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**NOTICE OF MEETING  
of the  
ENVIRONMENTAL AND ENERGY COMMISSION  
Thursday, February 6<sup>th</sup>, 2020 at 7:00 P.M.  
Village Hall Training Room – Second Floor of Wilmette Village Hall**

1200 Wilmette Avenue, Wilmette, Illinois

***AGENDA***

**I. Call to Order**

**II. Approval of Minutes**

Minutes of the Environmental and Energy Commission meeting of November 21<sup>st</sup> 2019

**III. Chair's Report**

**IV. Staff Report**

**V. Sustainability Plan Discussion**

Sections to be reviewed: Waste & Recycling, Water, Municipal Operations, and Leadership

**VI. Public Comment**

**VII. Adjournment**

**Julie Wolf, Chair**

IF YOU ARE A PERSON WITH A DISABILITY AND NEED SPECIAL ACCOMMODATIONS TO PARTICIPATE IN AND/OR ATTEND A VILLAGE OF WILMETTE PUBLIC MEETING, PLEASE NOTIFY THE VILLAGE MANAGER'S OFFICE AT (847) 853-7509 OR TDD (847) 853-7634 AS SOON AS POSSIBLE.

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1200 Wilmette Avenue  
WILMETTE, ILLINOIS 60091-0040

**MEETING MINUTES  
ENVIRONMENTAL AND ENERGY COMMISSION**

**THURSDAY, November 21, 2019  
6:15 P.M.**

**VILLAGE HALL TRAINING ROOM – 2<sup>ND</sup> FLOOR OF WILMETTE VILLAGE HALL**

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**Members Present:** Julie Wolf, Chair  
Rebecca Boyd  
Arthur Haut  
Michael Kim  
William Muno  
Kenneth Parkhill  
Joel Feinstein

**Members Absent:** Amanda Ault  
April Cesaretti

**Staff Present:** John Adler, Director of Community Development  
Kate Amoruso, Assistant to the Director of Engineering & Public Works  
Kate McManus, Planner II

**Guests:** Diana Hackbarth  
Linda Kurtz of Go Green Wilmette  
Saima Abbassi  
David Price

**I. CALL TO ORDER**

Chair Wolf called the meeting to order at 6:16 P.M.

**II. APPROVAL OF MINUTES**

Chair Wolf directed the Commission's attention to the draft minutes of the Environmental and Energy Commission meeting of October 10, 2019

Commissioner Kim Noted that the minutes misidentified the Chair of the Committee, and Commissioner Parkhill noted that Linda Kurtz's contributions to the sustainability plan needed to be properly stated. Following these two revisions, the Commission moved to approve the Minutes from October 10, 2019.

### **III. CHAIR'S REPORT**

Chair Wolf informed Commissioners that they should be using footnotes in their respective sections of the draft sustainability plan for reference purposes, and updated the Commission on the timeline and revision procedures for the draft plan.

At the Chair's request, Commissioner Parkhill discussed the GHG Protocol and recommended its usage when creating the Wilmette Green House Gas Inventory.

### **IV. STAFF REPORT**

Kate McManus updated the Commission on the Village's SolSmart designation, noting that Wilmette is now recognized as a Silver member, and the goal continues to be achieving a "Gold" designation.

Ms. McManus also noted that the Village was working on enrolling several municipal electric accounts into a Community Solar program.

John Adler explained that the Community Solar program has two different programs, and explained the differences between both programs, noting that the main difference is lengths of contracts, and possible saving percentages. Mr. Adler explained that the Village will have to decide which program they would like to enroll in, Ms. McManus mentioned this decision would likely be made in February.

Kate Amoruso informed the Commission that the Village signed on to the Mayors Monarch Pledge, and provided an update on the Greenhouse Gas Emissions Inventory for draft plans. Additionally, Ms. Amoruso updated the Commission about the status of the Rain Ready program, which will be replaced with an in-house credit and incentive program.

Last, Ms. Amoruso spoke about the Metropolitan Water Reclamation District (MWRD) grant that the Village received to help cover costs for a permeable parking lot renovation at the Village Hall, which will be further explored during the 2021 budget formulation.

### **V. SUSTAINABILITY PLAN DISCUSSION: CLIMATE and ENERGY chapters**

Commissioner Boyd presented a PowerPoint covering the upcoming 2020 United Nations Climate Conference, goals of the Paris Climate Agreement, global temperature increases rates, and strategies to reduce emissions such as mitigation and resilience. Commissioner Boyd then discussed Illinois' goals and recent policy adoptions to combat climate change, and Wilmette's membership in a number of climate and sustainability groups and initiatives.

Commissioner Haut suggested trying to reference more climate professionals on draft sustainability plans, commenting that the Commission could only benefit from more professional resources.

Chair Wolf directed the Commission to discuss the Climate section of the draft sustainability plan. Commissioner Muno discussed Wilmette's Stormwater Management plan and how this project was built into topics like green infrastructure.

Commissioner Boyd then discussed carbon sequestration and how it could be built into the draft sustainability plan, and suggested that climate should be addressed in every chapter of the draft plan.

Commissioner Feinstein asked for clarification regarding which electric accounts would be covered by the Community Solar program, and Chair Wolf responded that as of now, only street light accounts have been submitted for enrollment into the program.

Commissioner Muno mentioned that he has received notices from a private company to enroll into a solar/green energy program, so he assumes residential green energy programs are an option to Illinois residents.

The Commission then discussed natural gas and how it has become a preferred energy source in the US, and the effects it has had on greenhouse gas emissions.

Commissioner Boyd asked the Commissioners if they wanted to include a commitment to the Paris Climate Agreement goals in the draft sustainability plan, and the Commissioners agreed to explore specific action steps and objectives that could be built into the draft plan to address the Paris Climate Agreement goals.

Mr. Adler informed the Commission that Illinois has certain electric and natural gas regulations that new construction needs to abide by, so mentioning this in the draft plan could be worthwhile.

Chair Wolf and Mr. Adler discussed how interim goals and recommendations would be the first priority once the final draft plan was completed.

Commissioner Boyd mentioned that Evanston refers to their plan as a Climate Action Resiliency Plan, and how climate is an over-arching theme, so she suggested Wilmette's plan follow a similar format.

Commissioner Feinstein suggested adding a glossary to the plan to make it more easily understandable and digestible to the public, and Chair Wolf agreed with this suggestion. Chair Wolf then suggested the Energy chapter address specific reduction goals, whereas Climate could remain more broad and contain more over-arching, long-term goals.

Chair Wolf suggested the Commission put together resources and materials for the upcoming Going Green Matters event in March 2020. Commissioner Muno mentioned having a table dedicated to the progress the Commission has made on the draft sustainability plan.

Chair Wolf then directed the Commissioners attention to the Energy chapter, and mentioned the idea of creating a “green” team, made up of different stakeholders to examine current Village and local practices which could be charged with determining how different improvements can be made.

Commissioner Haut discussed various types of power sources available to residents, and suggested the Village explore ways to recommend residents enroll in renewable energy source programs. Chair Wolf then spoke about several programs different neighboring municipalities have enrolled in.

The Commissioners then discussed electric vehicles and the active biking/transportation plan in Wilmette. The Commissioners and present staff members discussed electric vehicle charging stations and the possibility of seeing more of them around Wilmette in the near future.

Commissioner Parkhill discussed including a social carbon cost in the Energy or Climate chapters of the draft sustainability plan. Commissioner Boyd asked if the Commission envisioned this as a Village tax that would be levied, or just something for residents to consider.

The Commission finished with discussing greenhouse gas emissions and their connection to typical residential and commercial use, and discussed revising draft plan language from energy use to energy generation.

## **VI. PUBLIC COMMENT**

Diana Hackbarth asked for clarification on whether or not outdoor air quality would be addressed in the draft plan, and the Commissioners responded that it would be.

Linda Kurtz of Go Green Wilmette thanked the Commission for mentioning the Going Green Matters event in March 2020, and urged the Commission to put together a display for the event.

Saima Abbassi pondered if the Village was aware of who would be considered the largest polluters in the Village, and shared her concerns with gas powered leaf blowers and lawn mowers.

David Price asked for an update on whether or not the Wilmette Park District was exploring installing solar panels, and also informed the Commission that Nicor and ComEd conduct free energy audits for property owners in and around Wilmette.

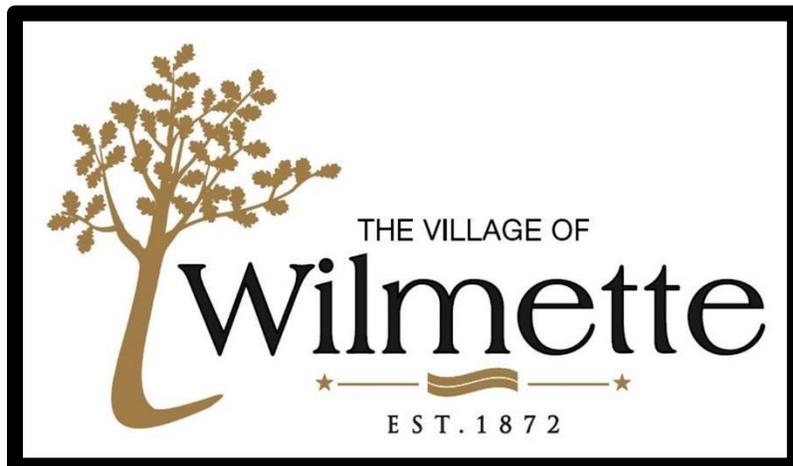
## **VII. ADJOURNMENT**

Chair Wolf called for a motion to adjourn the meeting. Commissioner Parkhill moved to adjourn the meeting and Commissioner Boyd seconded the motion. The meeting was adjourned at 8:10 P.M.

Respectfully Submitted,  
Alex Arteaga  
Management Analyst, Village Manager's Office

DRAFT

**VILLAGE OF WILMETTE**  
**SUSTAINABLE COMMUNITIES STRATEGIC PLAN**  
**2019**



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## **EXECUTIVE SUMMARY**

On August 28, 2018, the Wilmette Village Board endorsed the Greenest Region Compact (GRC) to address environmental sustainability issues of global importance at the local level. The GRC encourages each of its members to develop a Sustainable Communities Strategic Plan. This Plan has been developed by the Wilmette Environmental and Energy Commission to address the specific environmental issues identified in the GRC. Each of the ten chapters in this Plan identify environmental issues unique to the Village of Wilmette along with a corresponding set of recommendations to address these issues moving forward with the goal of reducing the environmental footprint for the Village of Wilmette, thus making the Village a better place to live and work.

## INTRODUCTION

### **The Village of Wilmette**

The Village of Wilmette is located on the western shore of Lake Michigan and is a near northern suburb of Chicago about 14 miles north of Chicago's downtown district. It was officially incorporated on September 19, 1872, as the Village of Wilmette. The postwar need for housing led to a housing boom in the 1950s that transformed the area west of Ridge Road from farmland to residential subdivisions. As a direct result of this housing boom, Wilmette's population grew from 18,162 in 1950 to 28,268 in 1960. Based on the 2010 census the population was 27,087. In 2007, Wilmette was ranked as the seventh best place to raise children in the U.S., according to *Business Week*. In 2015, Wilmette was ranked the best place to live in the State of Illinois based on a variety of factors including its low unemployment rate, median income, low housing vacancy rate, high education expenditures per student, low crime, and short commute times. Wilmette is home to 2 of Illinois' 17 elementary schools to be awarded the 2017 National Blue Ribbon award. Students in Wilmette attend New Trier High School. In 2016, *Newsweek* magazine ranked New Trier as the top open enrollment high school in Illinois and the 17th best high school in the country. There are two private high schools located in Wilmette. The Wilmette Park District owns and operates a public 18-hole golf course in West Wilmette. There is a large park along the Lake Michigan shore with several neighborhood parks, a recreation center, outdoor pool, and an indoor ice rink.

### **The Greenest Region Compact**

The Metropolitan Mayors Caucus created the Greenest Region Compact (GRC) to address environmental sustainability issues of global importance at the local level. The Greenest Region Compact, an update to the original pledge and sometimes referred to as the Greenest Region Compact 2, is built on important environmental initiatives already underway in communities in partnership with many non-profit, state, regional and national organizations. The Greenest Region Compact synthesizes sustainability goals already adopted by leading communities in the region; and these consensus goals align with common regional, state, national and global objectives. The Greenest Region Compact offers a companion Framework, in the form of a spreadsheet, to guide communities of all sizes and strengths to assess their current efforts, develop a sustainability plan suited to local priorities, and offer resources to help them succeed. The consensus goals of the Greenest Region Compact will guide coordinated efforts toward enhanced quality of life for residents, protection and stewardship of the environment, and sustainable economic vitality. On August 28, 2018, the Wilmette Village Board endorsed the GRC and tasked the Environmental and Energy Commission (EEC) to make recommendations to the Board on how best to implement the GRC. This Plan contains the EEC's recommendations to the Board. The 10 chapters in the Plan follow the framework given in the GRC: Climate, Economic Development, Energy, Land, Leadership, Mobility, Municipal Operations, Sustainable Communities, Waste & Recycling, and Water.

