lower-income residents.
3. Define the position within the Mayor's office and its relationship with other city departments.
4. Identify potential revenue sources, such as state funding, grants, collaborative funding with other Fox Cities and Outagamie, Winnebago and Calumet Counties, and define a budget for the office and coordinator and include in the 2022 budget.

**References:**

1. [Climate Resiliency Specialist, NY](#)
2. [City Action on Resilience](#)



# Climate Change Commission

The Taskforce on Resiliency, Climate Mitigation and Adaptation created by Common Council Resolution #13-R-19 specified that the taskforce would meet for two years. Implementing the recommendations of the taskforce will require effort beyond that two-year term and may evolve as conditions change. We are thus recommending that the City of Appleton create a permanent body to ensure that the work of the taskforce will continue.

**Recommendation 1:** Create a Climate Change Commission to be appointed based on applications from the community and approved by the Common Council that will serve as an advisory body to the Appleton Common Council. The Commission will research, analyze, and implement, with Common Council approval, initiatives that support the city's resiliency, climate mitigation and adaptation goals, including the Climate Action Plan and any subsequent or updated plan.

## Actions:

1. Determine the responsibilities of the commission:
  - a. Advise the mayor and Common Council on issues related to climate change.
  - b. Collaborate with city staff to implement actions from the Climate Action Plan.
  - c. Assess and recommend specific innovative programs, policies, technologies, and models that advance the city's climate action goals and priorities.
  - d. Plan and undertake public education events to encourage residential and commercial participation in all climate action priorities.
2. Determine the composition of the commission.
  - a. The group should be composed of individuals from diverse backgrounds and experience, including scientific, business, education, and legal expertise, and lived experiences of groups that are harmed by climate change. There should be at least one city representative on the commission; ideally the proposed climate resiliency specialist.
  - b. There should be one or two alderpersons on the commission.
3. Determine the terms of the commission. Recommend overlapping terms to maintain a core group.
4. The mayor will appoint, and the Common Council will approve the commission members.

## Examples

1. Iowa City : <https://www.icgov.org/city-government/boards/climate-action-commission>
2. Prince George's County, MD:  
<https://www.princegeorgescountymd.gov/3741/Climate-Action-Commission>
3. Bloomington, MN: <https://www.bloomingtonmn.gov/pw/sustainability-commission>
4. Sacramento and West Sacramento, CA:  
<https://www.bloomingtonmn.gov/pw/sustainability-commission>
5. Kingston, NY: <https://kingston-ny.gov/ClimateSmartKingston>
6. Sausalito, CA: <https://www.sausalito.gov/city-government/boards-and-commissions/sustainability-commission>



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# Greenhouse Gas Inventory - Community

A greenhouse gas (GHG) inventory is essential to monitor progress towards the Climate Action Plan goals. A GHG inventory identifies sources of emissions that are emitted over a period of time, in this case, the GHG emissions from the entire City of Appleton annually. By identifying emissions sources, we can better identify the most impactful solutions.

“You can’t cut what you don’t count” is a well-known saying in GHG emissions protocol. To set GHG reduction goals, the City of Appleton must first know what its current GHG emissions are. A GHG inventory will provide a baseline from which to improve upon. Understanding the relative contributions of different sources of GHG emissions also will allow the proposed Climate Change Commission to prioritize goals and strategies that target sectors that are the biggest contributors. Completion of a GHG inventory will also provide a means for the proposed Climate Resiliency Specialist to evaluate progress toward the goal of net-zero carbon emissions by 2040.

There are numerous GHG inventory tools available. The Global Covenant of Mayors for Climate and Energy (GCoM) share a long-term vision of supporting voluntary actions to combat climate change. It has commitments from over 10,000 cities and local governments, including Eau Claire, LaCrosse, Racine, Milwaukee, Ashland, and Wisconsin Rapids in Wisconsin. Importantly, GCoM offers valuable assistance in creating a GHG inventory. The EPA also offers a free interactive spreadsheet that calculates GHG emissions for local government operations and for community wide GHG emissions.

**Recommendation 1:** Calculate greenhouse gas emissions for the City of Appleton, including all business, industry, households, transportation and other sources of emissions and sequestration in the community.

## Actions:

1. Join the Global Covenant of Mayors for Climate & Energy.
2. The mayor, or the mayor’s designee, will select a team of city officials, community members and business leaders to work on the greenhouse gas inventory.
3. Select an inventory tool and define methodology.
4. Complete a GHG inventory by July 1, 2022.
5. Create a city dashboard that displays progress toward GHG reduction goal.

## References:

1. Global Covenant of Mayors for Climate and Energy <https://www.globalcovenantofmayors.org/join-us/>
2. Community Greenhouse Gas Inventory Tool
3. <https://www.mapc.org/planning101/community-ghg-assessment/>
4. Greenhouse Gas Protocol <https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities>
5. EPA Local Greenhouse Gas Inventory Tool <https://www.epa.gov/statelocalenergy/local-greenhouse-gas-inventory-tool>

# Education and Outreach

The work of climate education and engagement is shared and mutual. To ensure cooperation between Appleton residents and the city, it is necessary that the public understands the many challenges that climate change presents and what can be done to mitigate those challenges.

UNESCO (United Nations Educational, Scientific and Cultural Organization) states:

*Education is an essential element of the global response to climate change. It helps people understand and address the impact of global warming, increases “climate literacy” among young people, encourages changes in their attitudes and behavior, and helps them adapt to climate change related trends.*

*Education and awareness-raising enable informed decision-making, play an essential role in increasing adaptation and mitigation capacities of communities, and empower women and men to adopt sustainable lifestyles.*

*(<https://en.unesco.org/themes/addressing-climate-change/climate-change-education-and-awareness>)*

While this report is preliminary, the ongoing work of the proposed Climate Change Commission and Climate Resiliency Specialist should include engaging with elected officials and city staff, community members and other institutions, to share information and gather input.

For any city’s sustainability initiatives to succeed, they must have the support of the residents by providing adequate information to people about the benefits of the program, and the costs of not having the program. Building a reciprocal relationship with local, state, and regional schools is vital to sharing information, resources, and expertise. Community-based seminars, workshops, and programs facilitated by local experts, educators, and students will inform the public of climate change impacts and mitigation strategies. Education will shore up the community’s foundation for resiliency and adaptation. Moreover, as climate change is such a broad issue, sustainability efforts require cooperation, collaboration, and consensus, between government bodies and neighboring municipalities for the mutual benefit of all. The Education and Outreach section is designed to educate all the city’s residents and to create transparency surrounding the city’s path to carbon neutrality.

**Recommendation 1:** Conduct research to learn about successful climate change education and outreach programs to be used to create such initiatives in Appleton.

**Actions:**

1. Collect information using tools such as surveys with consistent questions to benchmark current state and progress.
2. Engage volunteers for canvassing and to seek participation in surveys.
3. Host listening sessions.
4. Research new developments and activities to stay current and innovative.

**Recommendation 2:** Develop and execute an education plan that engages the community to learn about the causes, threats, and solutions to climate change.

**Actions:**

1. Create and maintain engaging content on the city sustainability website and social media pages.
2. Engage the community at their level of understanding/acceptance.
3. Work with schools to include climate change in school environmental curriculum and active transportation in physical education curriculum.
4. Offer content to add environmental significance to existing education programs from other groups/organizations.
5. Encourage divestment from fossil fuels and transition to renewable energy in schools and universities.
6. Encourage schools, colleges, and universities to reduce carbon footprint and move towards zero waste, 100% clean energy and zero net emissions.
7. Promote conversations through school PTOs.
8. Create curriculum partnerships with AASD, Appleton parochial schools, FVTC, UW-Fox, Lawrence University, Appycademy, Free School, UW-Oshkosh.
9. Work with organic farmers, local chefs, and nutritionists to provide menu planning and cooking workshops that feature plant-based and local food menus. Coordinate with existing Parks and Recreation Department cooking classes for children and adults.
10. Have health and fitness industry experts give workshops on the benefits of a plant-based diet and switching to active modes of transportation.
11. Work with composting experts to provide education and workshops for residents to learn about backyard composting and community composting.
12. Offer workshops relating to nature and the mental health benefits of spending time in nature.
13. Engage local artists and writers to create a cultural strategy showcasing art, storytelling, and poetry to highlight climate problems and solutions.

**Recommendation 3:** Develop and execute an outreach plan to work with community partners to share the benefits of working together to mitigate the impacts of climate change through outreach.

**Actions:**

1. Secure invitations to present at existing in-person and online events.
2. Seek opportunities to engage the community where they are.
3. Partner with Influencers to increase impact and reach. Offer education on
  - a. Lifestyle
  - b. Professional development
4. Provide a city forum where partners can showcase their work on climate mitigation and adaptation.
5. Invite local Indigenous Nations to teach traditional and contemporary land stewardship understanding.
6. Work with City of Appleton department heads to incorporate climate outreach into their action plans.
7. Engage Appleton Public Library to develop book studies, clubs and programming that address climate change and solutions.
8. Develop awards and storytelling that showcase successes in our community.
9. Taskforce members may take on an ongoing role in public education and engagement consistent with the charge from Council, and approved City plans and policies.