## CHAPTER 1 - CLIMATE & AIR QUALITY

### 1.1 Introduction

Climate change threat. Earth is at approximately 1°C temperature increase from 1901, the warmest in modern civilization, and warming will reach 1.5°C between 2030-2050 under all best case scenarios, according to a 2018 UN climate scientific report. United States scientists state that “human activities, especially emissions of greenhouse gases, are the dominant cause” of record-breaking, climate-related weather extremes in recent years, and extreme weather events will become more frequent and intense.

Catastrophic consequences. Scientists warn that catastrophic climate change will occur if the global warming exceeds 1.5°C. To stay under 1.5°C warming, Greenhouse Gas (“GHG”) emissions must be reduced 45% from 2010 levels by 2030, and reach net zero by 2050. With current Paris commitments, earth will reach 3 °C global warming by 2100.

Commitment to climate change mitigation and resilience. Wilmette joined Climate Mayors in February 2019 “to further achieve the goals put forth by the Climate Mayors,” which is “a bipartisan, peer-to-peer network of mayors of cities located throughout the United States that work together to demonstrate leadership on climate change.”

Ambition. The window for moderate climate action has closed. We can expeditiously approach climate change with multi-pronged efforts to build climate resilience and mitigation including conserving energy; promoting renewable resources; utilizing carbon sequestration; controlling water and waste; and improving education and awareness.

Local action. Global sustainability requires action at local, state, regional, national, and global levels. The Paris Agreement set a framework, but local action is essential. Cities control up to 70% of energy emissions, are ground zero for climate hazards and thus are essential in global efforts to mitigate and improve resilient to climate change.

Collaboration. Climate change actions are most effectively achieved when stakeholders work together, including Wilmette residents and businesses, public interest groups, school districts 37 and 39, elected and appointed officials, and municipalities.

Science. Climate goals and policies must be informed by the best available climate science including the 2018 United Nations *Global Warming of 1.5 °C* report, and the United States Global Change Research Program *Fourth National Climate Assessment Volume 1* and *Volume II* published in 2017 and 2018.

Economy. Supporting a stable and sustainable economy necessitates good stewardship of the environment. Absent unprecedented mitigation and resilience

efforts, climate change will increase losses in infrastructure and property, and slow economic growth.

Ecosystems. A 2019 United Nations report states, “Biodiversity and nature’s contributions to people are our common heritage and humanity’s most important life-supporting ‘safety net’. But our safety net is stretched almost to breaking point,”

Resilience. Taking measures so our community can prepare for and become resilient to current and anticipated climate changes is a critical part of climate efforts.

Morality and equity. Preserving the safety, health and wellbeing of future generations necessitates expedited and ambitious action to for all people.

Setting and achieving ambitious climate goals therefore is necessary for a thriving, safe, economically viable, beautiful and healthy community.

## **1.2 Existing conditions**

Illinois has increased in temperature by 1°C, and will reach 1.5°C. Wilmette does not track GHGs to determine our emissions, directly relate climate conditions to our climate-related actions, or focus on resilience to address climate change that will occur. Existing climate-related conditions in Wilmette are further detailed in the rest of this Plan.

Communities are experiencing climate change impacts, and further changes in average climate conditions will “damage infrastructure, ecosystems, and social systems that provide essential benefits to communities. Future climate change is expected to further disrupt many areas of life, exacerbating existing challenges to prosperity posed by aging and deteriorating infrastructure, stressed ecosystems, and economic inequality.”

## **1.3 Goals**

**1.3.1** The ultimate goal is to reduce Wilmette’s emissions the equivalent of at least 45% from 2010 levels by 2030, and to reach net zero GHG emissions by 2050.

Wilmette Greenhouse Gas Emissions Targets	
Year	Metric
2030	45% Greenhouse gas emissions reductions from 2010 levels
2050	Carbon neutral

- 1.3.2 Develop a GHG Emissions Inventory (“Inventory”) to benchmark, monitor and report ongoing climate data for GHG emissions, water, carbon sequestration and waste.
- 1.3.3 Establish measurable interim and long-term GHG emissions reduction targets.
- 1.3.4 Develop policies and laws to reduce Wilmette’s contribution to climate change.
- 1.3.5 Assess and improve climate resilience throughout the Village.
- 1.3.6 Protect and inform the public about indoor and outdoor air quality.
- 1.3.7 Develop climate change outreach and education to improve public awareness.

**1.4 Recommendations**

**Climate change mitigation: municipal operations and public property**

- 1.4.1 For every policy and action in this Plan, work with all governmental entities in Wilmette including the municipality, school districts 37 and 39, park district and library; businesses; residents; the region and nearby communities; and federal and state entities. Consider needs of more vulnerable populations in all policies and actions.
- 1.4.2 Develop a coordinated panel of Wilmette ordinances and policy changes in alignment with achieving the climate targets in this Plan.
- 1.4.3 Complete benchmarking and a Greenhouse Gas Inventory (“Inventory”) in 2019 using the Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories (“GPC”). Greenhouse gases are the primary cause of climate change. Benchmarking, and continuously updating data will provide an accurate, comparable and rigorous protocol. The Inventory will assess the GHG that can be attributed to Wilmette, as well as to categories of emissions within the Village to help prioritize decision-making.
  - a. Determine methods to capture GHG emissions data from distinct sources. Look to GPC, Climate Mayors and other municipalities for best practices.

- b. Obtain and analyze data for the municipality, public property, other branches of government and the school districts within Wilmette, as well as for private property (residential, commercial and business).
- c. Measure and monitor GHG emissions and carbon sequestration categories including transportation, energy use, water use and water runoff, waste, and native plants. Include electricity, natural gas and gasoline.

**1.4.4** Continue to evaluate and update the Inventory annually, and determine whether to adjust categories and policies to achieve the Plan's goals.

**1.4.5** Identify the Village's primary areas of GHG emissions, to develop and prioritize short- and long-term strategies with clear interim deliverables. Measures include:

- a. Look to international, federal, state, regional and local plans to assist in planning and evaluating climate strategies including the US EPA's Local Government Climate and Energy Strategy Series.
- b. Develop a net zero GHG emissions policy for new municipal buildings by 2019, and require that new municipal buildings after 2020 be LEED platinum certified.
- c. Host /serve as an anchor subscriber to a shared solar project, and allow residents and businesses to subscribe to the project by 2020.
- d. Install 100% LED lighting on Village and public properties by 2020.
- e. Complete a feasibility study in 2020 to determine the best opportunities for renewable energy installations on municipal properties.
- f. Install water-efficient fixtures on all municipal facilities.
- g. Develop a zero emissions municipal vehicle purchasing strategy.
- h. Install electric vehicle charging stations and offer subsidies for electric vehicles. Use Climate Mayors Electric Vehicle Purchasing Collaborative.
- i. Subscribe to opt-out community choice aggregation for all Wilmette ratepayers.
- j. Consider developing an electric utility with other municipalities.

**1.4.6** Immediately save energy, water and money by implementing low- or no-cost emissions and water reduction measures concurrent with developing the Inventory. Install LED bulbs, other energy efficiency measures, and water-reducing fixtures.

**1.4.7** Set municipal operations and public property short- and long-term targets by category to attain 45% emissions reductions by 2030 and net zero by 2050. In assessing GHG emissions, include municipal operations and public property; transportation; land use and vegetation; water use and water runoff; and waste.

**1.4.8** Set municipal waste goals. Municipal waste actions to achieve targets include:

- a. Require that capital projects divert construction and demolition debris from landfills and use xx% of reclaimed material into reusable projects and products.
- b. Ensure that recycling receptacles are located at all Village properties including parking garages, parks and the community center.
- c. Ensure compost collection service at public spaces and Village facilities.
- d. Work with landfills to ensure they are managed to minimize air emissions and leakage into water and soil.

- e. Complete annual studies for landfill waste, compost and recycling.

- 1.4.9** Set municipal land and carbon sequestration goals. Native plants and native habitat absorb and sequester carbon; improve public health, air quality and water quality; reduce water entering sewers; and restore native ecosystems. Actions include:
- a. Increase green infrastructure to naturally filter and contain water runoff.
  - b. Maintain Wilmette's Tree City USA. Replace trees on public land and distribute throughout the Village, and plant (#) additional native trees annually.
  - c. Manage the health of trees and native plants, placing in optimal growing sites throughout the Village to maximize carbon capture and improve native habitats.
  - d. Restore xx% net acreage by 2025 and xx% net acreage by 2050 of public, Village and parkway lands to native habitat. Emphasize restoring native habitat for wildlife, and ensuring habitat distribution throughout Wilmette.
  - e. Reduce urban heat islands. Asphalt and concrete absorb rather than reflect the sun's heat, causing surface and overall ambient temperatures to rise.
- 1.4.10** Set municipal water goals and determine actions to achieve goals including:
- a. Study the development of a municipal water utility to regulate inflow and outflow of water in the Village, and use water proceeds toward climate change efforts.
  - b. Utilize permeable pavement on all new Village sidewalks, alleys and streets.
  - c. Install low-flow filters on all village properties.
  - d. Ensure that drinking fountains inside and outside municipal buildings and public properties are functioning with healthy water, and with water bottle accessibility.
  - e. Integrate water resource management and landscape planning, including practices to reduce soil erosion, sedimentation and pollution runoff.
- 1.4.11** Task a Village employee and the Environmental and Energy Commission ("EEC") to develop and implement the Plan; continue to coordinate climate efforts; and review and assess new laws, policies and regulations, technologies, funding opportunities, best practices, and climate-related science.
- 1.4.12** Continuously coordinate and build on initiatives and best practices among branches of government with dedicated monthly meetings. Districts 37 and 39, the park and library boards, and other governmental organizations have initiatives and plans underway that already are addressing the environment and climate.
- 1.4.13** Set a policy as a matter of good governance to consider and report climate impact in every governmental decision. From expenditures to regulations, all decisions in the government can impact climate change.
- 1.4.14** Report and publicize climate actions and Inventory data. Submit data to databases such as carbonn® Climate Registry, C40 and Climate Mayors. With an Inventory and benchmarking data, Wilmette can track progress and monitor compliance with its external commitments including GRC2 and Climate Mayors.

**1.4.15** Demonstrate climate leadership by joining other climate agreements such as the Global Covenant of Mayors for Climate and Energy (GCoM), Ready for 100, the Paris Climate Agreement #WeAreStillIn, and the Chicago Climate Charter.

**1.4.16** Assess community-wide climate risk and vulnerability. To address the needs of different populations and geography, assess data to determine whether Wilmette is meeting the needs of all residents.

Wilmette Draft Plan 7-17-19

<b>Climate Goals: Wilmette Municipal Operations and Public Property</b>		
<b>Category</b>	<b>Year</b>	<b>Metric</b>
Renewable energy	2025	Produce and consume 100% of energy on municipal properties from renewable sources
Energy consumption	2025	Reduce municipal building and operations energy consumption xx% from 2018 levels
	2050	Reduce municipal building and operations energy consumption xx% from 2018 levels
Transportation & mobility	2025	Achieve zero-emissions technology in all Village-owned vehicles and equipment Achieve xx permeable sidewalks Achieve xx bike lanes
Carbon emissions	2030	Achieve carbon neutrality for municipal operations and public property
Waste	2025	Achieve zero waste for municipal operations and public property
Land use & green infrastructure	2025	Restore and maintain xx% net acres of public, Village-owned and parkway lands to native plants
	2030	Restore and maintain xx% net acres of public, Village-owned and parkway lands to native plants
Water use: Buildings	2025	Reduce water consumption on Village-owned and public properties by xx%
Water runoff	2025	Reduce runoff from Village-owned and public properties by xx%

**Climate change mitigation: private property**

**1.4.17** Set short- and long-term private property goals. Subdivide buildings and land by residential and commercial. To assess GHG emissions, include transportation; land use and vegetation; water use and water runoff; and waste.

**1.4.18** Set a timeline to require new and existing buildings to meet stringent energy and water standards. Provide energy performance data to home buyers.

<b>Climate Goals: Wilmette Village-Wide Private Properties</b>		
<b>Category</b>	<b>Year</b>	<b>Metric</b>
Renewable energy	2030	Produce and consume 100% of energy from renewable sources
Energy consumption	2025	Reduce building energy consumption xx% from 2018 levels
	2050	Reduce building energy consumption xx% from 2018 levels
Transportation & mobility	2025	Reduce transportation emissions xx% from 2018 levels
	2050	Reduce transportation emissions xx% from 2018 levels
Carbon emissions	2050	Achieve carbon neutrality for private property
Waste	2050	Achieve zero waste Village-wide
Land use & green infrastructure	2025	Restore and maintain xx% net acres of private land to native plants
	2030	Restore and maintain xx% net acres of private land to native plants
Water use: Buildings	2025	Reduce water consumption in all buildings by xx%
	2050	Reduce water consumption in all buildings by xx%
Water runoff	2025	Reduce water entering sewers from private properties xx%

## Climate Resilience

### 1.4.19 Coordinate climate resiliency efforts with federal, state and regional initiatives.

- a. Develop/update Wilmette's Pre-Disaster Hazard Mitigation Plan to prepare for responses to climate-related emergencies and extreme weather. Prioritize climate impacts and resilience issues such as drainage and flood protection, safe drinking water, sewage, roads, electric and gas infrastructure, standards for building and site planning, heat, air quality and infectious diseases.
- b. Use the guides provided by the Illinois Emergency Management Agency and seek funding to prepare the PDHMP in the Disaster Mitigation Act of 2000.
- c. Assess infrastructure and public safety threats that will increasingly occur with climate change such as extreme weather. Use the Federal Emergency Management Agency community guidelines. Consider issues that will worsen with climate change, and include senior, childcare and medical facilities; medical providers; schools; shelters; transport; and hazardous materials.

### 1.4.20 Protect the needs of vulnerable populations in the Village.

- a. The impacts of pollution and climate change within and across regions is not equally distributed. Within the Village, people who are or may become more vulnerable have lower capacity to prepare for and cope with climate change impacts. Resilience actions must include planning for all populations, which ultimately will be more effective in preparing for resilience in the entire Village.
- b. Conduct targeted meetings to identify people less able to prepare for and respond to climate hazards such as lower-income residents, elderly and children, people with disabilities, historically marginalized people, renters, and people without transportation.
- c. Identify sources of financial assistance for more vulnerable populations such as higher maintenance costs, food expenses, flood insurance and utility bills.

## Air quality

### 1.4.21 Protect outdoor air quality to reduce Wilmette's contribution to air pollution.

- a. Continue to forbid burning landscape waste. Study the program structure of requiring bags with fees as a possible model for other ordinances.
- b. Expand the composting service for residents and businesses.
- c. Facilitate business compliance with air quality standards. Create educational materials for businesses on federal and state and Wilmette requirements.
- d. Participate in Illinois Partners for Clean Air to alert the public on Air Pollution Action Days when low winds and high temperatures cause elevated levels of air pollutants including ozone and particulate matter.
- e. Continue Wilmette's gas-powered leaf blower ban, and expand it to other high-emitting small engines.
- f. Continue to monitor and enforce the ban on coal tar sealant.
- g. Continue to promote policies per Clean Air Counts.

**1.4.22** Protect indoor air quality. As energy efficiency improves with tighter building envelopes, indoor air quality has to be a concurrent consideration.

- a. Establish policies to meet the Illinois Department of Public Health Indoor Air Quality standards and EPA guidelines. Indoor air pollution typically includes radon, carbon monoxide, hydrogen sulfide, particulates, formaldehyde, ozone, nitrogen dioxide, smoke and consumer products containing lead and toxins.
- b. Develop protocol to address indoor air quality exacerbated by climate change, such as mold developing after flooding.
- c. Require public buildings to follow the Indoor airPLUS program with construction practices and product specifications to minimize airborne pollutant exposure.
- d. Use low volatile organic compound (VOC) cleaners, paints, and paving practices to reduce VOC emissions for all municipal operations.
- e. Establish stringent indoor air quality practices, and require new public buildings to follow the Indoor airPLUS or a similar program.

### **Outreach and Education**

**1.4.23** Create educational and incentive programs to empower residents, building owners, businesses, and employees to reduce energy and water consumption, and use carbon-sequestering native plants.

- a. Survey and hold public stakeholder meetings to optimize decision-making.
- b. Publicize and continuously update Wilmette's achievement of goals in the Plan to raise public awareness and bring together the community on shared goals.
- c. Lead by example with municipal operations and public properties as models.
- d. Develop education, outreach and engagement on climate change and solutions by partnering with nonprofits, schools, the public library, parks and beaches, faith communities, energy and waste service providers, employers and employees, and elected and appointed representatives.
- e. Educate and inform the community about the air quality index and water quality.
- f. Educate about and connect the public with low- and no-cost options for energy and water efficiency such as incentive programs through Nicor Gas and ComEd, including those that benefit more vulnerable populations.

### **1.5 References**

Wilmette Resolutions 2018-R-14 and [2018-R-15](#)

United Nations Intergovernmental Panel on Climate Change, [Special Report: Global Warming of 1.5°C](#) (October 2018)

UN Environment's Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, [Global Assessment Report](#) (April 2019)

U.S. Environmental Protection Agency, [What climate change means for Illinois](#) (2016)

United States Global Change Research Program, [Fourth National Climate Assessment Volume I](#) (2017)

United States Global Change Research Program, [Fourth National Climate Assessment Volume II and Chapter 21: Midwest](#) (2018)

New York Times, [Why half a degree of global warming is a big deal](#) (Oct. 10, 2018)

[carbonn® Climate Registry website](#)

ICLEI Local Governments for Sustainability and carbonn® Climate Registry, [Multilevel Climate Action: The Path to 1.5 Degrees](#) (Bonn, Germany 2018).

[C40](#)

[Climate Mayors](#) and [Climate Mayors Electric Vehicle Purchasing Collaborative](#)

[Sierra Club Ready for 100](#)

[Paris Climate Agreement](#)

[#WeAreStillIn](#)

[Chicago Climate Charter](#)

[Global Covenant of Mayors for Climate and Energy](#)

Illinois Department of Public Health, [Guidelines for Indoor Air Quality website](#)

U.S. Environmental Protection Agency, [Indoor Air Quality website](#) and [Indoor airPlus](#)

Illinois Emergency Management Agency, [Mitigation Planning website](#)

Department of Homeland Security, [Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards](#) (2013)

Chicago Metropolitan Agency for Planning, [Climate Adaptation Guidebook for Municipalities in the Chicago Region](#) (2013)

U.S. Environmental Protection Agency, [Local Government Climate and Energy Strategy Series website](#)

## CHAPTER 2 – ECONOMIC DEVELOPMENT

### 2.1 Introduction

*[Note to Draft: This Sec. 2.1 is written with the assumption that some general demographic information would be included in broader introduction]*

Although, Economic Development and the cultivation of a green economy may seem tangential and an indirect way to address sustainability, the chances of succeeding in creating a long-term sustainability plan can undoubtedly be improved by engaging with Wilmette’s commercial stakeholders in addition to its residents. Wilmette has the opportunity to become a leader and model for green economic development on the North Shore, but with the appeal of commercial growth, local business’s participation in reducing its environmental impact will also be critical given the material impacts on energy, waste and water created by Wilmette’s economic activity.

Wilmette’s commercial activity is concentrated in the following areas:

- Downtown/Green Bay Road Corridor centered around Village Hall and the Metra UP North Train Station;
- Plaza del Lago shopping center on Sheridan Road at the northern border of the village;
- Edens Plaza shopping center located at Lake Street and the Edens Expressway
- Linden Square adjacent to the Linden CTA terminal at Linden Avenue and 4<sup>th</sup> Street

Although the Workforce Development and Innovation goals under the GRC2 Framework may not apply to a village of Wilmette’s size and makeup, there are a number of impactful Green Economy and Policy goals set forth under the GRC2 which are achievable in the near and medium term.

### 2.2 Existing Conditions

A number of initiatives geared towards the local green economy and related government policies are already in place through efforts of local governmental bodies and the impressive work of Wilmette’s not-for-profit community groups:

Recognize and support businesses who practice and promote sustainability, for example, Go Green Wilmette’s (“GGW”) Business Partners for a Greener Wilmette program;

Promote the use of local goods and services, and tourism featuring natural and cultural assets of the community in partnership with:

Wilmette Kenilworth Chamber of Commerce  
Village of Wilmette Historical Society  
Wilmette Park District; and

Support expanded job opportunities and sufficient wages based upon the Village of Wilmette's adoption of the Cook County minimum wage and sick time opt-in.

## **2.3 Goals**

**2.3.1** Attract, retain, recognize and support local businesses who practice and promote sustainability.

**2.3.2** Create and promote a community brand featuring natural resources or cultural characteristics of community.

## **2.4 Recommendations**

### **2.4.1 Adopt, endorse and expand Go Green Wilmette's Business Partners for a Greener Wilmette Program.**

Go Green Wilmette (GGW) initiated the Business Partners for a Greener Wilmette program in 2012 to publicly recognize Wilmette businesses that engage in environmentally responsible practices and encourage increased sustainability wherever feasible. Current benefits include promotion of businesses that meet GGW's internal application process through GGW public outreach channels. By adopting the GGW plan and formalizing/defining certain certification processes, the Wilmette can expand the benefits of becoming a "green-certified" business including:

Preferential status for procurement decisions by the Village of Wilmette government and lobbying for other local governmental bodies to do the same (e.g., Wilmette Park District, local school districts, township government, etc.);

Expedite Wilmette permit process for green-certified businesses;

Dedicate parking spaces for green businesses;

Recognition of certification and "working towards" certification; and

Publicize green businesses to the public through Wilmette website, community events, etc.

**2.4.2 Digitally expand sustainability messages on Village media/websites.**

Wilmette is endowed with a variety of natural resources and cultural sites of significance ranging from parks, beaches, historical sites, and “green” services. By coordinating publicity and marketing efforts and continuing to highlight the community, the “branding” efforts’ contribution to the broader sustainability efforts which will attract visitors and businesses that share in community values and hope to reap the benefits from a thriving green economy.

**2.4.3 Formalize partnerships with local purpose-specific entities in furtherance of above (e.g. Chamber of Commerce, Wilmette Park District).**

Create a working group to coordinate sustainability and green economy promotion efforts as set forth above. The working group may evolve into a formal “green business association” to augment or complement Chamber of Commerce, GGW and other local community group efforts in providing resources, general support, business models, consulting, and networking opportunities for local sustainable business.

**2.5 References**

[Add web sites for organizations listed above.]

## **CHAPTER 3 – ENERGY**

### **3.1 Introduction**

Per the recent signatory of the Greenest Region Compact 2 (GRC2) and the resolution adopted by the Village of Wilmette, this report is provided by the Environmental and Energy Commission as recommendations to address the Energy category of the Greenest Region Compact 2. This report will discuss the Village of Wilmette (property, buildings and contents, street-lights, motor vehicles and heavy equipment that is owned, operated or under the control of the Village of Wilmette) and Other Village Services/Private (everything in the Village that is not defined under public – i.e., all business and residential real estate, vehicles, energy utilizing devices *etc.*) sectors and make recommendations for improvements to become a more sustainable community with regards to energy. This energy report must be read in tandem with the GRC2 Climate Category report as Energy and Climate will be closely aligned in suggestions and goals to achieve.

### **3.2 Existing Conditions**

In 2011, a Greenhouse Gas Inventory Report was written for the Village of Wilmette that included an evaluation on electricity and natural gas used from 2008 through 2010. From this evaluation, it was determined that over half of the greenhouse gas emissions came from electricity use and a third of the emissions came from natural gas use. Most of the electricity used was by residential and small businesses with Government use the third highest user.

Electricity use is the main contributor to CO<sub>2</sub> scope 2 emissions (emissions generated by the power plants) and the combustion of natural gas in boilers is the main contributor to CO<sub>2</sub> scope 1 emissions (emissions generated on-site where the boiler is used). The Village of Wilmette can reduce these emissions through the reduction of electricity and natural gas use and through energy efficiency programs. While the report discussed above showed that most of the electricity use came from residents, the recommendation is for the Village to work in a multi-faceted manner to address improvements in all sectors. It is recommended that improvements be made in these three areas: 1) actions the Village can take to impact their own energy usage; 2) collaboration with other large energy users in the Village (Village services – schools, park district, library, and large and small businesses) to gain energy reductions; and 3) resident education and outreach to encourage reduction and efficiencies.

### **3.3 Goals**

**3.3.1** Assess Village of Wilmette municipal energy use, then develop and implement reduction strategies.

**3.3.2** Set percentage reduction goal and timeline to align with Climate Change goals.

**3.3.3** Educate others within the Village regarding energy reduction options.

### **3.4 Recommendations**

#### **Manage and Reduce the Village of Wilmette's Energy Usage**

The energy used by the Village must be understood in quantity and use type so that reductions and efficiencies in energy use can be realized. An energy use reduction goal should be set to align with the GHG emissions reduction identified in the Climate Category goals.

#### **3.4.1 Benchmark Energy Usage**

A new Energy Use study should be completed for 2018 to compare to the 2011 report. It is expected that there should not be a large difference between the rankings of the largest users of energy from 2011 to 2018. However, updated information is needed to move forward with accuracy in the recommendations to reduce use. This energy use benchmark will identify all of the Wilmette energy users and the Public Sector use data can then be analyzed. An Energy Use study should be completed annually so trends and improvements/reductions can be tracked.

#### **3.4.2 Set an Energy Reduction Goal**

An energy reduction goal should be set to align with the GRC2 and climate section recommendations.

#### **3.4.3 Conduct an Energy Audit and Implement Actions from the Audit**

An energy audit should be conducted, by a third party, of all Public Sector buildings, facilities, equipment and any other public operations. Energy reduction and energy efficiency strategies to Village owned facilities and equipment identified in audit should be implemented. The strategies/projects should be prioritized with those that are either no/low cost, have the best return on investment or those that have the greatest energy reduction impact should be evaluated first getting the highest priority. Other projects should be included in a budget for longer-term implementation.