**References:**

1. [San Diego, CA](#)
2. [Emeryville, CA](#)
3. [Albuquerque, NM](#)
4. [Iowa City, IA](#)
5. [EPA Community](#)
6. [Revitalization DNR](#)
7. [Climate Change Solution](#)
8. [Center for American Progress Framework for Local Action](#)



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# DEI Language in City Policy and Communication

To face the climate crisis we must include environmental justice and equity at every juncture. That means working with the communities most impacted by climate change and who may be negatively affected by City mitigation, adaptation, and resilience policies. In some cases, these communities are already enacting responses to climate change from which the City can learn. Furthermore, the City needs to work with these residents to ensure that policies adopted by the City support and do not harm them. As a Taskforce, equity and justice was part of our discussion throughout our work. We continually considered how our recommendations would impact various groups in the city.

The climate crisis is not evenly distributed. Different groups are impacted differently along intersections of race, gender, disability, class, income, wealth, ethnicity, national origin, home language and other identity markers.

We can't adequately or appropriately describe and address these differences in impact without diversity, equity, inclusion, and justice guidelines, created in collaboration with affected groups. To do this, the City will need to engage with various community groups that might be harmed by environmental factors and by city policies to learn how these groups want to be represented and considered in City policies and communications. These recommendations are directed at the City of Appleton and could also be adopted and applied in business and industry.

**Recommendation 1:** Adopt a City of Appleton Land Acknowledgment.

**Actions:**

1. Identify Indigenous Nations to consult on drafting and adopting a Land Acknowledgment.
2. Pay a proper fee to the Indigenous Nations consulted.
3. Identify ways to stay engaged with the Indigenous Nations named in the acknowledgment in an on-going relationship.
4. Enact policy regarding when and how the Land Acknowledgement will be used, and train relevant staff on it.

**Recommendation 2:** Create policy and guidelines for including diversity, equity, inclusion, and justice language in the City's Climate Action Plan and in all City policies.

**Actions:**

1. Identify groups and residents to engage in co-crafting policies and guidelines for addressing diversity, equity, inclusion and justice in City policies and communications.
2. Include timelines and processes for reviewing and revising the policy regularly and as needed, including continually identifying groups that should be included in the process.
3. Train City staff and relevant partners, such as the Common Council, on how to use the policy.

Consultants: City of Appleton Diversity, Equity, and Inclusion Coordinator; Menominee Nation; Ho-Chunk Nation; other Indigenous Nations deemed advisable by the DEI Coordinator or Indigenous Nations consulted; various community groups impacted by climate change and city policy; The Wisconsin Environmental Equity Tool (WEET) <https://wedc.org/rural-prosperity/environmental-equity/>

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# Wellbeing and Public Space Goals

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In this section we make recommendations to reduce the impact that our infrastructure has on the environment and to improve our wellbeing in public spaces. Infrastructure is the built environment that supports our daily activities. It includes buildings, roads, sidewalks, bike and pedestrian paths and the green open space in between. How we manage city infrastructure can lower greenhouse gas emissions, improve air quality, reduce the urban heat island effect, save energy costs, reduce waste, connect community members to each other and to nature, and improve the health and quality of life for all community members.



# Green Buildings



An important part of reducing the impact of the built environment on people, planet, and our bottom line is to measure what we manage. Building certification systems such as LEED, Fitwel, WELL, National Green Building Standard, and Zero Energy are some examples of commonly used building standards. A building standard or rating system is a tool that enables stakeholders (employees, community members, etc.) to establish a baseline from which to set goals on reduction of energy, water, and waste, and improve indoor air quality. The measurement and verification of these elements are approved and qualified by the third party and the results can be used to champion the savings and health benefits that come from these systems.

## CITY INITIATIVES

**Recommendation 1:** The City selects one existing building per year to maintain a third-party certification system for, such as LEED O+M (Operations and Maintenance), Net Zero, WELL, Fitwel, etc.

### Actions:

1. Research examples of other municipal and business use of rating systems for existing buildings.
2. Make cost benefit analysis of existing building certifications for a city building.
3. Issue RFP for existing building certification administration and select partner OR
4. Resiliency Specialist manages certification with partner and City stakeholders OR Resiliency Specialist manages certification process without a partner.
5. Update, track and report on baseline, goals, and progress of certified buildings on Appleton sustainability website.

### Examples:

1. [Milwaukee City Hall: LEED Gold certified Existing Building](#).
2. [222 W. College Avenue: LEED O+M certification in progress](#)
3. [Eau Claire Net Zero Energy Building Guide](#)

**Recommendation 2:** All new construction City projects include a cost analysis of a building certification system in the pre-design phase planning showing the costs and payback of implementing a green rating system on the project.

### Actions:

1. Include the requirement for the cost analysis in the RFP for the project.
2. Use the cost analysis to justify implementing a building certification system in the new construction project.

**Recommendation 3:** Establish the use of effective stormwater management practices for City hardscape such as pervious pavement, rain gardens, and green roofs to reduce runoff and non-point source pollution of surface water.

### Actions:

1. Develop guidelines, determine methods and resources, and identify areas suitable for pervious pavement, rain gardens, and green roofs focusing on public visibility, existing conditions, and flood control potential.
2. Research successful pervious pavement installations such as the parking lot at the new Community First Credit Union in Fox Crossing made with porous pavers.
3. Train City staff on how to clear snow from and maintain pervious pavement, and how to care for green roofs.
4. Perform a lifecycle cost analysis comparing the cost of installing a green roof vs. a conventional roof at time of replacement on all City buildings.
5. Perform a lifecycle cost analysis comparing the cost of installing pervious pavement vs. the cost of traditional non-porous pavement at time of replacement at all City properties.

Example: [New Community First Credit Union Fox Crossing](#).

**Recommendation 4:** The City will serve as a leader of sustainable conduct by implementing green infrastructure at every opportunity in buildings and hardscape to reduce energy consumption, greenhouse gas emissions, waste, natural resource depletion, stormwater runoff and deleterious public health impacts.

### Actions:

1. Include policies for City employees into a sustainable management plan such as elimination of vehicle idling, use of electric mowers and leaf blowers, elimination of harmful pesticides, use of green cleaning products, a green purchasing policy and other green operations best practices.

## RESIDENTIAL & BUSINESS INITIATIVES

**Recommendation 1:** City of Appleton residents and businesses receive incentives to implement a green building rating system in their existing or new construction home or business such as Energy Star, LEED, Passive House, Zero Energy, HERS, EPS, National Green Building Standard, etc.

**Actions:**

1. Decide what incentive programs will work best for Appleton such as recognition, and subsidies or grants for income qualified residents and businesses.
2. Provide recommendations to City residents and business owners on what certifications might work best for them.
3. Share business and residential building certifications on the website to promote support and best practices.

**Recommendation 2:** Developers who wish to build new properties in the City of Appleton to include a green building certification such as Energy Star, LEED, Passive House, Zero Energy, HERS, EPS, or National Green Building Standard for the new development OR power it with a minimum of 50% onsite renewable energy.

**Actions:**

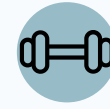
1. Include this policy in all language provided to those wishing to develop property in Appleton.

**References:**

1. [LEED Operations and Maintenance project checklist](#)
2. [Fitwel building certification](#)
3. [WELL building certification](#)
4. [City of Eau Claire Net Zero Energy Building Guide](#)
5. [City of Eau Claire Sustainability Plan](#)
6. [City of Milwaukee Sustainability Plan](#)
7. [Housing Authority of the City of Milwaukee](#)



# Alternative Transportation



Transportation includes all modes of getting around the city: walking, biking, wheelchair, and driving in single passenger vehicles, or public transportation. The City's commitment to reduce greenhouse gas (GHG) emissions caused by combustible fuel engines is reflected in the transportation infrastructure the city invests in, such as bike lanes and pedestrian routes, public transportation, electric vehicle charging stations, and a hybrid or electric fleet. Transportation infrastructure and habits have a profound impact on GHG emissions, and, in turn, climate change. Updating transportation infrastructure, policies, and habits to reduce GHG emissions are key to reducing our impact on climate change.

The transportation sector accounted for the largest proportion of GHG emissions in 2018 – 28%. (Of that amount, 59% is attributable to light duty passenger trucks and automobiles.) There are many forms of alternative transportation that will reduce GHG emissions, including hybrid and electric vehicles, bicycling, walking and public transportation. Individuals, businesses, and the city can all take action to reduce vehicle miles traveled (VMT) in the city of Appleton, reducing GHG emissions and promoting the health benefits of active transportation.

## References:

1. [EPA GHG Emissions Source](#)
2. [EPA Green Vehicles Fast Facts](#)
3. [EPA/Dept. of Energy Fuel Economy Calculator](#)

## CITY INITIATIVES

**Recommendation 1:** Increase the number of hybrid and electric vehicles registered in the city.

### Actions:

1. Develop a baseline system for tracking hybrid and electric vehicles registered in Appleton by using the state registration database.
2. Determine a goal for the percentage increase per year in the number of hybrid and electric vehicles registered in Appleton.
3. Create incentives for driving hybrid and electric vehicles such as free city parking for one year.
4. Increase the availability of electric vehicle charging stations in the city by installing at least two in every city parking lot both public and for municipal employees.
5. Apply for the Federal EV Tax Incentive.

**Recommendation 2:** Increase the number of hybrid and electric vehicles in the city fleet.

### Actions:

1. When older city vehicles require replacement, replace with hybrids, alternative-fueled vehicles, and electric vehicles.
2. Use WI Clean Cities Coalition as a resource for guidance on transitioning to a clean fleet and for government funding sources

**Recommendation 3:** Update infrastructure to support active transportation such as biking, walking and wheelchair use for commuting and general travel to reduce automobile use and improve health.

### Actions:

1. Add bike repair stations to parks and trails.
2. Increase bicycle capacity on and inside of city buses.
3. Add bicycle parking requirements to new development building permits and increase bicycle parking options, including indoor and protected options, for existing buildings.
4. Ensure that bike lanes are maintained and kept free of debris such as leaves, clippings and trash and do not plow streets so that the bike lanes and sidewalk ramps are blocked in winter.
5. Connect new and existing bike paths to improve the efficiency and safety of commuting by bicycle.
6. Build future active transportation paths so they can accommodate snow removal equipment.
7. Test infrastructure changes to help make active transportation an easier choice.
8. Provide bicycle and pedestrian friendly signage throughout the city.
9. Post signage that lists mileage and minutes by bike and walking between common destinations throughout the city.
10. Plan for cyclists and pedestrians in construction projects to prevent unreasonable detours.
11. Install automated visual bike counter to collect data on number of bikes in daily use.

**Recommendation 4:** Create a position in the city dedicated to active transportation that could implement initiatives such as:

### Actions:

1. Establish goals for increasing the number of trips by active transportation. Establish goals for reducing the number of trips by car.
2. Take a survey of residents and businesses on what improvements can be made for people to use more active transportation modes instead of vehicles.
3. Enact a commercial motor vehicles six-foot law requiring commercial motor vehicles to allow a minimum of 6 feet from the rightmost point of their vehicle to the leftmost point of a person engaged in active transportation.
4. Establish and clearly communicate expectations of active transportation friendly behavior in the City of Appleton through:
  - a. Implementation of a diversion program for traffic violations that are common causes of crashes between people and vehicles.
  - b. Prominently share active transportation education and infrastructure enhancements on the City's webpage.

## RESIDENTIAL & BUSINESS INITIATIVES

**Recommendation 1:** Support the increased use of public transit, rideshare programs, and active transportation by City residents and employees of Appleton businesses.

### Actions:

1. Determine the baseline average use of public transit including time of day/evening for each transit route.
2. Survey residents and businesses to determine reasons that public transit, biking and walking for commuting and other transportation are not used more frequently.
3. Identify areas of opportunity from the survey (such as bus routes can double or triple a commute time) and work with Valley Transit on solutions.
4. Evaluate public transit routes & frequency of shared rides ensuring all neighborhoods have access to bus stops.
5. Create incentives for public transportation use such as offer free bus fare for students. (Current fare for seniors, disabled is half off; 18 and under is more than half off: regular fare is \$2.00, 18 and under it is \$.75.)
6. Partner with businesses to create Bike Hub buildings shared by area businesses that include secure indoor storage for bikes, showers, lockers and fix it stations.
7. Once improvements are made in public transit efficiencies, market the improvements to businesses and City residents to increase visibility of alternative transportation options.
8. Collaborate with Oshkosh, Fond du Lac, Green Bay and other municipalities to establish a regional intercity transit system.

### References:

1. [Wisconsin DOT Rideshare](#)
2. [Center for Climate and Energy Solutions Global Emissions Data](#)
3. [EPA Green Vehicle Guide](#)
4. [Public Transit Role in Responding to Climate Change](#)

### Resources

1. Dane County Office of Energy and Climate Change: [Green Infrastructure Report](#)
2. Appleton Comprehensive Plan: [Transportation](#)
3. Climate Smart Communities: [Climate Action Planning Guide](#)
4. [New Rochelle Sustainability Plan 2010-2030](#)
5. [Eau Claire Net Zero Energy Building Guide](#)
6. [Complete Streets](#)
7. [WI Clean Cities Coalition](#)

Consultants and Partners: WE Energies, Director of Community and Economic Development, Dane County, Focus on Energy, WI Clean Cities Coalition



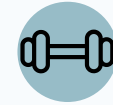
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# Resource Allocation Goals

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This section contains recommendations about two of the most important ways to reduce GHG emissions - energy and waste. Energy consumption is the largest source of GHG emissions, with about 25% of production coming from electricity production. We can reduce our emissions both by conserving energy and by moving more of our energy use to renewable sources. Similarly, we make recommendations that involve decreasing waste at the end of a product's lifecycle - by increasing recycling and composting - and by making purchasing decisions that emphasize sustainability by considering the entire life cycle of products, processes, and systems. This section also covers recommendations about water, from ensuring that we keep a dependable source of safe water for drinking, to managing wastewater in a sustainable manner and taking steps to mitigate flooding.

# Energy Consumption



Reducing our energy consumption is one of the first and most cost-effective ways to reduce GHG emissions. Along with energy and cost-savings, reducing electricity use can have unexpected benefits as well. For example, installing smart streetlights that dim when no activity is detected also reduces light pollution, which adversely affects wildlife and human health and blocks our view of the natural beauty and wonder of the night sky.

## CITY INITIATIVES

**Recommendation 1:** Reduce electricity used by streetlights, a substantial portion of municipal electricity use in Appleton.

**Actions:**

1. Install smart street lighting that dims when no vehicle or pedestrian activity is detected.
2. Install a pilot program such as Papilio, a wind-powered, motion-activated streetlight that also reduces light pollution, and consider widespread use of Papilio lights or similar lighting.

Consultants and Partners: WE Energies, Department of Public Works, Papilio

**Recommendation 2:** Reduce electricity use by installing motion, occupancy, and daylight sensors to turn indoor and outdoor lights off when an area is not in use.

**Actions:**

1. Install motion or other sensors in City buildings for indoor lights that don't already have them.
2. Evaluate existing exterior lights to determine if a light is needed in that location. If no exterior light is needed, remove it. If a light is needed only periodically, implement a policy that the light will be on only when needed. If a light is needed when there is activity in the area, install motion detectors to turn off the light when no activity is detected.

**Recommendation 3:** Convert all City indoor and outdoor lighting to LED.

**Actions:**

1. As light bulbs need to be replaced, install LED bulbs.

**Recommendation 4:** Reduce City electricity use by implementing a policy regarding heating and cooling that reduces the time when heating and cooling is used.

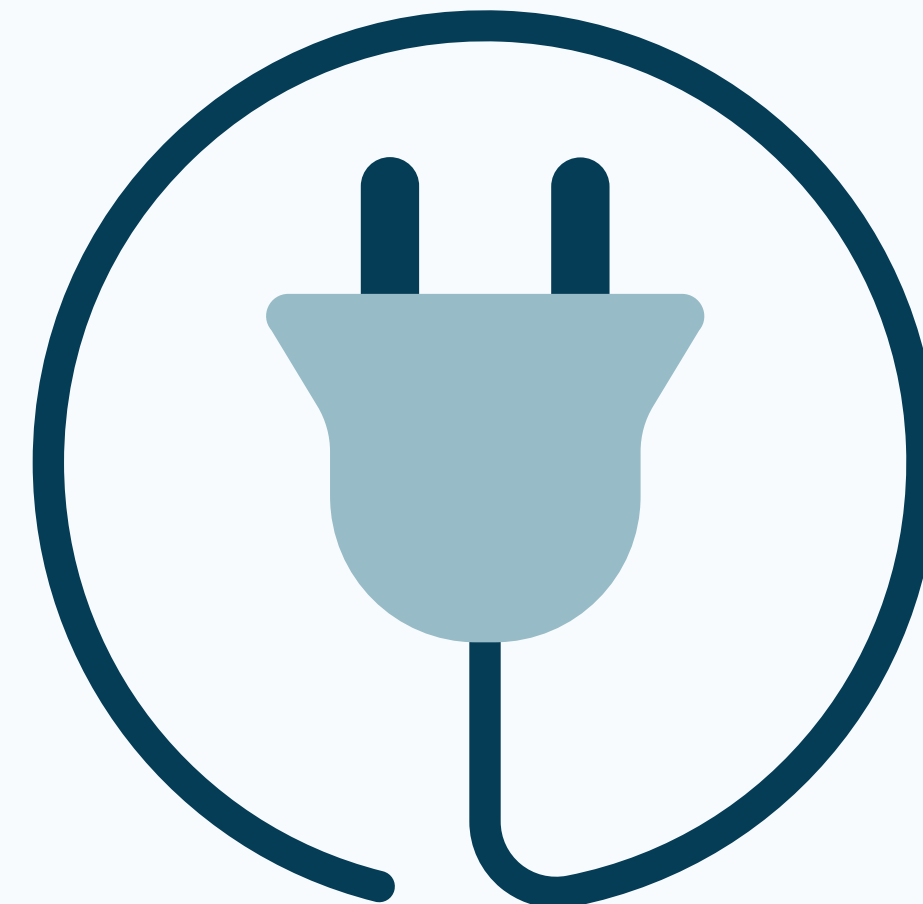
**Actions:**

1. Complete installation of digital smart thermostats in any municipal building that does not already have them.
2. Set temperature controls to cool the building only when the temperature exceeds 80 degrees Fahrenheit and to heat the building only when the temperature is below 65 degrees Fahrenheit.
3. Set smart thermostat to adjust temperature to be more efficient when an area is not occupied.