#### **3.4.4 Develop Village Internal Policies and Outreach for Energy**

Energy use reduction should be evaluated with every capitol project to ensure energy reductions and efficiencies are considered during the development and implementation

phase. Internal policies for energy use should be developed (ex: power down equipment and turn off lights when not in use). Internal sourcing policies should be developed to source energy star equipment or other reduced energy use equipment.

#### **3.4.5 Evaluate and Purchase Renewable Energy**

Renewable energy should be evaluated as a viable option as the source of electricity to run the Village. This could be in the way of Renewal Energy Credits (i.e., wind), solar energy or aggregation of energy. Renewal Energy use should be encouraged upon other community stakeholders – i.e., businesses, Park District, Schools, Library, etc.

#### **3.4.6 Develop a Green Team**

A green team could be developed with members from the D39 School District, Library, Park District and large business that use a lot of electricity. The purpose of the team would be to collaborate on electricity reduction strategies and share best practices. The reduction of energy use by these other large electricity users would help reduce the overall electricity use footprint in the Village of Wilmette.

#### **3.4.7 Obtain Energy Reduction Commitments**

Work with other members of the Village, develop goals and commitments in line with the climate goals.

#### **3.4.8 Develop Outreach and Education Campaign for Residents and Small Businesses and Building Landlords**

Outreach would involve education on: 1) why to reduce energy use; 2) contacts to conduct an energy audit; 3) upgrade to energy efficiency appliances and other equipment; and 4) use of renewal energy (solar and community solar). Develop an energy reduction award to be given to local businesses who reduce their energy the most from a given benchmark time. Keep stakeholders informed on the total impact of the energy reduction.

#### **3.4.9 Expedite Permit Approval Process for Projects with an Impact on Energy**

Permit requests for projects that have an impact on energy reduction, renewal energy install or replacement of equipment with more efficient units should be fast tracked and approved by the Village in a more expeditious manner. Permit fees could be reduced for these types of projects.

### **3.5 References**

Greenhouse Gas Inventory, Village of Wilmette, **EEC**, November 28, 2011  
GRC2 Energy/Climate Questions & Answers, Village of Wilmette, April 2019  
Community Solar Subscription Opportunity Assessment: Village of Wilmette, Proposal

## CHAPTER 4 – LAND

### **4.1 Introduction**

Healthy ecosystems and natural spaces improve the quality of our drinking water, our food, and the air we breathe. Natural systems with a high diversity of plants and animals, or high biodiversity, tend to be healthier, more productive, and better able to adapt to challenges like climate change. In fact, healthy ecosystems can provide 37% of the mitigation needed to limit global temperature rise, according to a 2019 United Nations report. Natural landscapes also absorb a significant amount of storm water.

Global biodiversity is declining at unprecedented rates, but we have the opportunity at a local scale to help reverse this decline. Pollinators such as bees and butterflies have evolved to utilize the flowers and pollen that are indigenous to the upper Midwest. Thus, including native plants in our landscaping will provide habitat for these critical components of global biodiversity. Even small gardens can make an important contribution, as pollinators will use suburban yards as stopover sights on their way from one nature preserve to another. Birds also rely on trees, shrubs, and wildflowers that are native to the Midwest, as birds eat the caterpillars and other insects that depend on these local species. Birds, butterflies, and wildflowers not only represent global biodiversity and healthy nature, but they provide joy and beauty and enhance the quality of our lives.

Another component of our suburban landscape is the care of our lawns, which currently relies heavily on two-stroke, gasoline engines and chemical inputs. These engines are the dirtiest and loudest of existing technology and contribute significant amounts of carbon dioxide, volatile organic compounds, particulate matter, and nitrous oxides to our air. These pollutants are especially harmful to the elderly, the young, and those suffering from emphysema, bronchitis, and asthma. The excessive noise created by these engines contributes to stress-related illnesses such as high blood pressure, sleep disruption, and lost productivity, as well as hearing loss for those using the equipment. Fortunately, newer technologies can replace these older, dirtier machines.

Organic lawn care practices use natural fertilizers and ecological principles to provide healthy lawns with many fewer chemical inputs. We can shift our lawn care culture from focusing on immaculate tidiness to focusing on healthy green spaces that cultivate life whether through thriving lawns or species-rich gardens. This shift would improve the health and biodiversity of our landscapes and improve the quality of our lives.

## **4.2 Existing Conditions**

Most green space within the Village of Wilmette – whether residential yards or public open space – is comprised of lawn monocultures and is maintained using gas-powered, two-stroke equipment and heavy chemical inputs.

Our urban forest is valued and supported by residents and village staff alike. Staff are knowledgeable, helpful, and work hard to maintain our older trees and promote the planting of new trees.

The Village actively supported the preservation and restoration of the Elmwood Dunes Preserve in 2013, which provides beauty, respite, and beach (but not swimming) access for residents and visitors, as well as providing habitat for birds, butterflies, other pollinators, and hundreds of native wildflowers and grasses. The community strongly supports this preserve, and volunteers regularly contribute to its maintenance.

## **4.3 Goals**

**4.3.1** The Village of Wilmette aims to improve the quality of our air and water, to reduce our community’s greenhouse gas emissions, and to increase the degree to which our green spaces support ecosystem services and biodiversity.

**4.3.2** By 2025, our biodiversity goal is to achieve Community Wildlife Habitat certification through the National Wildlife Federation’s certification program. This would require approximately 200 residential properties, five schools, and eight public spaces to include native habitat, water, and shelter on their grounds. The full requirements can be found here or in the appendix: [www.nwf.org/CommunityWildlifeHabitat/](http://www.nwf.org/CommunityWildlifeHabitat/).

**4.3.3** By 2030, our goal is to have 100% of village-owned property and 50% of residential properties using sustainable landscape methods that include non-gas powered equipment and reduced chemical inputs, as described below.

## **4.4 Recommendations**

### **4.4.1 Manage Public and Private Landscapes to Optimize Ecosystem Services and Support Biodiversity**

#### **Model best practices on village property.**

1. Build on and showcase the success of Elmwood Dunes, the Fire Station, and the Village Hall rain garden to incorporate native plants, rain gardens, and permeable hardscapes into at least 70% of village-owned landscapes.
2. Modify parkway tree list to include at least 70% native species.

**Encourage and incentivize the incorporation of native plants, rain gardens, and permeable hardscapes on private property, including residential, business, and no-profit properties.**

1. Continue funding the RainReady program to encourage and enable sustainable residential landscaping.
2. Work toward community wildlife habitat certification through the National Wildlife Federation's Community Wildlife Habitat program ([www.nwf.org/CommunityWildlifeHabitat/](http://www.nwf.org/CommunityWildlifeHabitat/)).
3. Sign the National Wildlife Federation's Mayors' Monarch Pledge, specify which action items Wilmette will take, and implement these actions ([www.nwf.org/mayorsmonarchpledge](http://www.nwf.org/mayorsmonarchpledge)).
4. Education through the Communicator and other outlets about the value and beauty of natural yards.
5. Co-sponsor the Go Green Wilmette Sustainable Yards Tour and Native Plant Sale.
6. Changes to the zoning code that incentivize native landscaping, rain gardens, and permeable hardscapes.
7. Review current zoning code to remove any restrictions on the incorporation of native plants into residential landscapes.
8. Educate residents about the identity of and harm caused by invasive species, and encourage their removal.
9. Encourage and support the use of native plants and rain gardens within residential parkways.
10. Add a minimum requirement of 70% native species to section 20-15.5(k) of the village code that addresses plant diversity requirements for developments.
11. Add a minimum requirement of 70% native species to section 20-15.9(f) of the village code that addresses plant coverage in parking lot islands.
12. Add a minimum requirement of 70% native species to section 20-15.10 of the village code that addresses plant coverage in buffer yards.
13. Remove the phrase "neat and orderly" from section 20-15.4(d) that addresses the maintenance of plant materials.
14. Develop effective incentives to support section 20-15.5(j) of the village code, which reads thus: "Energy Conservation. Plant material placement should be designed to reduce the energy consumption needs of the development. In addition, landscape designs must take into account and make an effort to implement sustainable design standards, where appropriate."

**Protect existing green spaces from development or degradation, and support such protection by partner agencies.**

1. Partner with IDOT to remove invasive species from highway shoulders that lie within Wilmette.
2. Ensure that any destruction of green space that requires a village permit provides compensation to the community for its loss.

**Strengthen the existing Village tree ordinance.**

1. Model our tree ordinance after the Chicago Region Trees Initiative (CRTI) Gold standard (<http://chicagorti.org/OrdinanceTemplates>).
2. Create a tree ordinance page on the website so residents can easily access it.
3. Provide education to residents about protecting trees generally and especially during construction.
4. Clarify and highlight in the ordinance the requirement to protect trees during construction.

**4.4.2 Manage Cultivated Landscapes Sustainably**

**Model best practices on village property**

1. Transition to the use of battery-powered lawn care equipment on village property such as at Village Hall, the Fire Station, and the Police Station. Work with Park District to transition their practices as well.
2. Minimize the use of fertilizer on village property, and transition to organic fertilizers that result in minimal run-off to waterways.

**Encourage and facilitate best practices on residential properties**

1. Education through the Communicator and other outlets about the community health benefits of sustainable landscaping.
2. Develop incentives for landscape companies to transition to battery-powered equipment and minimal/organic fertilizer use. Possible ideas: A tiered pricing system for licensing that rewards demonstrated training in, and use of, battery-powered equipment and minimal/organic fertilizer. List sustainable companies on the village website, to allow residents to choose companies using sustainable practices.
3. Co-sponsor a workshop to train landscape companies and municipalities in the successful transition to battery-powered equipment.
4. Partner with neighboring communities to develop incentives for landscape companies, so that there is more leverage to effect change.
5. Remove public parks and golf courses from the list of places exempted from the current gas-powered leaf blower restriction.

**4.4.3 Encourage Locally-Grown Food**

1. Allow residents to keep egg-laying hens by adding them to the list of exempted animals under section 4-2.3 of the Village Code.
2. Support residential vegetable gardens, which can be difficult in many Wilmette yards due to heavy shade by older trees. Encourage front-yard and parkway gardens and provide education and resources to help residents learn how to grow food under shady conditions.

3. Provide space on Village property for community gardens, or support and encourage the Park District to increase the number of community gardens on park district land.

#### **4.4.4 Protect Open Space**

1. Continue supporting volunteer engagement in the maintenance of Elmwood Dunes Preserve. More actively promote volunteer events and celebrate the preserve.
2. Where opportunities like Elmwood Dunes Preserve arise in the future, preservation and restoration should be top considerations.
3. Require compensation for damage to natural areas, wetlands, and other storm water retention areas, in cases where private or other governmental entities propose to damage or destroy green space within the village, and where village permitting will be required.

#### **4.4.5 Protect and Restore Soil Integrity.**

Enforce strong rules that are effective in preventing construction runoff.

### **4.5 References**

Bloorchian, A., L. Ahiablame, A. Osouli, and J. Zhou 2016. Modeling BMP and vegetative cover performance for highway stormwater runoff reduction. *Procedia Engineering* 145:274-280.

Kwok, R. 2018. News feature: Accidental urban oases. *Proceedings of the National Academy of Sciences*. 115:4800-4804.

Pollock, C., Sparks, G. and J.L. Banks 2018. Lawn and garden equipment sound: A comparison of gas and battery electric equipment. *Journal of Environmental and Toxicological Studies* 2:1-9.

Purakayastha, T. J., D. R. Huggins, and J. L. Smith 2008. Carbon Sequestration in Native Prairie, Perennial Grass, No-Till, and Cultivated Palouse Silt Loam. *Soil Science Society of America Journal* 72:534-540.

United Nations Report: Nature's dangerous decline 'unprecedented;' species extinction rates accelerating 2019.

<https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>.

Volckens, J., D.A. Olson, and M.D. Hays 2008. Carbonaceous species emitted from handheld two-stroke engines. *Atmospheric Environment* 42:1239-1248.

Winfree, R., N.M. Williams, J. Dushoff, and C. Kremen 2007. Native bees provide insurance against ongoing honey bee losses. *Ecology Letters* 10:1105-1113.

## **CHAPTER 5 – LEADERSHIP [Updates needed from Julie Wolf]**

### **5.1 Introduction**

### **5.2 Existing Conditions**

### **5.3 Goals**

### **5.4 Recommendations**

### **5.5 References**

## **CHAPTER 6 – MOBILITY**

### **6.1 Introduction**

The Village of Wilmette has about 65 miles of roadway. The Village is located close to the City of Chicago and its more than 27,000 residents are served by CTA's Purple Line, Metra's commuter train, as well as PACE bus service. While many of the Village's residents use public transportation services for their daily commute, a significant portion of residents also use their personal vehicles as their primary mode of transportation. The Village also has a significant recreational bicycle ridership.

### **6.2 Existing Conditions**

#### **Bicycle and Pedestrian Transportation**

The Village is continually identifying gaps in pedestrian and bicycle networks and is currently creating a bicycle and pedestrian plan to improve connectivity within the Village and surrounding community. This includes working with regional partners to connect bicycle facilities with existing and planned trails. The Village provides some bicycle parking at municipal facilities, business districts, and at the two train stations located in the Village.