**Recommendation 5:** Adopt Energy Star certified appliances in City buildings.

**Actions:**

1. Create or update inventory of City appliances across all buildings, including whether they are Energy Star certified.
2. Implement City policy that all appliances purchased will be Energy Star certified.



## RESIDENTIAL AND BUSINESS INITIATIVES

**Recommendation 1:** Reduce exterior lighting and install motion sensors instead of lighting all night.

**Actions:**

1. The city should create education materials describing the benefits of reducing exterior light and using motion sensors where needed.
2. Identify community businesses and industries that use a lot of exterior light and directly engage them in discussion to reduce their exterior lighting.

**Recommendation 2:** Convert lighting to LED. As light bulbs need to be replaced, install LED bulbs, which use less electricity.

**Actions:**

1. Provide sample LED bulbs to get residents and businesses started with converting to LED.
2. Disseminate educational materials describing the cost and energy saving benefits of LED light bulbs.

**Recommendation 3:** Install Smart thermostats that correlate the indoor temperature to the outdoor temperature and based on occupancy. Implement the 60-80 rule for heating and cooling homes and businesses. Turn on the heat only when the temperature is below 60 degrees Fahrenheit and turn on the air conditioning only when the temperature exceeds 80 degrees Fahrenheit.

**Actions:**

1. Partner with Focus on Energy to educate businesses and residents about the cost and energy savings that smart thermostats can provide.
2. Disseminate small signs that businesses can install showing they are “Energy Smart” or a similar descriptor, so customers understand the reason for the temperature settings.

**Recommendation 4:** Adopt Energy Star certified appliances.

**Actions:**

1. Partner with Focus on Energy to educate businesses and residents about the cost and energy savings that Energy Star Certified appliances can provide.
2. Provide rebates or other financial incentives for businesses that install Energy Star appliances.

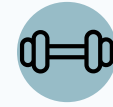
**References:**

Report from Intergovernmental Panel on Climate Change <https://www.ipcc.ch/>  
Project Drawdown <https://drawdown.org/>

Consultants: Focus on Energy



# Renewable Energy



This section includes recommendations focused on implementing renewable energy and reducing energy usage. Renewable energy is key to mitigating climate change by reducing GHG emissions and improving health through improved air and water quality. Energy harnessed from solar, wind and geothermal sources are examples of clean and renewable energy. Renewable energy is better for our economy and for the health of our community. A diverse array of renewable energy sources is the most resilient and is important for reducing the need for battery storage and resorting to non-renewable energy sources. Another renewable option is a microgrid - a small, local group of energy sources, generally including solar, wind, geothermal and sometimes other power sources, along with energy storage or backup generation and load management, which serves a neighborhood. The most nimble and resilient renewable energy system is a local microgrid which employs one or more renewable energy sources, along with energy storage systems.

The economic opportunities for Appleton and its residents from a renewable energy transition exceed economic opportunities from fossil fuels, which are not produced in this area. Renewable energy sources, such as solar and wind, are more cost-effective than fossil fuels. Importantly, eliminating fossil fuel use in Appleton will improve air and water quality leading to improved health. When renewable energy procurement on-site is not feasible, the City should seek off-site renewable energy. Sourcing off-site renewable energy contributes to the private sector transition to renewable energy and supports the local economy through local energy production, in contrast to importing fossil fuels, which are exclusively extracted out-of-state.

Other cities in the Midwest such as Monona, Wisconsin, Chicago, Illinois, Traverse City, Michigan, and St. Louis Park, Minnesota, have committed to achieve 100% renewable energy or a similar goal by 2040. A resolution with a commitment to achieving 100% renewable energy by 2040 gives direction to all city departments to contribute to this goal. Appleton has an opportunity to lead in Northeast Wisconsin on prioritizing climate change mitigation and sustainability and uphold our duty to the health of our citizens and our economy. Currently Appleton does not have a carbon neutral resolution.

## CITY INITIATIVES

**Recommendation 1:** Pass a resolution that defines timelines for reducing energy use and transitioning to 100% renewable energy sources by 2040, and which directs the city to adopt a Climate Action Plan that will outline the steps to achieving the commitment in the resolution.

**Action:**

1. Adopt a Resolution to Address Climate Change Through Transition to 100% Renewable Energy by 2040.

Consultants: City of Madison, Dane County, City of Eau Claire, City of La Crosse, City of Milwaukee, City of Monona, City of Middleton, Wisconsin League of Conservation Voters, RENEW Wisconsin

**Recommendation 2:** Implement a reinvestment fund that preserves at least half of the energy cost savings in a fund for future capital improvement costs related to energy use reduction or transition to renewable energy.

**Action:**

1. Review all proposed projects to establish estimates of savings that may be realized.
2. Select key projects that may need additional financial support to improve their estimated return on investment.
3. Contact other Wisconsin communities to obtain historical project information where Appleton may need additional supporting data.

Consultants and Partners: WE Energies, Director of Community and Economic Development, Dane County, Focus on Energy

**Recommendation 3:** Install solar arrays on all municipal buildings where feasible and maximize solar array size to produce as much electricity from solar power as possible.

**Actions:**

1. Evaluate each municipal building for the feasibility of solar power.
2. Appropriate funds for solar array installation on each appropriate building, beginning on those with the most solar power potential and with existing appropriate roof structure.

Consultants and Partners: Director of Parks, Recreation and Facilities Management, City of Madison, Dane County, Appleton Solar, LLC.

**Recommendation 4:** Install diverse renewable energy sources, such as micro-wind, geothermal and hydropower on all municipal buildings where possible and efficient.

**Actions:**

1. Evaluate each municipal building for the feasibility of micro-wind, geothermal power, hydropower, and other renewable energy sources.
2. Appropriate funds in the budget when it is determined that a municipal building is a candidate for the identified renewable energy solution.
3. Continue to monitor energy storage technology and feasibility, such as battery storage, and implement where efficient.

Consultants and Partners: Director of Community and Economic Development, Director of Public Works



**Recommendation 5:** Procure renewable energy from off-site sources where renewable energy cannot be produced by on-site sources such as solar arrays.

**Actions:**

1. Continue to evaluate power purchase agreements, such as the Dedicated Renewable Energy Resource (DRER) from WE Energies.
2. Negotiate with WE Energies to speed the utility's transition to renewable energy sources. Work in tandem with the City of Green Bay, as our cities obtain power from the same parent company, and the City of Green Bay has also made commitments to a renewable energy transition.
3. Procure renewable energy from community solar projects, where and when available.
4. Explore establishing joint solar garden projects with adjacent communities.
5. Purchase renewable energy credits.
6. Work with the utility to expand energy buy-back program for renewable energy produced by privately-owned property to encourage privately-owned small-scale renewable energy production systems.
7. Streamline permitting process for small-scale renewable energy production installations.
8. Provide property tax credits for property owners that install solar installations.

Consultants and Partners: Director of Parks, Recreation and Facilities Management, Director of Community and Economic Development, WE Energies, City of Green Bay, Arcadia, WIPPI, Cities of Menasha and Kaukauna, Bubolz Nature Preserve

## RESIDENTIAL & BUSINESS INITIATIVES

**Recommendation 1:** Install solar arrays, community solar projects, micro-wind, geothermal, and other small-scale renewable energy sources for private property in the city.

**Actions:**

The City should work with the utility to expand energy buy-back programs for renewable energy harnessed by privately-owned property to encourage privately-owned small-scale renewable energy production systems.  
Streamline permitting process for private solar installations, micro-wind installations and other small-scale renewable energy production.  
Provide property tax credits for property owners that install renewable energy production systems.

**Recommendation 2:** Install microgrids on private property in the City.

**Actions:**

1. The city should work with the utility to streamline permitting processes to allow residents to install microgrids in their neighborhoods.
2. Provide sample legal agreements for neighborhoods to adapt for their own microgrids.
3. Provide property tax credits for property owners that install cooperative microgrids.



# Waste



Waste management is a significant contributor to GHG emissions. Decomposition of waste in landfills releases methane and waste management is expensive. The City of Appleton spends almost \$1 million per year on tipping fees for landfilling solid waste, and the Outagamie County landfill is expected to reach capacity in 2022. Recycling can help reduce waste generation, and the city made significant efforts to increase recycling from 18.8% to 23.7% from 2013 to 2016. However, the vast majority of the waste generated in the city still goes to the landfill and the city discontinued the commercial recycling program in 2020 due to cost and lack of participation. A major component of landfilled waste is food waste which has a carbon footprint larger than that of the airline industry (“Food waste creates more greenhouse gases than airline industry,” Washington Post, Feb. 2021). Properly composted, that organic waste can be diverted from the landfill and used as a natural resource. Another major source of waste is plastic. Half of the 300 million tons produced every year is for single-use items. About 9% of plastic is recycled, and only 1% of the three trillion single-use plastic bags are recycled. Limiting single-use plastics is another strategy to reduce overall waste production, however preemptive bans have limited the City’s ability to address this issue.

Moving toward zero waste, a widely recognized strategy focused on preventing waste production, and by recycling and composting to reduce overall GHG emissions from the waste sector is the recommended path. The reduction of solid waste could significantly reduce tipping fees the City currently pays and would reduce transportation costs when the City starts using the new landfill in Brown County. Zero waste is an ambitious goal but several cities around the world have adopted zero waste plans, including the U.S. Conference of Mayors. All of the goals discussed in this section contribute to the overall goal of reducing the amount of waste going to the landfill or incineration by 60% by 2030, and 80% by 2040.

## References:

- <https://www.epa.gov/transforming-waste-tool/how-communities-have-defined-zero-waste>
- <https://www.washingtonpost.com/climate-solutions/2021/02/25/climate-curious-food-waste/>
- <https://www.colorado.edu/center/2020/12/10/waste-and-its-contribution-climate-change>
- <https://www.usmayors.org/the-conference/resolutions/?category=b83aReso050&meeting=83rd%20Annual%20Meeting>
- <https://www.epa.gov/transforming-waste-tool/how-communities-have-defined-zero-waste>

## CITY INITIATIVES

**Recommendation 1:** Determine baseline of reusable or recyclable material going to landfill and recycling facility.

### Actions:

1. Conduct a residential materials characterization study (also known as waste composition study) to determine the amount of recyclable or compostable materials are discarded into the trash or sorted incorrectly into recycling. Data is collected by taking samples of waste and sorting it into material types such as newspaper, aluminum cans, glass jars, plastic bottles and weighing each type. Pick up trash carts from a household in each pickup zone of the city and manually sort it into categories:
  - a. Recyclable – should have gone in the recycling bin
  - b. Compostable – organics that can be composted
  - c. Reusable – could be donated or reused for another purpose
  - d. Problem materials – cannot be recycled or reused
  - e. Recycle elsewhere – electronics, etc., that are not appropriate for trash disposal
2. Conduct a residential recycling analysis – sort the recycling carts to determine the percentage of material improperly placed in the recycling bins.
3. Conduct a commercial analysis – inspect a sample of commercial loads brought to the landfill for the same analysis as above.

Reference: City of Mountain View, CO <https://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=29515>

**Recommendation 2:** Create financial incentives for residents to send less trash to the landfill.

### Actions:

1. Consider increasing the weekly charge for the large trash bin after analysis of impacts to low-income residents. New residents will get the smaller bin unless they request the larger size. Charge a fee for the switch to a larger bin.
2. Give a credit in addition to the weekly charge difference for switching to the small bin. This should be justified by the decrease in tipping fee over time.



**Recommendation 3:** Seek repeal of preemptive ban WI AB 730 on local restrictions of single-use plastics.

**Actions:**

1. Educate citizens about the dangers of single use plastics
2. Hold listening sessions to find out the citizens' values and concerns around preemption of local control on environmental issues
3. Work to build a coalition of neighboring communities
4. Unite local activists and non-traditional allies, i.e. hunters and fishermen, to speak to the damage caused by plastics in waterways.
5. Hold an advisory referendum with the spring election of 2022 to evaluate the degree of support.

**Recommendation 4:** Review the city's current operations for opportunities for improvement to serve as an example for other businesses and organizations.

**Actions:**

1. Update Article V of Chapter 7 of the Municipal Code, the "Health in All Policies" ordinance, to include sustainability practices and consideration of products' disposal options at end-of-life.
2. Ensure that drinking fountains in public buildings and outdoor spaces are designed to facilitate filling water bottles. Set a target date for conversion of existing facilities.
3. Consider ordinances to reduce foodservice waste, including:
  - a. Fees for disposable cups (currently blocked by AB 730)
  - b. Utensils, straws, and napkins available only upon request or at self-service stations
  - c. Takeout food to be served only using conventionally compostable dishes and utensils
  - d. Dine-in food to be served only using reusable dishes and utensils
  - e. Require all fast-food operations to have trash and recycling cans indoors and at the exit of the drive-through lanes to avoid on-the-go disposal of fast-food packaging.
4. Support container deposit and extended producer responsibility laws at the state level by advocating with the state legislature and other municipalities.

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## BUSINESS AND RESIDENTIAL INITIATIVES

### **Recommendation 1:** Decrease food waste through composting.

Two different action plans are presented here – installing bins where residents would drop off their own food waste and a curbside pickup plan. The proposal is to implement the drop-off solution in the short term and implement the curbside plan in the future.

#### Actions:

1. Install city compost bins where garbage and recycling bins are in public areas, such as parks, trails, parking lots and city buildings.
  - a. Determine the number of new compost collection bins needed to match the number of garbage and recycling containers provided by the city.
  - b. Evaluate the need for additional transportation infrastructure and staff, or whether municipal personnel and vehicles that service the existing garbage and recycling containers can also service new compost containers.
  - c. Determine where compost collected will be deposited and managed to produce compost, such as the wastewater treatment plant, or a new compost site.
  - d. Create signage installed by garbage, recycling, and compost containers to educate the public regarding proper disposal of waste.
  - e. Purchase and install new compost containers alongside existing garbage and recycling containers.

Consultants: City of Denver, CO

2. Implement curb-side pick-up of compostable household waste.
  - a. Determine the number and type of cart or container needed for households and entities to collect compostable material and take curbside for pick up.
  - b. Determine the site for compostable materials to be taken to for processing and obtain appropriate permits from DNR for the compost site.
  - c. Determine customers or recipients of finished compost product and how the finished compost will be delivered or picked up by customer or recipient, including whether the customer or recipient will pay for finished compost.
  - d. Determine transportation needs to move compostable material from curbside to the compost production site.
  - e. Determine the appropriate cost to residents to participate in curbside pick-up of compostable material.
  - f. Implement a public education program to ensure citizens know how to properly use the curbside pickup program.
  - g. Purchase carts or containers and any additional vehicles needed to transport. Purchase or prepare a compost production site.

Consultants and partners: City of Iowa City, WI DNR (Dan Kroll), Rising Sand Organics (private enterprise from Custer, WI), Peterson Farm

**Recommendation 2:** Create a community tool shed that offers area residents free access to tools and programs to help people learn valuable skills.

#### Actions:

1. Explore possible partnerships, interest, costs, and spaces, to create a space for a centrally located tool shed.
2. Explore the option of “virtual” tool shed for neighbors to share tools with each other, similar to the popular “Buy Nothing” online group.

**Recommendation 3:** Develop public education programs to explain Zero Waste and teach correct recycling and composting.

#### Actions:

1. Create and send a flyer explaining Zero Waste to be sent out with water bills.
2. Publish an article in the Public Works Guide to explain the concept of Zero Waste.
3. Create a “Hold your Bin” campaign to encourage residents not to put out their trash carts when less than half full.

**Recommendation 4:** Reduce food waste from grocery stores and restaurants by 50% by 2026.

#### Actions:

1. Create tools for measuring the amount of current food waste so we can keep track of progress.
2. Gather information about where food is needed in the city and whether an organization is in place addressing the need, such as the St. Joseph Food Program.
3. Make connections between restaurants, grocery stores, food pantries and other outlets to ensure that food nearing expiration can be distributed to those in need rather than wasted.
4. Enact ordinance, resolution, or other method of providing incentives to restaurants and grocery stores to redistribute food that would otherwise be landfilled.

Consultants and partners: Stone Arch Brewpub, The Free Market, Festival Foods, Pillars, Salvation Army, FVTC, St. Joseph Food Program



**Recommendation 5:** Increase recycling by businesses, particularly small businesses.

Actions:

1. Develop a proposal for a recycling cooperative for businesses.
2. Develop recycling standards for construction and demolition that will become part of the building permit process.
3. Complete a study to determine if it is feasible to restart the commercial recycling program through cost savings or increased revenue by attracting more customers.
4. Create a public list of local Zero Waste companies to promote active participation in DNR recycling programs.

Consultants: Mountainview, CO; Racine, WI

**Recommendation 6:** Get schools to participate in a Zero Waste program.

Actions:

1. Provide assistance to the Appleton Area School District and private schools for developing recycling and food waste composting programs.
2. Partner with AASD and private schools to support recycling and compost education, including field trips to recycling facilities and landfill and caregiver and family education.

# Sustainable Procurement



Governments, even at the local level, have huge purchasing power. A paper from the Arizona State University Center for Organization Research and Design in 2017 noted that local governments purchase \$1.72 trillion of goods annually, which accounts for 25 to 40 % of every tax dollar spent, and between 15 to 30 % of country-level gross domestic product (GDP).

A sustainable procurement policy refers to the set of activities undertaken by an organization to implement purchasing that reduces negative effects on the environment. Governments that practice green purchasing can mitigate their climate impacts swiftly and significantly, while stimulating the increased production of green products and services. For instance, by purchasing green products, local governments can reduce energy-related carbon emissions, water, solid waste, and a host of other activities, while increasing internal efficiencies (e.g., reduced energy use) that lead to cost savings.

When local governments encourage their suppliers to provide greener products, research shows that 40 % of those companies will assess the environmental policies of the organizations that supply them. Sustainable purchasing policies have the potential to create spillover benefits that extend up the supply chain and across the globe, leading to significant environmental benefits.

## References:

[https://spa.asu.edu/sites/default/files/spri/spri-report-2017\\_-\\_final\\_1.pdf](https://spa.asu.edu/sites/default/files/spri/spri-report-2017_-_final_1.pdf)  
<https://www.oecd.org/gov/public-procurement/green/>

## CITY INITIATIVES

**Recommendation 1:** Review City purchasing policies to purchase only recyclable, compostable, or reusable plastics by 2030; reward reusable, less toxic and more recyclable options.