#### **Transportation Infrastructure**

The Village attempts, as much as possible, to maintaining streets and sidewalks without harming natural resources. Safety is always the Village's priority and the Village will take necessary steps to make sure residents are safe while using the streets and sidewalks in the Village. The Village has a tree planting program in an effort to keep green infrastructure elements into roadway design. The Village attempts to incorporate as much sustainable elements as possible during all capital improvement planning efforts and is currently developing a green infrastructure handbook. The Village is currently evaluating the feasibility of introducing electric charging stations at municipal and public parking facilities. The Village also maintains synchronized traffic lights to encourage efficient traffic flow and reduce vehicle idling at intersections. The Village continually coordinates with regional agencies to encourage transit, pedestrian, and bicycle mobility in an effort to make alternative modes of transportation accessible to residents. The Village is continually expanding its Safe Routes to School pedestrian program.

#### **Policy**

The Village continually seeks State and Federal grants to help fund transportation system improvements. The Village has adopted anti-idling policies for Village vehicles and around schools. The Village has also adopted a Complete Streets policy to be

considered for implementation during any upcoming reconstruction or rehabilitation projects. The Village has policies that encourage Village employees to use alternative modes of transit to commute to work and to encourage residents to use alternate transportation (walking, PACE, bicycle) for public events.

### **6.3 Goals**

The goal of the Village regarding mobility should include the following items:

- 6.3.1** Improve access to alternative transportation to Village residents;
- 6.3.2** Educate Village residents about the benefits of using alternative transportation (personal and environmental);
- 6.3.3** Reduce traffic congestion;
- 6.3.4** Eliminate vehicle idling;
- 6.3.5** Encourage residents to have vehicles with alternative fuels; and
- 6.3.6** Maintain a transportation infrastructure that is in good state of repair, sustainable, and accommodates all modes of transportation.

### **6.4 Recommendations**

#### **Bicycle and Pedestrian Transportation**

**6.4.1** It is recommended that the Village should work with relevant local organizations to earn and maintain bicycle and pedestrian friendly community designation by 2025. The Village should also work with neighboring communities to setup a bicycle sharing program with multiple access points (similar to what City of Chicago has) allowing residents of Wilmette to have a convenient access to bicycles.

**6.4.2** The Village should consider including dedicated bicycle lanes on all major Village roadways during each street's next rehabilitation project. The Village should encourage and incentivize commercial buildings to make bicycle parking facilities available for their tenants/customers. Also, the Village should provide sufficient bicycle parking sites around strategically selected areas to encourage pedestrian and bicycle usage.

#### **Transportation Infrastructure**

**6.4.3** The Village should implement the use of the Envision checklist and infrastructure rating system during project development.

**6.4.4** The Village should also introduce electric charging stations at Village-owned parking facilities by 2025.

**6.4.5** The Village should develop policies that encourage alternative-fuel vehicles and electric-vehicle charging facilities in the Village and the Village should also implement alternative fuel vehicles for official use.

**6.4.6** The Village should adopt a transportation asset management system (for assets such as pavement, sidewalk, etc.) in order to extend the life of the Village transportation infrastructure and facilitate timely repairs and preservation activities.

**6.4.7** The Village should explore the use of innovative environmentally friendly designs during rehabilitation and reconstruction of transportation infrastructure.

**6.4.8** The Village should maintain and enforce no-idling zones around transit stations and schools by 2020.

Policy

**6.4.9** The Village should introduce policy that encourages residents to own alternative-fuel vehicles.

**6.4.10** The Village should perform a study on ways to expand local transit connections to encourage the use of public transit in the Village.

**6.4.11** The Village should seek ways to collaborate with neighboring municipalities and local transit authority to improve and expand regional transit capacity to encourage the use of public transit in the region. Also, the Village should collaborate with local transit agencies to promote the use of public transit options by Village residents.

**6.4.12** The Village should engage local businesses and the Chamber of Commerce to encourage flexible scheduling and telecommuting options for employees.

## **CHAPTER 7 – MUNICIPAL OPERATIONS**

**[Updates needed from EEC Staff]**

### **7.1 Introduction**

### **7.2 Existing Conditions**

### **7.3 Goals**

### **7.4 Recommendations**

### **7.5 References**

## CHAPTER 8 – SUSTAINABLE COMMUNITIES

### **8.1 Introduction**

Individual choices sum to create large impacts in a community. This section focuses on three topics that affect sustainability and climate change in the Village.

#### Diversity of Housing Stock

Maintaining diversity of housing stock is an environmental, social justice, and historic issue. A Preservation Green Lab study<sup>1</sup> found that reusing and remodeling existing buildings has less impact on climate, resource use, human health, and ecosystems than does building a new home. Further, increasing a home's footprint reduces the permeable area available for planting carbon-sequestering plants. Of note is the removal or damage of large canopy trees that often occurs due to new construction.

A culture of tearing down existing homes to build larger homes that cover more open space changes the mix of diversity of housing stock available, specifically reducing the availability of smaller, more affordable homes. The destruction of older and historic homes also reduces diversity in architectural styles.

#### Local Food

On average, produce travels 1500 miles<sup>2</sup> before arriving to our plates and loses many nutrients in the process. Allowing and encouraging the community to produce their own food would reduce carbon emissions and waste.

#### Light Pollution and Pesticide Use

Light pollution negatively affects the local ecosystem, including night pollinators<sup>3</sup> and lightning bug populations<sup>4</sup>. Additionally, it is estimated that up to 40% of insects are forecast to become extinct in the coming decades, largely due to climate change and pesticide use<sup>5</sup>. Dangerously low insect populations<sup>6</sup> will affect our food supply and ecosystem.

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<sup>1</sup> [https://living-future.org/wp-content/uploads/2016/11/The\\_Greenest\\_Building.pdf](https://living-future.org/wp-content/uploads/2016/11/The_Greenest_Building.pdf)

<sup>2</sup> [http://ngfn.org/resources/ngfn-database/knowledge/food\\_mil.pdf](http://ngfn.org/resources/ngfn-database/knowledge/food_mil.pdf)

<sup>3</sup> <https://will.illinois.edu/environmentalalmanac/program/dark-skies-benefit-people-and-wildlife>

<sup>4</sup> <https://www.firefly.org/light-pollution.html>

<sup>5</sup> <https://www.cnn.com/2019/02/11/health/insect-decline-study-intl/index.html>

<sup>6</sup> <https://www.nytimes.com/2018/11/27/magazine/insect-apocalypse.html>

## **8.2 Existing Conditions**

### Diversity of Housing Stock

The Village does not currently record housing stock or new construction in a reportable database. Anecdotally, new construction reduces permeable/plantable areas, replaces smaller homes with larger, and enables canopy trees destruction.

### Local Food

The Village of Wilmette currently does not allow residents to raise backyard chickens or bees.

The Wilmette Park District offers 154 community garden plots in two locations – Centennial Park and West Park. A limited number of plots are available each year, and the Park District maintains a wait list.

### Light Pollution and Pesticide Use

There are no known data on light pollution and pesticide use throughout the Village.

## **8.3 Goals**

### Diversity of Housing Stock

**8.3.1** Maintain and encourage diversity of housing stock – architecturally, historically, economically, and in type (e.g., single-family, multifamily, apartment buildings, etc.).

### Local Food

**8.3.2** Encourage and enable residents to grow their own food.

### Light Pollution and Pesticide Use

**8.3.3** Take proactive action to support insects by reducing light pollution and pesticide use in the Village.

## **8.4 Recommendations**

### Encourage Diversity of Housing Stock and Reduce Tear-Downs

**8.4.1** The Village should evaluate permeable land and tree loss data on tear-downs and project open space and housing diversity loss into the future. The Village does not currently collect sufficient data to assess permeable/plantable land loss resulting from new construction and home expansions. Thus, the Village should begin recording the following data in a database for ease of reporting:

Address, reason for tree removal, date, and number of trees affected;

Tree inventory for private trees; and

Percent permeable surface loss with new home or home renovation.

**8.4.2** The Village should review the Village Zoning Code against communities with diverse housing stock (e.g., Evanston) to determine why tear-downs are more prevalent in Wilmette.

**8.4.3** The Village should adjust the Village Zoning Code to discourage tear-downs for single-family homes.

**8.4.4** The Village should require new buildings to be LEED-certified with permeable hardscaping if the home covers a significantly larger percentage of the original home's footprint.

**8.4.5** The Village should review/revise the Village Zoning Code and Master Plan to encourage multi-family development in Wilmette, including 3-flats and coach houses.

**8.4.6** The Village should serve as a resource and source grants to help the community make their older homes more sustainable.

**8.4.7** The Village should educate the public on local historic districts and landmark buildings.

#### Encourage and Engage the Community in Sustainable Local Food

**8.4.8** The Village should adjust the Village code to allow residents to raise backyard chickens.

**8.4.9** The Village should adjust the Village code to allow residents to raise bees.

**8.4.10** The Village should work with other Wilmette governmental bodies to increase the number and size of community gardens, ensuring that they are distributed evenly throughout the Village.

#### Preserve Dark Skies and Reduce Pesticide Use

**8.4.11** The Village should assess and adjust Village and other public lighting practices per the International Dark Sky Association (IDA)<sup>7</sup>.

**8.4.12** The Village should educate and encourage residents to turn off their porch lights when not in use.

**8.4.13** The Village should require that private security and garage lights operate on a motion sensor.

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<sup>7</sup> <https://www.darksky.org/our-work/lighting/public-policy/>

**8.4.14** The Village should use green practices instead of pesticides to maintain public property and rights-of-way.

**8.4.15** The Village should educate residents of the dangers of home pesticide use to pollinators and insects.

### **8.5 References**

Firefly Conservation and Research, "About Light Pollution"

Illinois Public Media, Environmental Almanac, "Dark Skies Benefit People and Wildlife"

Leopold Center for Sustainable Agriculture, "Food, Fuel, and Freeways: An Iowa perspective on how far food travels, fuel usage, and greenhouse gas emissions"

The New York Times Magazine, "The Insect Apocalypse is Here."

Preservation Green Lab, National Trust for Historic Preservation, "The Greenest Building: Quantifying the Environmental Value of Building Reuse"

## **CHAPTER 9 - WASTE and RECYCLING**

### **9.1 Introduction**

In the broadest sense, solid, liquid, or gaseous material that has exceeded its intended purpose is defined as waste. In addition, the excessive use of lights and the generation of high-level sounds can be considered a waste of energy. This chapter address solid waste which is commonly referred to as municipal solid waste (MSW). Liquid wastes are addressed in Chapter 10, Water, and gaseous wastes are addressed in Chapter 1, Climate.

In the course of ordinary, daily activities within the Village of Wilmette solid waste is generated by its residents and businesses. Also, things that have become obsolete, function poorly, or are no longer wanted become solid waste.

Certain steps must be applied to the management of solid wastes. First, measures should be taken to keep these wastes at a minimum. Second, these wastes must be safely stored and removed from working and living areas. Finally, these wastes must be properly disposed. All these steps must avoid pollution of the environment, endangerment of humans and other eco-receptors, and long-term adverse effects on the overall eco-system.

Ordinances, policies and regulations of the Village of Wilmette regarding the management of solid wastes must comply with applicable Federal and State of Illinois laws and regulations. Illinois has three principle laws regarding solid waste management and recycling; these are cited in the References.

Waste minimization is a set of processes and practices intended to reduce the amount of waste produced by reducing or eliminating the generation of such wastes at the source. Waste minimization supports efforts to promote a more sustainable community. Minimizing the production of solid wastes involves a three-fold approach:

- Reducing the procurement and acquisition of products that are in significant excess of expected utilization and consumption;
- Increasing the efficiency of utilization; and
- Diverting a significant part of the waste-stream to recycling.

Recycling and composting play an increasingly important role in reducing the net quantity of solid waste that requires ultimate disposal. The recycling ethic must be fostered through public policy and public education starting from childhood. The slogan, "Reduce, Reuse, and Recycle" must replace the all too common behavior of, "Discard at will."

The disposal of solid wastes is complex from both a quantitative and qualitative perspective. Certain wastes that are toxic or hazardous must be separated from the solid waste-stream. Special handling and methodology is required for the following classes of wastes:

- Drugs and other chemical waste that cannot be properly processed by the normal solid waste disposal system;
- Mercury-containing fluorescent lamp bulbs of all types;
- Lithium containing batteries;
- Substances derived from automobiles, including tires and lead-acid batteries;
- Medical-waste including infectious and potentially infectious materials, radioactive substances used in diagnostic testing or treatment, and so-called "sharps";
- Discarded television displays, computers, mobile cell phones, and other electronic devices; and
- Radioactive substances of both high-level and low-level types.

## **9.2 Existing Conditions**

The Village of Wilmette provides residents and small business the option of separating their solid wastes into three waste-streams: trash for land disposal; yard waste for composting; and recyclable materials, for example, glass or aluminum containers. The Village has recently expanded the composting program to include specified food wastes. These solid wastes are collected by the Village's contractor on a weekly schedule. Curb-side totes are available for each of the three separate waste-streams. The Village also maintains a 24 hour dumpster for the collection of electronic devices. Finally, the Village periodically holds a document destruction event for waste paper.

### **Collection**

The collection and disposition of municipal solid waste (MSW) in Wilmette may only be done by contractors who are licensed, franchise holders. For the past several years, Advanced Disposal is the authorized contractor to collect MSW from single-family residences, multi-family residences including high-rise condominium buildings and commercial buildings. Local law requires collection not less than once weekly from containers provided by the contractor. On the same day as MSW collection, items for recycling are collected in a separate truck. Recycled materials are not required to be segregated into glass, metal, paper, cardboard, etc. Trash and recycle collection are included in a monthly fee for each residential single-family unit which is billed and collected by the Village. Yard waste (grass clippings, small tree limbs, etc.) is also collected by the contractor in curb-side bags or bundles. This yard waste is sent to a composting facility, and each bag or bundle requires with purchased tags affixed. Yard

waste is collected from April through November. In the autumn, leaf collection from curbside piles is done by the same contractor and delivered to a composting facility.

In the year 2001 about 4,200 tons of compacted MSW was collected in Wilmette. By the year 2018, that was reduced to about 3,250 tons per year. That is almost a 25% reduction over those 18 years. The regression line, calculated by the method of least-squares for the yearly data, predicts that if the same annual rate of reduction of MSW were to continue, then by 2025, the annual amount of solid waste would be 52% less than that collected in the year 2001, and it would be about 43% less by the year 2035. However, during the same years, 2001 through 2018, the amount of material collected annually for recycling has not shown a progressive change: it has hovered around 4,325 tons. When the annual amount of solid waste collected for recycling over two decades is compared with that which was not sent for recycling, the recycling component is an increasing proportion of total solid waste.

### Special Wastes

Food waste is the single greatest component of solid waste in Illinois communities, comprising 32% of MSW. Next is construction and demolition debris (C&D) and other household items. These are removed by the Village's contractor. However, major construction projects must provide their own dumpsters and pay for the disposal costs.

By law, various electronic devices, including discarded television sets, computers, mobile telephones, and 14 other types are no longer allowed in municipal solid waste landfills. Liquids, used lubricating oils, fats and greases, as well as automobile tires and batteries have been excluded from licensed MSW landfills since 1996. Tire dealers are required to accept for disposal the same number of used tires as the number of new tires they sold.

Wilmette provides for the separate and anonymous collection of unused, expired, and excess drugs, including opioids, at the Police Station. Quantitative data are not available for drug nor most other items requiring special handling.

There are data for the collection of fluorescent light bulbs; but, they are not aggregated or analyzed so as to allow assessment of any change over time. For the separate collection of electronic devices, there are data for five months beginning in November of 2018. During that time, an average of about 2.5 tons was collected monthly from Wilmette. That projects to an annual rate of about 30 tons from all of Wilmette. A drop-off location for electronic devices is located at the Public Works Facility; it is open 24 hours per day to encourage residents to properly dispose of their electronic devices.

Disposal of items that are forbidden from inclusion in MSW still poses a special, personal burden for persons who have limited mobility, who do not have independent

transportation, or who have limited resources. These circumstances might pose a temptation to not properly segregate their solid wastes.

### Land Disposal

Wilmette is a member of the Solid Waste Agency of Northern Cook County (SWANCC) which employs several licensed solid waste landfills in the immediate area. Land disposal is used for most of Wilmette's municipal solid waste (MSW). Transfer stations are generally enclosed areas where MSW is sorted for delivery to a landfill that accepts that particular type among several types of waste, e.g., non-hazardous, residential, commercial, electronic, chemical, paint, etc. The Glenview Transfer Station is a nearby, large facility that services Wilmette. Advanced Disposal is the current contractor for Wilmette's MSW collection and disposal and uses several landfill facilities near Wilmette for disposition of household as well as commercial, non-hazardous solid waste.

### Recycling

Recycling is the preferred disposal alternative because it diverts a portion of the solid waste stream from landfills. An excellent guide to recycling, with details of what items may be recycled, and where it may be left for pick-up, or must be taken for drop-off, can be found at Go Green Wilmette's website; see the References. SWANCC also has a guide on its website, as well as a printed leaflet and a video version that also is on its website.

Wilmette offers the means for recycling paper and cardboard products, glass, cans, yard waste, and leaves of deciduous trees. The amount of matter submitted for recycling is dependent primarily on the habits and behavior of individuals as well as the mix of waste materials. Advance Disposal, the contractor for the collection of MSW, also collects and removes yard waste and recyclable waste from separate totes into separate trucks.

Several states have laws that require a refundable deposit on containers for soft drinks and other beverages. Data show that the rate of recycling of those aluminum and steel cans, and glass and plastic bottles, about doubles when refundable deposits are required by law, the so-called "Bottle Bills." Illinois does not have such a law.

The fate of waste designated for recycling is dependent on the commercial market for the particular commodity. Recycling facilities expect a profit after expenses for collection, sorting, processing and shipment to the locale for remanufacture or alternate uses. More than one-third, and in some cases approaching one-half of such waste in the U.S., has been sold and shipped to China. In 2018 and 2019, the recycling industry in North America had a major setback when China changed its standards for materials that it would accept, thus making it more difficult and more expensive to ship waste to China for recycling. The ripple effect through the United States led to some cities

changing their recycling programs, and in some cases eliminating recycling programs altogether. Materials formerly recycled were now sent to landfills. Advanced Disposal, the firm that has the Wilmette contract, is a nationwide firm with some international contracts. It is possible that significant changes in the Village's recycling program might occur due to international political and market forces.

### Composting

Composting is a special type of recycling that is facilitated by Wilmette ordinances and regulations. It is a practical, low-cost, home-owner activity which is also done by Wilmette's MSW contractor. Waste for composting is collected by the contractor curbside from single family residences using special totes provided upon request. Since April 1, 2019, consequent to Wilmette Ordinance, the MSW contractor also collects food waste, termed "food scraps," derived from vegetable matter and fruits, for composting, from April through November. Egg shells are accepted but the following are excluded: eggs, dairy, meat, fish, and bones. Wilmette ordinances specifically permit outdoor composting on residential property, but compliance with some restrictions regarding size, process, and other parameters are required.

Small scale, indoor composting, which is odorless when using equipment that is sold in the commercial marketplace, is an additional choice for home owners. One kitchen-countertop device, sold for about \$275, is advertised to convert about a one-gallon bucketful of kitchen waste, including meat, fish, eggs, egg-shells, bones, vegetable and fruit waste, into humus, in about 3 hours using an odorless, quiet process, using about 1.5 kwh of electricity (about 18-cents' worth). The resulting humus is suggested as a good base for growing one's own vegetables.

## **9.3 Goals**

**9.3.1** Reduce the generation of all types of waste.

**9.3.2** Attract and support community groups that focus on the protection of the environment through better solid waste management.

**9.3.3** Make the Village of Wilmette's approach to waste-reduction and recycling a model for both residents and businesses.

## **9.4 Recommendations**

**9.4.1** Reduce the generation of all types of waste in the long term by:

Forming, supporting, and maintaining a close, working relationship with all of the educational districts with which Wilmette residents interact; and then, together, develop an age-appropriate program for putting environmental and waste-reduction elements into the curriculum on a daily basis. This curriculum should begin with preschoolers and continue throughout high-school because education is the best way to raise a generation whose knowledge and sensitivity to these issues will be put into practice.

Developing and implementing a well-planned and sustained community education program focused on: Reduce, Reuse and Recycle.

**9.4.2** Develop a plan to further reduce waste in the short term by policy decisions and actions focusing on waste minimization and the ability to recycle at the end of the useful life. For example, as aging vehicles are replaced, consider natural gas, hybrid, or all electric models.

**9.4.3** Require the analysis and revision of all aspects of daily Village operations so that it meets the highest standards for waste reduction and sustainable material management giving a priority to reuse and recycling.

**9.4.4** Promote the Village of Wilmette's Waste and Recycling Program as a model to be followed by all residents and businesses.

**9.4.5** Advocate and promote the passage of an Illinois Legislative "Bottle Bill," to require a refundable deposit on cans, and glass or plastic bottles for soft drinks, beer and other beverages to encourage recycling and to prevent them from becoming waste.

**9.4.6** Join or Create a Large Item Swap or Transfer website, to facilitate further use of unwanted pianos, bookcases, appliances, etc., that are no longer wanted but still have a useful life, thereby saving the Village money by keeping them out of landfills.

**9.4.7** Develop and implement a plan to assist residents who have limited mobility and resources, to comply with regulations regarding disposal of materials which are prohibited from inclusion in solid waste and which should be recycled.

## **9.5 References**

Go Green Wilmette [www.gogreenwilmette.org/recycling-guide/](http://www.gogreenwilmette.org/recycling-guide/)

Solid Waste Agency of Northern Cook County <http://www.swancc.org>

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The Illinois Solid Waste Management Act ([415 ILCS 20/1 et seq.](#))

The Illinois Solid Waste Planning & Recycling Act ([415 ILCS 15/1 et seq.](#))

The Illinois Environmental Protection Act ([415 ILCS 5/1 et seq.](#))

Village of Wilmette, Residents Handbook <http://www.wilmette.com/residentshandbook>

Wilmette Department of Engineering and Public Works, Refuse and Recycling  
<https://www.wilmette.com/engineering-public-works/refuse-recycling-and-yard-waste-program/solid-waste-faqs/>

Yale Environment 360 <http://www.e360.yale.edu>

## **CHAPTER 10 – WATER**

### **10.1 Introduction**

The Village of Wilmette sits on the shores of Lake Michigan. Lake Michigan is a highly valued resource which provides fresh water, recreation, transportation, fish and wildlife habitat, a place to live and work, and esthetic value to the Village's residents. The Great Lakes basin provide benefits to an estimated 35 million people.

The Village of Wilmette operates its own drinking water plant which has a capacity to provide 44 million gallons per day (MGD) of drinking water. The current water plant was built in 1933 and has had several expansions and reliability improvements over the years. Along with serving the needs of all the Village residents, excess capacity provides drinking water to neighboring municipalities. Today it serves approximately 105,000 people and businesses. The water distribution system also plays an important role in fire protection throughout the Village.

The land within the Village of Wilmette is highly developed which creates large amounts of stormwater during heavy rainfall events. Unfortunately, the Village's stormwater collection system does not have adequate capacity to handle larger rainfall events resulting in flooding situations especially in certain areas west of Ridge Road. Recent reports regarding climate change suggest that the frequency and intensity of severe rainfall events are likely to increase.

### **10.2 Existing Conditions**

#### Lake Michigan

The Lake Michigan Lakewide Management Plan (LaMP) is a plan for restoring and protecting the Lake Michigan ecosystem. The LaMP is coordinated by the Lake Michigan Partnership which is led by the U.S. EPA with participation from federal, state, tribal, and local governments with input from non-governmental organizations (NGOs) and the public. The last LaMP was issued in 2008, and the next LaMP is scheduled to be issued in 2019. Overall, Lake Michigan is in "Fair" condition. The Lake is a source of safe, high-quality drinking water, and it allows for unrestricted swimming and other recreational uses. A major concern is the presence of aquatic invasive species. Lesser concerns include pollutants that prevent the unrestricted consumption of fish and wildlife, nutrients that promote algae blooms, and high water levels that promote beach erosion.

#### Drinking Water

The Village of Wilmette water plant is located on the lakefront. The plant receives its raw water from Lake Michigan and uses a mixture of chemicals, settling basins, and

filters to remove contaminants below the required regulatory levels. The Village operates and maintains a distribution system of pumps and underground pipes to deliver potable water to its end users. In addition there is a 4 million gallon standpipe and a 3 million gallon underground reservoir and pumping station which serves West Wilmette. The plant has an on-site certified laboratory to monitor the quality of water that enters the distribution system. The results of this testing indicates that the Village's water did not exceed any applicable U.S. EPA standard. Recent TV and press reports have highlighted the concern about lead in drinking water. For over 24 years the Village has had a lead corrosion control program in place to reduce the lead from older plumbing fixtures and service lines. As required by the State of Illinois, the Village conducts tri-annual lead sampling and analysis for lead in households throughout the Village. The most recent results indicate that 90% of the samples were at or below 6.4 parts per billion (ppb) versus the current standard of 15 ppb. From May 15<sup>th</sup> to September 15<sup>th</sup> the Village prohibits lawn watering during the hours of 10:00 am to 4:00 pm on weekdays to maintain adequate water pressure throughout the distribution system.

#### Stormwater

The sewer system within the Village of Wilmette is divided into two distinct zones by Ridge Road which is a natural boundary between Lake Michigan to the east and the North Branch of the Chicago River to the west. The system in East Wilmette consists of combined sewers; combined sewers receive both sanitary wastewater and stormwater. The system in West Wilmette has separate sewers for sanitary wastewater and for stormwater.

#### East Wilmette

All collected wastewater and stormwater within the East Wilmette sewer system is sent to the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) for treatment at its North Side Plant located in Skokie, Illinois via large sewer pipes known as interceptor sewers. Because this is an older sewer system, its capacity to handle stormwater from rainfall events is limited both by the capacity of the interceptor sewers and the capacity of the treatment plant.