### Actions:

1. Choose Nos. 1, 2 and 5 plastics as safer and more recyclable, and phase out purchases of Nos. 3, 6 and 7 plastics whenever possible.
2. Award points for companies that deliver with reusable packaging such as pallets, ice packs and shipping crates.
3. Penalize companies that deliver products individually wrapped in plastic, such as clothing.
4. Require companies to take back their products at end of life (as many cities do with electronics).
5. Ask how much post-consumer recycled content is used in durable goods, choose the highest amount available and then ask companies to add more.
6. Avoid black plastics; they are problematic for recycling programs and often contain hazardous chemicals.
7. Give preference for durable and modular products such as carpet tiles.

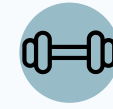
**Recommendation 2:** Prohibit city departments from purchasing plastic food ware, such as utensils, straws, and cups, and replacing them with reusable or conventionally compostable alternatives instead.

### Action:

1. Consider reusable or compostable replacements for each of the following items:
  - a. Utensils, straws, stirrers. Ensure that appropriate straws are available for those with disabilities who need straws.
  - b. Foodservice ware (cups, bowls, plates, etc.)
  - c. Clamshells and to-go containers
  - d. Bottled water (minimal & emergency use)
  - e. Polystyrene (styrofoam) containers
  - f. Condiment packets and individually wrapped items (K-cups, napkins, etc.)
  - g. Plastic bags
  - h. Black plastic food service ware (platters, etc.)



# Water



Water is a critical resource for society and ecosystems. We depend on a supply of clean drinking water for health, and we need water for agriculture, energy production, navigation, recreation, and manufacturing. All these uses put pressure on water resources - pressure that will only be increased by climate change.

Many areas of the United States, particularly in the West and Southwest, are facing water shortages already. Decreased rainfall and snowpack in the mountains, and earlier snowmelt mean that less water is available during the summer months when demand is highest. Lake Mead, the largest reservoir in the United States and part of a system that provides water to at least 40 million people in seven states and Mexico, dropped to its lowest level in 2020. Conversely, the increased precipitation and flooding events occurring in the Northeast and Midwest can cause problems for the water infrastructure, as sewer systems and water treatment plants are overwhelmed by the increased volumes of water. Heavy downpours can increase the amount of runoff into rivers and lakes, washing sediment, nutrients, pollutants, trash, animal waste, and other materials into water supplies, making them unusable, unsafe, or in need of water treatment. In addition, cities all over the country are faced with aging and unsafe plumbing infrastructure.

References: [https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-water-resources\\_.html](https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-water-resources_.html)  
<https://news.climate.columbia.edu/2019/09/23/climate-change-impacts-water/>  
<https://earthobservatory.nasa.gov/images/148758/lake-mead-drops-to-a-record-low>

## CITY INITIATIVES

**Recommendation 1:** The city will continue to modernize plumbing with continued testing and replacement of aging infrastructure.

Actions:

1. Develop and implement a water pipe replacement program throughout the city for aging plumbing infrastructure, with low-income areas having priority.
2. Investigate available federal funds for plumbing infrastructure upgrades.

**Recommendation 2:** The city will continue to modernize plumbing with low-flow and flush fixtures as well as improve and promote effective water conservation practices.

Actions:

1. When older city plumbing requires replacement, install low-flow fixtures.
2. Continue development of water main break detection systems.
3. As part of a sustainability awareness campaign, include options for residential water conservation, including fixture retrofits and shifting residential water discharge away from peak hours.
4. Grey water use will be studied and recommended where appropriate in city buildings and facilities as allowed by the Wisconsin Plumbing Code.

**Recommendation 3:** Create a flood resilience plan with a focus on urban and rural specific watershed action.

Actions:

1. Continue to develop and use a variety of stormwater control ponds and retention ponds throughout the city.
2. Educate residents in retention pond safety and understanding of their function.
3. Permeable pavement options will be studied and used where appropriate in city parking lots.
4. Rain gardens and biofilters will be studied and used where appropriate in city parkways and parking lots.
5. The city will continue to decrease use of fertilizers, pesticides, and herbicides to protect water sources and to decrease seasonal algal blooms.



## RESIDENTIAL & BUSINESS INITIATIVES

Wisconsin is expected to experience 145% increase in the severity of summer droughts by 2050. This projection necessitates implementation of water conservation strategies and storm water control mechanisms as appropriate.

**Recommendation 1:** Residences and businesses will be encouraged to monitor water usage and to actively decrease the amount of water utilized.

Actions:

1. Residences and businesses will be encouraged to use low flow fixtures and to fix water leaks.
2. The city will explore partnering with local providers to offer discounts on low flow fixtures.
3. Grey Water use will be studied and recommended where appropriate and as allowed by WI Plumbing code.

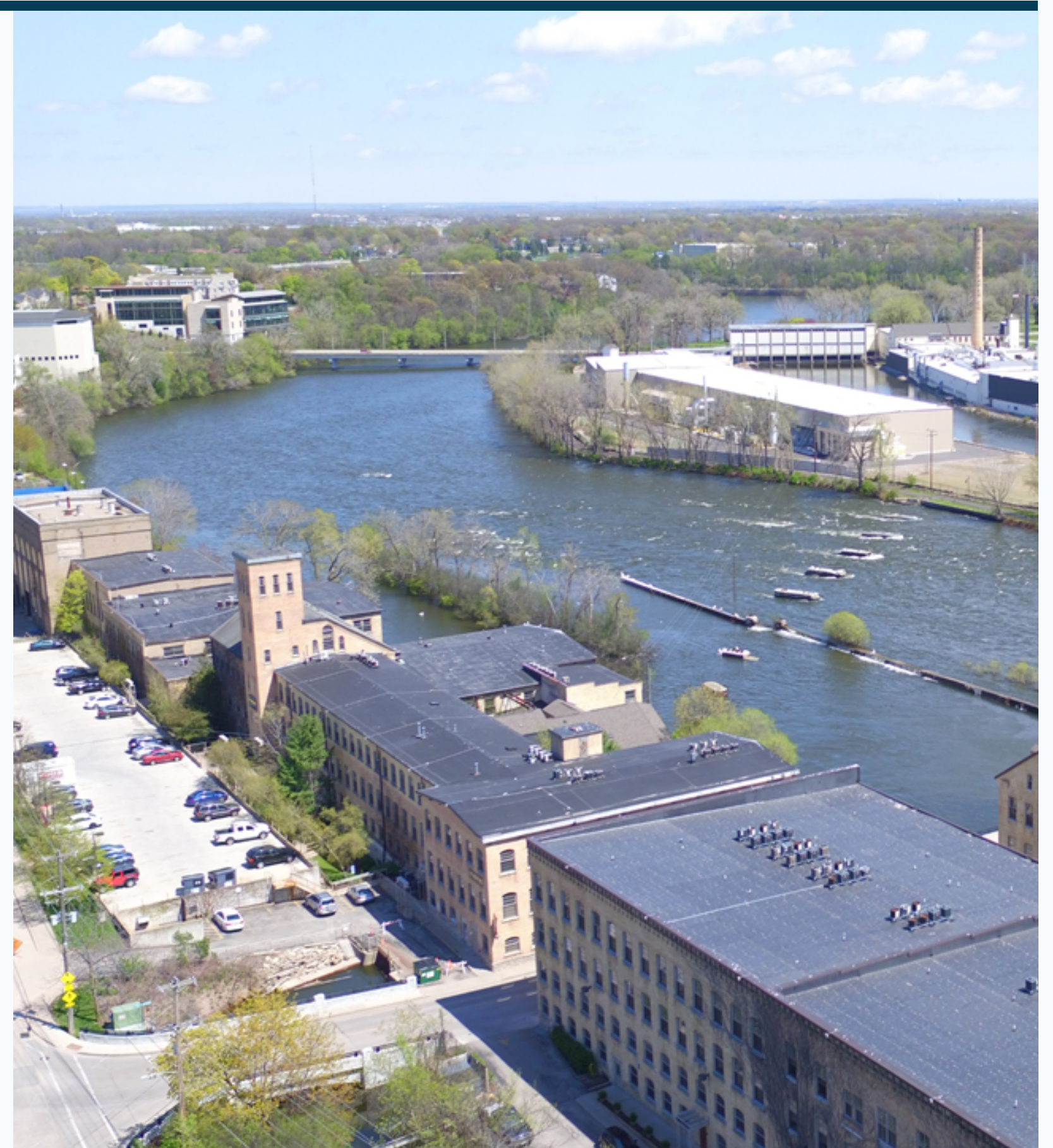
**Recommendation 2:** Residences and businesses will be encouraged to be aware of and to properly control runoff on and from their properties.

Actions:

1. Permeable pavement options will be studied and used where appropriate.
2. Rain gardens and biofilters will be studied and used where appropriate.
3. Use of rainwater collection tanks and passive water collection systems will be encouraged.
4. Investigate the use of federal funds for residential and business upgrades that provide stormwater control.