In attempt to handle these large volumes of combined sewerage during rainfall events, the MWRDGC constructed a series of underground tunnels and reservoirs to hold the excess wastewater. This system is known as the Tunnel and Reservoir Plan (TARP). Even with TARP in operation, large rainfall events can exceed the storage capacity of TARP. Under these circumstances, the excess combined sewerage from East Wilmette flows directly into the North Shore Channel through several discharge points. This discharge of untreated sewerage is known as Combined Sewer Overflow (CSO). The Village does have a permit issued by the State of Illinois for its CSO discharge points into the North Shore Channel. This permit requires the Village to have an active

program to operate and maintain its combined sewer system to minimize the occurrence of CSOs.

Under exceptionally heavy and/or extended rainfall events, the water in the North Shore Channel rises to a level which causes the MWRDGC to open the locks which then allows the North Shore Channel to flow into Lake Michigan near Wilmette Harbor. Any time the locks are opened there is a concern with the impacts on the Wilmette water plant and with swimming in Lake Michigan.

#### West Wilmette

The sanitary sewers in West Wilmette flow in a westerly direction to MWRDGC interceptor sewers at two locations. In 2016 the Village completed construction of the West Park Storage Project; this is an underground basin which can hold up to 5.5 million gallons of sanitary wastewater to reduce sewer backups when the MWRDGC interceptor cannot accept 100% of the sanitary wastewater from Wilmette. The storm sewers in West Wilmette also flow in a westerly direction to a Pumping Station located on Lake Avenue near the eastern bank of the North Branch of the Chicago River. All stormwater is pumped directly to the River. The Village is an active participant in the North Branch Chicago River Watershed Workgroup (NBWW). The mission of the NBWW is to improve water quality in the North Branch of the Chicago River through long-term monitoring and to gain a better understanding of the stressors to the aquatic system.

When the Edens Expressway was built in the 1950's it interrupted the westerly flow of stormwater for a large part of West Wilmette toward the North Branch of the Chicago River. As development occurred in West Wilmette, storm sewers were installed to handle the stormwater from rainfall events. Unfortunately, the storm sewer system only has the capacity to handle the stormwater from small rainfall events. The Village has been studying the flooding problem in West Wilmette since 2013. Several engineering reports were completed that evaluated the condition of the storm sewer system, the extent of flooding during various rainfall events, and several alternatives to reduce the flooding of streets and basements.

In April 2018 the Village Board decided to proceed with an alternative known as neighborhood storage. This alternative includes the installation of new relief sewers in several areas of West Wilmette and three underground storage basins on property owned by the Village. This alternative is predicted to reduce by over 50% the flooding of basements during a 10-year rainfall event. This alternative is not likely to be the final solution to reduce stormwater flooding in West Wilmette. After this alternative is fully operational, follow-up studies will need to be conducted to determine if additional measures are needed to further reduce stormwater flooding.

#### Inflow and Infiltration

Because the Village's combined sewers and sanitary sewers are treated by the MWRDGC, the Village must comply with MWRDCG's Inflow/Infiltration (I/I) Control Program. This program requires the Village to minimize or eliminate extraneous flows of rain water or groundwater to the treatment plant due to defective underground sewer pipes (infiltration) or illegal connections (inflow). Excessive I/I can overload the sewer system during wet weather usually resulting in the flooding of streets and basements. The Village has developed an ongoing I/I control program that meets the requirements of the MWRDGC. The Village inspects and repairs underground sewer pipes and manholes to reduce infiltration. Also, the Village identifies illegal connections via smoke testing and dye testing to reduce inflow. Finally, the Village does not permit any new private connections to the storm sewer system in West Wilmette.

### Green Infrastructure

Green infrastructure uses plants, soils, and other elements and practices to prevent stormwater from entering the local sewer system. Without too much work or expense, homeowners can plant new trees, replace turf areas with more thirsty plants, or install rain barrels at one or more of their gutter downspouts. With more time, investment, and, potentially, professional expertise, there are several stormwater control tools available to homeowners. Paved areas can be replaced by permeable surfaces or planted beds. Rain gardens can intercept and hold stormwater before turning the yard into muck. Green roofs put either flat or pitched roofs to work. Swales can help direct stormwater to where the homeowner wants it, often to a rain garden. These methods may be used individually or in combination, depending on the needs and desires of each situation. Several of these methods have the added benefit of supporting butterflies and wildlife, as well as beautifying the Village's neighborhoods. The addition of new plants and trees will also promote carbon capture which is further described in Chapter 1, Climate. Additional discussion of green infrastructure is found in Chapter 4, Land

The Village has entered into a contract with the Center for Neighborhood Technologies (CNT) to design and administer a green infrastructure program known as RainReady Wilmette. This program will reduce the burden on local sewers by capturing stormwater at individual residential properties. Initially the program will provide partial grant funding for up to 25 single-family homes who enroll in the program and install one or more green infrastructure improvements. As of the date of this Plan, this program is over-subscribed.

### 10.3 Goals

**10.3.1** Protect and restore Lake Michigan to ensure its long-term use as a source for drinking water and to provide for unrestricted recreational uses.

**10.3.2** Provide a safe and reliable source of drinking water for all residents, businesses, and other municipal customers.

**10.3.3** Manage stormwater to reduce flooding of streets and basements and to eliminate combined sewer overflows.

## **10.4 Recommendations**

### Lake Michigan

**10.4.1** The Village should take an active role in the Lake Michigan Partnership to protect and restore this valuable resource.

### Drinking Water

**10.4.2** The Village should continue its active role in the Partnership for Safe Water to improve the quality of its drinking water beyond the current regulatory requirements.

**10.4.3** The Village should continue is chemical addition and pH control to prevent any lead in pipes and plumbing fixtures from entering the tap water.

**10.4.4** The Village should continue its ongoing program to improve the reliability of its water treatment plant and distribution system.

**10.4.5** The Village should continue its ongoing program to reduce water consumption for both commercial and residential users.

### Stormwater

**10.4.6** The Village should proceed with its chosen alternative of neighborhood stormwater storage to reduce the flooding of streets and basements in West Wilmette. After this alternative is constructed and operational, a follow-up evaluation should be conducted to determine if additional measures are necessary to manage stormwater from larger rainfall events.

**10.4.7** The Village should continue its Inflow/Infiltration (I/I) Control Program to reduce the volume of groundwater and rain water entering its sewer system.

**10.4.8** The Village should actively promote the use of Green Infrastructure at the residential level via the rollout of its RainReady Wilmette program and expand this program into the future.

### Overall

The recommendations in Chapter 3, Energy, to evaluate and reduce energy consumption at municipal facilities are applicable to all drinking water, stormwater, and wastewater pumping stations.

### **10.5 References**

U.S. EPA, Great Lakes National Program Office, Lake Michigan Lakewide Management Plan (LaMP)

Village of Wilmette Water Management Department, Web Site

Village of Wilmette, Stormwater Frequently Asked Questions

Wilmette Village Board, PowerPoint Presentation, 9-19-16

Wilmette Village Board, Request for Board Action, 1-22-19

Web Site: [www.wilmettestormwater.com/document-archive](http://www.wilmettestormwater.com/document-archive)

Memo: Inflow/Infiltration Control Program, 5-23-17

**APPENDIX A**

**Greenest Region Compact Spreadsheet for Wilmette**

**[Insert Completed Excel Spreadsheet Here]**

**APPENDIX B**

**List of Acronyms**

CoC	Chamber of Commerce
C&D	Construction & Demolition Debris
CNT	Center for Neighborhood Technologies
CSO	Combined Sewer Overflow
EEC	Village of Wilmette Environment and Energy Commission
EV	Electric Vehicles
GCoM	Global Covenant of Mayors for Climate and Energy
GGW	Go Green Wilmette
GHC	Greenhouse Gas
GPC	Global Protocol for Community-Scale Greenhouse Gas Emissions Inventory
GRC	Greenest Region Compact
IDA	International Dark Sky Association
I/I	Inflow and Infiltration (water entering a sewer system)
LaMP	Lakewide Management Plan
LED	Light Emitting Diode (normally refers to a type of light bulb)
LEED	Leadership in Energy and Environmental Design
MGD	Millions of Gallons per Day
MSW	Municipal Solid Waste
MWRDGC	Metropolitan Water Reclamation District of Greater Chicago

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NBWW	North Branch Chicago River Watershed Workgroup
ppb	Parts per billion
pH	A chemical test for acidity
SWANCC	Solid Waste Agency of Northern Cook County
TARP	Tunnel and Reservoir Plan
VOCs	Volatile Organic Compounds (a group of chemicals causing air pollution)
WPD	Wilmette Park District

## **APPENDIX C**

### **Additional Discussion Items**

#### **Chapter 1 Possible Additions**

##### **FINANCE**

###### **Introduction:**

Financing. Financing is essential to climate change mitigation and resilience, including partnerships among municipalities, public-private sectors, the state and federal governments, and creative financing to pool resources and develop best solutions.

###### **Goal:**

Align municipal funds with Village climate and environmental goals.

###### **Recommendations:**

Set a climate-friendly municipal investment strategy.  
Plan for short- and long-term funds for actions pursuant to this Plan.

##### **PUBLIC HEALTH AND SAFETY**

###### **Introduction:**

Public health and safety. Climate changes impact and will increasingly impact human safety, public health, infrastructure, agriculture, water quality and quantity, and natural ecosystems. Protecting public health and safety requires achievement of ambitious climate change mitigation and resilience goals. Extreme weather, air quality, water quality, food, and increases in insects and pests that transmit diseases threaten the health and well-being of local and worldwide communities.

###### **Goal:**

Minimize climate change impacts on public health and safety.

###### **Recommendations:**

Consider safety alongside emissions data.

Obtain medical information regarding rates of asthma and warming-related diseases.

Warn the public about the problems.

## **Chapter 9 Possible Additions**

### **NUCLEAR WASTE**

Radioactive waste is managed by storage. High level waste comes from nuclear reactors, mainly used for generation of electric power. There are more nuclear reactors in Illinois, than in any other state. In Illinois, in the year 2019, there are 11 currently operating reactors. All are within a total of six power generating stations; all are owned by Exelon. There are two decommissioned nuclear power plants with SFR (Spent Fuel Rods) stored on-site. There are about 11,500 tons of high-level nuclear waste temporarily stored on-site at Illinois nuclear power generating stations (as of year 2017), awaiting yet-to-be-designated sites for permanent storage. Low level radioactive waste, mainly from hospitals, academic and research centers, is either stored on-site until the radioactivity decays to negligible levels - whereupon it may be handled as non-hazardous MSW; or, it may be transported in special, NRC approved containers, to one of eight NRC designated sites in the nation, for long-term storage, of which the closest one is in Sheffield, IL - about 140 miles from Wilmette.

Wilmette does not have a nuclear powered electricity generating plant. The LaSalle County nuclear powered plant has high-level radioactive waste stored on site; it is about 100 miles away from Wilmette. The decommissioned Zion plant in Lake County is about 40 miles away: it, too, has SFR in storage, on site.

### **LIQUID WASTE**

The water from toilets, showers, sinks and other residential and commercial business drains, goes into Wilmette's sanitary sewer system which is combined with storm water waste (CSO), in the part of Wilmette that is east of Ridge Road. The MWRDGC (Metropolitan Water Reclamation District of Greater Chicago) manages that liquid waste for Wilmette. This topic is discussed in Chapter 10.

To reduce liquid waste, it is recommended that residents conserve potable water and that rain barrels be used to capture storm water for later use, thus sparing the sewer system of some of that burden. There are no financial incentives for residents to take an active role to divert storm water from sewers. Sewer use is billed as a fraction of water supplied and used. Paved property directs more water to sewers than does unpaved, or porous surface, yet no credit is given for the last two.

## **GASEOUS WASTE**

Infrared radiation coming from the sun to the earth, plus that reflected outward from the earth, is absorbed by certain gases and the heat thereof is transferred to other gases in the atmosphere, with a net effect of warming. This is the so-called, "greenhouse effect". Those "greenhouse gases" (GHG) are: water vapor, carbon dioxide, methane, nitrous oxide, ozone, hydrochlorofluorocarbons and chlorofluorocarbons. The first five are natural products that occur apart from human activities, but all also are waste products that result from human activities.

The concentration of **carbon dioxide** in the atmosphere is close to  $4 \times 10^{-2}$  volume% (400ppmv, 400 parts per million volume). The increasing concentration of carbon dioxide in the atmosphere over the past one-hundred years, has been attributed to human-driven activities. In Illinois, the generation of electricity using coal and oil fuels, is the largest, single contributor to carbon dioxide release into the atmosphere. Next, are electricity generators that operate using natural gas. Motor vehicles with gasoline or diesel engines are also important contributors to carbon dioxide release; but, only estimates of the latter, not actual measurements, can be made. Trees and other chlorophyll containing plants provide natural recycling of carbon dioxide to oxygen. Reducing the production of carbon dioxide hinges upon reducing use of gasoline and diesel engines; and, reducing demand for, and hence generation of, electricity from fossil-fuel run generators and more generation from solar, wind, hydroelectric and nuclear powered sources.

**Methane** is present in only trace amounts (1.7ppmv) in the atmosphere. It is formed naturally by anaerobic microbial action in the rumen of animals, decomposition of animal waste, wetlands, and landfill organic matter. Estimates are that the greater proportion of methane is coming from bacterial action, rather than man-made events - but the latter is increasing at a more rapid rate. Methane is the largest component of natural gas which is used in industry as well as in residential settings for heat, cooking and air-conditioning. Leaks from the extensive transmission and distribution system for natural gas, are reported to be the main source of increasing methane in the atmosphere. Methane has a much greater molecular effect on infra-red, heat, absorption than does carbon dioxide, resulting in a greater "greenhouse" effect.

**Chlorofluorocarbons** and **hydrochlorofluorocarbons** have been widely used as refrigerants (e.g., Freon) and propellants in spray cans. Because of their "super" greenhouse effect, they have been largely phased out of production in accordance with international agreement, per the *Montreal Protocol*. Near elimination of these compounds from commerce, relieves Wilmette of planning for their management in the future.

**Nitrous oxide**, is said to have a powerful effect as a greenhouse gas: about 300 times that of carbon dioxide; but, it is present in the atmosphere in very small amounts, about one-thousand times less than carbon dioxide. Based on the foregoing statements, then the net greenhouse effect of nitrous oxide would be about 0.03 times that of carbon dioxide. Even so, it has garnered considerable attention. Nitrous oxide in the atmosphere is mainly the product of microbial action on nitrogen-containing substances in the soil. The wide spread use of nitrogen-containing chemical fertilizers in commercial agriculture, is considered to be an anthropogenic source of nitrous oxide in the atmosphere. In Illinois, it is a reflection of the agricultural economy; although no figures are provided, since agriculture is not a major business in The Village of Wilmette, it can be assumed that nitrous oxide is not a significant factor here.

**Ozone** is a highly reactive molecule consisting of three-oxygen atoms bound together; it is found in very low concentrations in the air (see later); whereas the oxygen which is about 20% of the air out of doors, consists of two-oxygen atoms bound together. *Ozone* present in the stratosphere, the highest level of the earth's atmosphere, is of natural origin and serves an important function by absorbing ultraviolet-B coming from the sun, thereby protecting humans from the risk of skin cancer attributed to UV-B radiation. However, *ozone* in the troposphere, the level closest to the ground, is mainly anthropogenic: the product of automobile exhaust, etc. It is causal factor of smog. Inhaling ozone has an adverse effect on the lungs and especially the health of persons with asthma, chronic lung disease (COPD) and chronic bronchitis. Pollutants in the exhaust of motor vehicles are reduced by required catalytic converters in the exhaust systems. Using more efficient engines, the gradual shift of sales toward hybrid and all electric motor vehicles, the Federal law requiring progressively increasing standards for miles-per-gallon of the automobile fleet of each manufacturer, are all major factors in reducing the potential atmospheric pollution by waste gases. The promotion of less driving and more bicycling and walking as public policy and public-service-messages on television, are gradual but effective means of reducing these noxious waste gases.

SWANCC has not advanced a plan to control the emissions of nitrous oxide, nor methane or ozone.

### **WASTED ENERGY**

Minimizing wasted-energy requires:

- (1) Behavioral modifications for the entire population, predicated upon education, so that awareness of wasting energy and appropriate corrective actions become automatic for all individuals; and
- (2) Selection of devices and fuels which function with progressively higher efficiency.

Wasted energy, commonly occurs from useless turned-on lights or running motors; it also is the consequence of heating or cooling of a supposedly enclosed-space, either

with an inappropriately set thermostat goal-point; or else the enclosed space is inadvertently open to an opposing temperature environment. Wasted energy results in greater use, which in turn causes more waste products to be released into the atmosphere or accumulate as solid waste.

Outdoor lights, illuminated during daylight hours, contribute nothing to vision but consume and therefore waste electric-power. This occurs in business and residential settings, sometimes as an oversight when turn-on / turn-off cycles are done by a person; or, deliberately, as a policy decision that changing to an automated system which responds to the level of natural illumination in the area, would cost more than would be the savings, during a reasonable time frame, from reduced use of electric power.

Indoor lighting in some locations is controlled by motion detectors plus light sensors; but even without quantitative data, random observations suggest that such purposeful lighting control occurs in only a small fraction of all room lighting. In Wilmette, ComEd (Commonwealth Edison), an electricity supplier, in 2019 has offered to perform Energy Efficiency Assessments and recommend changes that would be cost-effective for the individual and indirectly for the company. For example, replacing incandescent light bulbs with LED bulbs, which use about one-sixth, or less, power for the same illumination, and have about 10 times the lifespan, has the potential to avoid considerable wasted energy and thus save money for the user. Although CFL light-bulbs use less power for the same degree of illumination than do incandescent bulbs, replacing CFL, at their end of lifespan, with LED saves even more power, and wastes less energy as heat, and results in lessened generation of waste gases.

Some motor vehicles manufactured in 2018 and 2019 automatically turn off the gasoline engine, in order to not waste fuel while stopped at traffic lights and elsewhere; they then restart instantly when foot-pressure is removed from the brake pedal and applied to the accelerator. Most motor vehicles on the road today, do not have this feature. Electric vehicles have this feature and hybrids may have it. It is commonplace to see delivery vehicles stand idle with the gasoline or diesel fueled motor running while the driver is delivering a parcels or doing some other task, away from their vehicle. Sometimes, drivers lock their car with the motor and air conditioning unit operating in the summer, or heater in the winter, to keep the interior comfortable while they are out of the vehicle on an errand. Considering the number of vehicles registered in Wilmette including those owned by The Village of Wilmette, plus those here for work or shopping, the practices just described likely cause considerable waste of fuel and energy. If all vehicles henceforth purchased by The Village and by residents or businesses, were to have a "motor-off-when-stopped" feature, and if an education initiative were implemented, we might have a notable reduction in wasted energy and a savings of money as well.

When the brakes are applied in a gasoline or diesel powered vehicle the energy of motion is converted to heat energy and is dissipated into the environment i.e., wasted. Slowing or stopping an all-electric or hybrid gasoline-electric motor vehicle, converts the energy of motion into electrical energy, which is stored in the battery for later use to move the vehicle. The increasing popularity of the purchase and use of hybrid motor vehicles and all-electric vehicles, reduces waste by saving energy (i.e., recycling, so to speak, the energy of motion) and reducing the source and quantity of gaseous pollutants in the atmosphere.

Transmission of electric power over wires at 230 volts, rather than 115 volts AC, can be accomplished with a smaller diameter copper wire to deliver the same power. Greater efficiency equals less waste. The standard for residential electric power in Wilmette and in most of the U.S.A., is 115 volts AC for most uses. Some high power consuming appliances, e.g., electric dryers, window air-conditioners, electric ovens and cooking ranges, use 230 VAC. In Europe, 230 volts AC is the most common. If future Wilmette residential and commercial construction were to use only 230 volts, there would be a savings in copper wire for installation, i.e., avoidance of wasted copper wire, and indirectly, less wasted energy.

Decorative use of outdoor, upward-directed floodlights and spotlights, at night, pollute the dark night sky and may be considered to be a waste of electric power. By increasing the use and demand for electric power, the practice causes increased generation of electricity and therefore the release of more GHG from natural gas and coal fired generating plants.

Comparing light-output (Lumens) of Incandescent, CFL and LED bulbs.

<https://www.viribright.com/lumen-output-comparing-led-vs-cfl-vs-incandescent-wattage/>

## **OTHER**

**Dumping** is now illegal; previously, public lands, lakes, rivers and the oceans were used to dispose of waste. There are still signs of dumping by private parties along our highways as well as on public and private lands. Wilmette sometimes dumps liquid waste, i.e., unmodified sewage mixed with storm-water (CSO), directly into the North Shore Channel. This is explained in Chapter 10.

**Exporting** waste to Asian and some other countries is still practiced in some U.S. cities, as a solution to the problem of ultimate disposition; it is not done by Wilmette.

**Incineration** was an attractive solution for disposal of waste, especially during the years 1980-1996, when it was considered as a means of converting waste into energy. By the early 1990s, in the United States, more than 15 percent of all MSW was incinerated. The majority of non-hazardous waste incinerators, which were recovering energy by that time, had installed pollution control equipment. However, newly recognized threats

posed by mercury and dioxin emissions, led the EPA to enact the Maximum Achievable Control Technology (MACT) regulations in the 1990s. As a result, most existing facilities had to be retrofitted with advanced, air pollution control systems, at great expense; or else, shut down. In the belief (later recognized to be mistaken) that landfill space was close to exhaustion, Illinois enacted laws that permitted and encouraged construction and operation of incinerators with energy recovery capability. Unexpected consequences of that law were calamitous. Too many incinerators were built for the waste supply. Illinois was called the incinerator for the nation. Financial failure and concern about atmospheric pollution and hazardous residues of incineration, eventually led to closure of most incineration plants. Disposition of medical waste and cremation remained as users of incineration furnaces. Incineration is no longer significant for MSW from Wilmette. This report did not identify an incineration plant for MSW from Wilmette.

### **RECOMMENDATIONS**

8. Authorize the creation of a group of Resident-Volunteers to become Observers and Reporters of the locations of wasted-energy in the form of outdoor lights turned on during daylight hours, especially street lights and business buildings; and, Village-owned and commercial vehicles standing still, idling with their motors running, so that appropriate remediation steps may be taken.

9. Study the potential benefits and other consequences of expanding use and perhaps requiring, 230 volt AC power for new construction in Village properties and possibly elsewhere in Wilmette, as a means of reducing waste and cost.

### **DEFINITIONS**

**Energy** is the enabler for force or power to accomplish work. It occurs in several forms, including motion, electrical, heat, chemical, and electromagnetic radiation; it may be changed among these types, given a suitable interface-device. Only some forms of energy may be stored for future use. Neither energy nor mass may be created or destroyed, but they may be changed into one another, according to the equation:

$E = mc^2$  as first proposed by Professor Albert Einstein, wherein **E** is energy; **m** is Mass; and **c** is the speed of light.

**Green**, in the context of this endeavor, means that the subject does not have a destructive effect on the environment.

**Greenhouse gas** (GHG), means those gaseous substances in the atmosphere, either natural or consequent to human activities, that absorb infra-red radiation and thereby retain some of the heat of this planet that otherwise would radiate into space.

**Mass** is the amount of matter in a substance; it defines the amount of force need to impart motion and acceleration. Although mass is measured in kilograms, it is not

synonymous with weight. Waste material, has the quality, mass; as such, it cannot be destroyed.

**Pollution** means the contamination of healthful land, water or air, with noxious substances.

**Recycling** means that used material or the remaining unused material or energy from a project, is captured and salvaged to be used for another purpose or project or, becomes the source-material for manufacturing another product of the same or different type.

**Renewable energy.** [When energy is used, it is not literally renewable: the term means that a source of energy is not measurably depleted by the energy extracted or acquired from that source and therefore the latter can continue to function as a source, indefinitely]. The term, renewable energy, is applied to five types of energy sources: solar, wind, hydroelectric, geothermal and replenishable biomass such as wood – the latter, only if given sufficient time, which may be decades, e.g., reforestration. Nuclear powered electric generation is accepted by some experts as "renewable," but is rejected by IRENA as a renewable energy source, despite the performance of breeder-reactors, because of the belief that the amount of uranium used in reactors, is finite – a premise that is challenged by some other experts.

**Sustainability**, in this context, means that the acquisition and utilization of substances or energy from a given source does not materially diminish the amount that will be available for future acquisitions.

**Waste** is that *remainder* of a substance, product (or, energy) that has been acquired for a particular purpose but which was not utilized for the intended, primary purpose and is discarded; **Waste** is also the residue after a product has been used and either spontaneously disassembles (“wear and tear”) or, is deliberately or unintentionally demolished.

## **ABBREVIATIONS & ACRONYMS**

C&D . . . . .	Construction and Demolition debris
CFL	Circular Fluorescent Light
COPD	Chronic Obstructive Lung Disease
CSO	Combined Sewer Overflow
ILCS	Illinois Compiled Statutes
ILEPA . . . . .	Illinois Environmental Protection Agency
IPA . . . . .	Illinois Power Agency
IRA . . . . .	Illinois Recycling Association
IRENA . . . . .	International Renewable Energy Agency
LED	Light Emitting Diode

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MACT	Maximum Achievable Control Technology
MSW	Metropolitan Solid Waste
MWRD	Metropolitan Water Reclamation District
MWRDGC	Metropolitan Water Reclamation District of Greater Chicago
NEI	Nuclear Energy Institute.
NRC	Nuclear Regulatory Commission.
REC	Renewable Energy Certificate; the bearer owns one Megawatt Hour of electricity generated from a renewable energy source.
SFR	Spent Fuel Rods
SWANCC	Solid Waste Agency of Northern Cook County
U.S.EPA	United States Environmental Protection Agency

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### Stakeholders

Go Green Wilmette  
League of Women Voters