Consultants and Partners:

1. Outagamie County Master Gardener Association <http://www.ocmga.net/>
2. Wisconsin DNR i-Tree Landscape program <https://dnr.wisconsin.gov/topic/TreePlanting>
3. Green Tier Legacy Communities <https://www.1kfriends.org/what-we-do/green-tier-legacy-communities/>





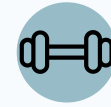
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# Natural World Goals

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This section contains recommendations about how we interact with the natural world – the ecosystem that is the interaction of biological organisms with the physical environment. Climate change threatens this ecosystem. To mitigate this threat, we propose changes to the way we use land in the city to protect wooded areas and to preserve and expand the urban forest. We also make recommendations that will increase the amount of prairie landscape on public and private property and to encourage urban gardens in our city. These recommendations will help remove carbon dioxide from the atmosphere and moderate temperatures to reduce the urban heat island effect.

# Ecosystem



Our ecosystem is the interaction of biological organisms with the physical environment. The protection and conservation of the ecosystem is critical in addressing climate change because forests and prairie landscapes absorb and store carbon, removing it from the atmosphere. This topic area also includes biodiversity and health and wellness.

Appleton has parks scattered throughout the city that offer many benefits, including wildlife habitat, and opportunities for recreation and relaxation. The city also was designated a Tree City for the 29th year in a row and manages thousands of trees. Trees and prairie plants act as a carbon sink by directly removing carbon dioxide from the atmosphere. As noted in the City's Sustainability Report, parks and natural areas mitigate climate change by moderating temperatures from the urban heat island effect. By reducing temperatures in the heat of summer and by improving air quality, trees also lower energy costs and improve quality of life. Beyond air quality and temperature moderation, trees and prairie plants improve human and animal health in myriad ways, including lowering blood pressure, boosting the immune system, reducing stress and improving mood. Forests, trees, and prairie plants make us healthier.

Climate change, on the other hand, threatens our ecosystem. Trees will become stressed due to increasing temperature and it is expected that Wisconsin will see an increase in heavy rain events leading to flooding. Maintaining and preserving these natural areas is important in mitigating further climate change by sequestering carbon, preventing erosion, and cooling the air.

Community and backyard gardens are also an important part of a community's green infrastructure to address climate change. Gardens can help sequester carbon and a recent movement calls for so-called Climate Victory Gardens. These gardens have the added benefit of providing access to fresh local foods, fostering connection to the land, making communities more resilient in the face of food shortages, and further reducing GHG emissions. One study stated, "Policies that address climate change should explicitly incorporate community gardens." The dissolution of the Community Garden Partnership by Goodwill has left a void of community gardens in the area. Therefore, we recommend developing new partnerships with organizations to support and expand gardens in the community.

## CITY INITIATIVES

**Recommendation 1:** Adopt land use development rules to preserve woodlots, including small undeveloped tracts on the riverfront and in ravines.

Actions:

1. Work with city officials, developers, and residents and identify wooded areas to conserve.
2. Develop a conservation plan and management strategies to ensure the quality of woodlots.
3. Implement woodlots ordinances and integrate conservation values in zoning codes and policies.
4. Determine whether the city will purchase identified lots or if an ordinance will be implemented for developers to conserve an identified wood lot.
5. Develop standards that at least 50% of wooded areas in residential zoning districts as natural woodland spaces.
6. Encourage species diversity in woodlots.
7. Enforce a construction danger zone of at least 30 feet between development and woodlots to prevent damage to established tree roots. If this cannot be achieved, utilize temporary crossing bridges to reduce soil compaction and injury to trees and their roots.

**Recommendation 2:** Expand acreage and improve the quality of urban forest and ensure tree equity throughout the city.

Actions:

1. Analyze data on average income, home values, and racial makeup in City of Appleton neighborhoods.
2. Update tree canopy GIS layer or create a new GIS layer that includes both tree cover and data showing average income, average home values and racial make-up of City of Appleton neighborhoods.
3. Use GIS map to identify blocks that have insufficient tree cover with a special focus on areas with tree inequity and plant trees in those areas.
4. Create a tracking system to understand which neighborhoods frequently request trees for their terrace, and which neighborhoods do not often request trees. Evaluate whether education is needed in those areas where residents do not contact the city to request trees when tree cover is low, or whether the city needs to proactively survey those areas and plant trees where they are missing.
5. Promote public awareness of the importance of tree planting in the terrace by the city.
6. Increase the urban forests within Appleton through preservation requirements, enhanced maintenance, and an expanded planting program.



**Recommendation 3:** Conserve and expand prairie landscapes on public and private land throughout the city.

Actions:

1. Increase public awareness of the city program that permits residents to plant prairie plants and tall grasses on the terrace.
2. Identify space for a new prairie walk with educational signage on City property.
3. Increase participation in No Mow May to at least 50% on City property.
4. Educate and facilitate sustainable lawn and garden care, including encouraging the establishment of native landscapes.
5. Increase the urban prairies within Appleton through preservation requirements, enhanced maintenance, and an expanded planting program.

**Recommendation 4:** Develop city ordinances and community partnerships that encourage more garden areas, including public, private and community gardens.

Actions:

1. Identify existing community gardens on a publicly available map.
2. Collaborate with city officials, non-profits, and interested residents to identify spaces and need for additional community gardens; in particular, identify areas of the city without access to fresh produce to prioritize as community garden sites.
3. Analyze opportunity to establish compost drop-off sites for nearby households at community gardens.
4. Form local partnerships and develop a plan for installation and maintenance of community gardens.
5. Provide gardening education to encourage homeowners to plant Climate Victory Gardens.

**Recommendation 5:** Increase natural landscapes and vegetation integration through green infrastructure education and incentives.

Actions:

1. Encourage residents and commercial entities to plant more trees.
2. Provide education and incentives for installation of green roofs, including built-in, modular, and biosolar, on residential and commercial buildings.
3. Provide education and incentives for installation of green walls, including green facades and living walls, on residential and commercial buildings.

References:

1. Climate Victory Gardens by Green America: <https://www.greenamerica.org/climate-victory-gardens>
2. American Forests, Inc. <https://www.americanforests.org/>

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# PRIORITIZATION AND PROCESS

A photograph of a park path with a bench and trees. The path is paved and curves to the right. A metal bench is on the right side of the path. The background is filled with lush green trees and bushes. The image has a light, semi-transparent overlay.

# Prioritization and Process Background

The Prioritization and Process section fulfills the important task of ranking the recommendations that are presented in this Climate Action report. To begin the process, the Taskforce established criteria that would be used to assess each recommendation. A maximum weight was determined for each criterion, which correlates to the criterion’s level of importance. The weights of all criteria equal 100 points, which is the maximum points that a recommendation can receive. The table to the right details the criteria and weights used in the prioritization process.

The next step in the process was to assess each recommendation against all criteria. To do so, a database was created that easily calculated the total points for each recommendation. Members of the Taskforce were able to choose one of three options during the assessment: yes, no, or maybe/in-between. A recommendation that was assigned “Yes” received the maximum points for that criterion; a “No” received zero points; and a “Maybe/In-between” received half of the points allotted for that criterion. Members of the Taskforce used the database to complete individual assessments and then the group compared rankings, discussed differences, and agreed on a final ranking that best represents the entire taskforce.

Lastly, an output table was created to show the final prioritization of the Taskforce recommendations. The Taskforce hopes that City staff will take the prioritization into consideration when determining which recommendations to move forward with in the future. Refer to the table in the following pages for the final prioritization of the taskforce recommendations.

Criteria	Description	Weight
<b>Environmental Performance</b>	Recommendation will measurably reduce negative environmental impacts or enhance environmental benefits	20
<b>Quality of Life Enhancement</b>	Recommendation will enhance quality of life factors, such as physical or mental health, recreation, education, ecosystem restoration, safety/security, and sense of belonging to community	15
<b>Equity Considerations</b>	Recommendation will have a positive impact on equity factors, including Black, Indigenous, People of Color, people living in poverty, and disabled people	15
<b>Sustainability Support</b>	Recommendation meets overall sustainability goals: energy use, materials, environmental footprint, etc.	10
<b>Cost of Implementation</b>	Recommendation meets overall sustainability goals: energy use, materials, environmental footprint, etc.	10
<b>Positive Economic Impact</b>	Recommendation will create positive economic impact, such as cost savings or job creation	5
<b>Resilience</b>	Recommendation will withstand extreme weather events or changes over the long term	5
<b>Operational Reliability and Dependability</b>	Recommendation will include technology or processes that are established, effective, and generally accepted	5
<b>Availability of Financial Assistance</b>	Grants, loans, or other programs will be available to cover some capital costs, land acquisition, etc.	5
<b>Availability of Partnerships</b>	Outside parties are willing to cost-share or otherwise help with construction, operation, maintenance, etc.	5
<b>Positive Visibility and Community Relations</b>	Recommendation will enhance the city’s image and relationships within the community	5

## REPORT RECOMMENDATIONS PRIORITIZATIONS TABLE KEY

- Leadership
- Wellbeing and Public Spaces
- Resource Allocation
- Natural World

Action	TOTAL SCORE (max 100)	Environmental Performance (max 20)	Quality of Life Enhancement (max 15)	Equity Considerations (max 15)	Sustainability Support (max 10)	Positive Economic Impact (max 5)	Cost of Implementation (max 10)	Resilience (max 5)	Operational Reliability / Dependability (max 5)	Availability of Financial Assistance (max 5)	Availability of Partnerships (max 5)	Positive Visibility and Community Relations (max 5)
Climate Change Commission	87	20	12	15	10	4	7	4.5	4.5	1	4	5
Expand and Improve Urban Forest	86.5	20	15	15	10	2	7	5	4	1.5	3	4
Land Development Policies to Preserve Woodlots	85.5	18	13.5	15	10	2.5	9	5	4	1.5	3	4
Conserve and Expand Prairie Landscape	85.5	20	15	15	9	2	7	4.5	4	2	3	4
Renewable Energy/ Renewable Energy for Private Property	85	20	15	10.5	10	4.5	4	5	4	3	4.5	4.5
Water/Modernize Plumbing Infrastructure	85	20	15	15	10	5	0	5	5	2.5	2.5	5
Green Buildings/Stormwater Management	84.5	20	13.5	13.5	10	4.5	5	5	4	2.5	3	3.5
Climate Resiliency Specialist	84	20	13.5	15	10	4	3	4	4.5	2	3.5	4.5
Renewable Energy/ Resolution Committing to Renewable Energy Goals	84	18	13.5	15	9	3.5	6	4.5	3.5	2	4	5
Green Buildings/Building Certifications - New Building Projects	83	20	15	10.5	10	4.5	3	5	4.5	3	3	4.5
Alternative Transportation/ Increase Use	83	20	15	13.5	9	2	7	4	4	1.5	2.5	4.5
Water/ City Flood Resilience Plan	83	18	13.5	13.5	10	5	4	5	4.5	2	2.5	5
Water/ Reduce Water Usage by Residents and Businesses	83	20	9	10.5	10	5	8	5	4.5	2.5	3.5	5
Energy Consumption/ Reduce Energy Use of Streetlights, City	82.5	20	7.5	7.5	10	5	10	5	5	5	2.5	5
Energy Consumption/ Install Motion and Daylight Sensors,	82.5	20	7.5	7.5	10	5	10	5	5	5	2.5	5

Action	TOTAL SCORE (max 100)	Environmental Performance (max 20)	Quality of Life Enhancement (max 15)	Equity Considerations (max 15)	Sustainability Support (max 10)	Positive Economic Impact (max 5)	Cost of Implementation (max 10)	Resilience (max 5)	Operational Reliability / Dependability (max 5)	Availability of Financial Assistance (max 5)	Availability of Partnerships (max 5)	Positive Visibility and Community Relations (max 5)
Energy Consumption/ Convert Indoor and Outdoor City Lighting to LED	82.5	20	7.5	7.5	10	5	10	5	5	5	2.5	5
Energy Consumption/ Reduce City Energy Use with HVAC policy	82.5	20	7.5	7.5	10	5	10	5	5	5	2.5	5
Energy Consumption/ Adopt Energy Star Certified Appliances, City	82.5	20	7.5	7.5	10	5	10	5	5	5	2.5	5
Renewable Energy/ Microgrids for Private Property	82.5	20	15	7.5	10	5	0	5	5	5	5	5
Waste/ Reduce Food Waste by Grocery and Restaurants	82.5	20	12	13.5	10	2.5	6	4	4	2	4	4.5
Alternative Transportation/ Hybrid & Electric Vehicles/Incentives	81.5	18	15	10.5	10	3	5	4	4.5	3	3.5	5
Renewable Energy/ Solar Arrays on City Buildings	81	20	12	9	10	4	5	5	4.5	3.5	3	5
Green Buildings/Building Certification - Existing Buildings	80.5	18	13.5	10.5	10	4.5	3	5	4.5	2.5	4	5
Green Buildings/City Sustainable Policy Implementation	80.5	20	10.5	13.5	10	3.5	6	5	4	1	2.5	4.5
Green Buildings/Commercial Green Building Certification Policy	80.5	20	13.5	9	10	4.5	5	4.5	4.5	1.5	3	5
Energy Consumption/ Reduce Residential & Business Exterior Lighting Install Motion Sensors	80	20	7.5	7.5	10	5	5	5	5	5	5	5
Energy Consumption/ Convert Residential & Business Lighting to LED	80	20	7.5	7.5	10	5	5	5	5	5	5	5

Action	TOTAL SCORE (max 100)	Environmental Performance (max 20)	Quality of Life Enhancement (max 15)	Equity Considerations (max 15)	Sustainability Support (max 10)	Positive Economic Impact (max 5)	Cost of Implementation (max 10)	Resilience (max 5)	Operational Reliability / Dependability (max 5)	Availability of Financial Assistance (max 5)	Availability of Partnerships (max 5)	Positive Visibility and Community Relations (max 5)
Energy Consumption/ Install Smart Thermostats, Business & Residential	80	20	7.5	7.5	10	5	5	5	5	5	5	5
Energy Consumption/ Adopt Energy Star Certified Appliances, Residential & Business	80	20	7.5	7.5	10	5	5	5	5	5	5	5
Policies to Increase Garden Areas	80	16	13.5	15	9	2	7	4	4	2	3	4.5
Alternative Transportation/ Hybrid & Electric Vehicles/City Fleet	79.5	20	12	10.5	10	3.5	4	4.5	4.5	2.5	3	5
Alternative Transportation/Alternative Transportation Infrastructure	79.5	18	13.5	13.5	10	1.5	3	4.5	4.5	3	3.5	4.5
Green Infrastructure Education and Incentives	79.5	16	13.5	15	9	3.5	5	4.5	4	2	2.5	4.5
Waste/ Composting	79	20	15	12	9	3	2	4	4.5	2	3.5	4
Waste/ Encourage Schools to Participate in Zero Waste Program	77.5	10	15	15	10	2.5	10	2.5	2.5	0	5	5
Alternative Transportation/ Create dedicated position	77.5	20	7.5	15	10	5	5	5	2.5	0	2.5	5
Green Buildings/Residential Green Building Certification Incentives	77	16	12	12	10	4.5	5	4.5	4	2.5	3	3.5
Education and Outreach/Develop an outreach plan to work with community partners	76.5	16	15	13.5	8	2.5	5	3.5	4	1.5	2.5	5
Waste/ Enact City Waste Reduction Policies	76	18	13.5	12	10	2.5	5	4	4	1.5	1.5	4
Education and Outreach/Develop education plan to engage the community	75	14	13.5	13.5	9	1.5	6	4	3.5	2	3	5



Action	TOTAL SCORE (max 100)	Environmental Performance (max 20)	Quality of Life Enhancement (max 15)	Equity Considerations (max 15)	Sustainability Support (max 10)	Positive Economic Impact (max 5)	Cost of Implementation (max 10)	Resilience (max 5)	Operational Reliability / Dependability (max 5)	Availability of Financial Assistance (max 5)	Availability of Partnerships (max 5)	Positive Visibility and Community Relations (max 5)
Renewable Energy/ Reinvestment Fund from Energy Savings for Capital Improvements to Promote Energy Conservation or Renewable Energy	75	16	9	13.5	9	4.5	6	5	3	2.5	2	4.5
Waste/ Public Education Program on Zero Waste	75	16	12	13.5	9	2	6	3.5	3.5	1	4	4.5
Greenhouse Gas Inventory - Community	73	18	12	9	10	3	5	3	4	2	2	5
Water/ Low Flow Fixtures in City Facilities	73	18	9	9	10	3.5	6	4.5	4.5	2.5	2.5	3.5
Waste/ Increase Commercial Recycling	72.5	18	10.5	9	10	3	5	4.5	4.5	1.5	2.5	4
Renewable Energy/ Install other Renewable Energy Sources	72	18	10.5	9	9	3	3	4.5	4	3	3	5
Water/ Control Runoff, Residential & Business	71.5	18	12	12	9	2.5	4	3.5	4	1	2	3.5
Waste/ Seek Repeal of "Ban on Bans"	71	18	12	10.5	10	2	6	3.5	2.5	0.5	2.5	3.5
Waste/ Financial Incentives to Send Less to Landfill	70	16	10.5	12	9	3	3	4	4	2	2	4.5
Renewable Energy/ Renewable Energy Procurement	69	18	9	9	9	3.5	4	4.5	4.5	2	3	2.5
Waste/ Community Tool Shed	69	14	10.5	13.5	8	2.5	7	3.5	3	0	3	4
Sustainable Procurement/ City Purchasing Policy	67.5	16	7.5	12	9	2.5	6	4.5	3.5	2	1.5	3
Sustainable Procurement/ Ban Purchase of Plasticware	67.5	20	7.5	7.5	10	2.5	10	2.5	2.5	0	0	5
Education and Outreach/Conduct research to determine successful approaches	66	16	9	9	10	1.5	6	3.5	4	1	2	4

Action	TOTAL SCORE (max 100)	Environmental Performance (max 20)	Quality of Life Enhancement (max 15)	Equity Considerations (max 15)	Sustainability Support (max 10)	Positive Economic Impact (max 5)	Cost of Implementation (max 10)	Resilience (max 5)	Operational Reliability / Dependability (max 5)	Availability of Financial Assistance (max 5)	Availability of Partnerships (max 5)	Positive Visibility and Community Relations (max 5)
DEI Language/City Guidelines	60.5	4	10.5	15	6	1	7	2.5	3.5	2	4.5	4.5
DEI Language/ Land Acknowledgement	59	4	10.5	15	5	1	7	2.5	3.5	2	4	4.5
Waste/ Analysis to Determine How Much Reusable or Recyclable Material Goes to Landfill	57.5	14	6	9	8	2.5	6	3	3	1	2	3

*Respectfully submitted,*

*Appleton Taskforce on Resiliency, Climate Mititgation and Adaptation*



