



ENVIRONMENTAL CONCERNS COMMISSION

MEETING AGENDA

Date: July 29, 2024
Time: 7:00 p.m.
Location: Training Room - Fire Station 2
5420 Main Street

- I. Call To Order
 - II. Roll Call
 - III. Approval of June 24, 2024 Meeting Minutes
 - IV. Public Comments – General Topics or Issues NOT on Tonight’s Agenda
 - V. New Business
-

1. Guiding DG Sustainability - Existing Conditions Memorandum

Action: Discussion
Requested:
Description: An overview of the existing condition memorandum that was presented to Village Council on July 16, 2024 will be presented. The presentation and discussion of the existing conditions memorandum will focus on the key takeaways, issues and opportunities, and feedback provided by Village Council. A copy of the existing conditions memorandum is included in the agenda packet.

2. Next Step - Development of Outline for Environmental Sustainability Plan

Action: Discussion
Requested:
Description: The next step in the planning process for Guiding DG Sustainability is to draft an outline for the overall environmental sustainability plan. Staff requests that the commission discuss preferences for information and process to efficiently draft an outline at the August 26, 2024 meeting.

- VI. Old Business
 - VII. Communications
 - VIII. Adjourn
-

This is a tentative regular meeting agenda that is subject to change.

**Village of Downers Grove
Environmental Concerns Commission**

Village Hall
801 Burlington Avenue
June 24, 2024
Meeting Minutes

Chair Pelloso called the meeting to order at 7:03 pm and asked for a roll call.

Commissioner	Present	Absent
M. Bocker		X
P. Bolton	X	
L. Dantoft		X
L. Donnelly	X	
K. Lerner	X	
L. Pelloso	X	
J. Watson		X
Also present: Jason Michnick and Jay Womack		

Chair Pelloso declared a quorum present.

A motion to approve the minutes from the March 6, 2024 meeting was made by K. Lerner. Seconded by L. Donnelly. Motion was carried unanimously by a voice vote.

Public Comment - Items not pertaining to the agenda

No comments were made by the public during this portion of the meeting.

Guiding DG Sustainability - Overview of Village Council Workshop

A workshop was held with Village Council on May 21, 2024 to discuss the scope of the Environmental Sustainability Plan (ESP). A modified version of the presentation that was presented to Council was shared with the commission. This presentation included the original

slides with supplemental information about the discussion and feedback that Council provided at those points in the workshop.

Prior to the beginning of the presentation, J. Michnick informed the commission that Delta Institute, the sub-consultant that was introduced to them in March was no longer working on the Guiding DG project. He introduced Jay Womack from GZA, the new project lead that will be working on the environmental sustainability plan (ESP) moving forward. Mr. Womack introduced himself to the commission and provided some background about GZA. Mr. Womack is an ecologist and landscape architect that has worked with both public organizations and private businesses in the past. He stated that his team is working hard to make sure that the sustainability portion of the Guiding DG project does not fall behind the other plans.

A summary of the presentation and discussion that took place with the ECC is below and has been organized around the different sections of the presentation.

Goals of Workshop and Process Overview

The purpose of the workshop with the Village Council was to develop some general guiding principles that could narrow that scope of the ESP and provide the ECC with direction. The commission was reminded that the Village Council acts as a steering committee for the entire Guiding DG process, providing general direction to the various commissions charged with drafting the four plans. This initial workshop was intended to narrow the scope of the content that would ultimately be included in the ESP.

A common best practice in local government sustainability planning is to incorporate goals and objectives into strategic and financial planning, similar to the Village's current Long-Range Planning (LRP) process. Using this familiar process could be a useful tool or comparison, rather than creating an entirely new process. Additionally, there is already a working definition of environmental stewardship in the LRP strategic goals that can be used as a starting point.

The commission did not have any comments or questions during this section of the presentation.

Staff Update and Observations

J. Michnick updated the commission on the first 150 days of his tenure as Environmental Sustainability Coordinator. He noted that he has observed several active sustainability efforts in the community and Village operations that can be built on through the ESP, though it can be difficult to identify these efforts unless you expressly look for them. He also noted that he has made an effort to develop working relationships with staff in the Village and stakeholders in the community, as well as lead supplemental community outreach efforts to solicit input on Guiding DG plans. Multiple presentations and workshops have been held with students to ensure younger residents have an opportunity to participate. J. Michnick also stated that he has been

investigating external funding opportunities that are available through federal legislation such as the Inflation Reduction Act and Infrastructure Investment and Jobs Act.

The commission asked if there is a written summary of the funding opportunities that have been investigated. J. Michnick stated that he has not kept a single document with a summary of the funding opportunities, but did state that applications have been submitted for the Climate Pollution Reduction Grant and Infrastructure Investment Jobs Act programs. He also noted that the Investment Tax Credits through the Inflation Reduction Act seem to be the most open and guaranteed source of funding support, especially for renewable energy and energy efficiency projects.

The commission also asked if it would be possible to review copies of the workshop documents and questionnaires that were collected during public engagement events. J. Michnick stated that he would have to ask the project's lead consultant as they have collected all of those documents.

Greenest Regions Compact Overview

The purpose of the Greenest Region Compact (GRC) is to coordinate between communities in the Chicago metropolitan area. This type of coordination is critical in making urban regions more sustainable because government fragmentation causes a misalignment between environmental issues and jurisdictional authority of local governments. The GRC includes the original resolution, the framework, and an active community of staff and elected officials sharing information and working together.

The commission discussed whether there were active networks or conferences for professionals to share information, successes, and challenges. J. Michnick stated that the Metropolitan Mayors Caucus has an environmental committee that holds monthly meetings where guest speakers and members share information. This committee is open to members of the GRC and participants are both staff and elected officials from local governments in the region.

Climate Action Plan Overview

The GRC also adopted a regional climate action plan in 2021 that identifies specific goals and strategies for reducing greenhouse gas emissions at a regional scale. A summary graphic from the plan that discusses these targets and the various strategies that would result in emissions reductions identifies the overall importance of making buildings more energy efficient and a switch to zero emission sources of energy. The overall goal of the regional climate action plan is to reduce emissions 50% from a baseline of 2005 emission levels by 2030, and 80% by 2050. This goal is in line with international goals established through the Paris Accord, which aims to limit global warming to 1.5 degrees celsius.

The commission did not have any comments or questions during this section.

Greenhouse Gas Inventory

A preliminary inventory of emissions for the community and Village operations was also shared. The community inventory highlights a relatively even distribution of emissions from transportation, electricity, and natural gas consumption. The largest source of emissions from Village operations is from electricity at Village facilities, especially street lights and traffic lights. This information will be presented in more detail in the existing conditions memorandum.

When discussing the community greenhouse gas inventory, the commission focused on residential energy use and transportation related emissions. Multiple commissioners observed how residential redevelopment in Downers Grove has largely resulted in smaller homes being replaced by expansive homes that likely consume more energy. The Village has the authority to influence energy efficiencies in residential redevelopment through building codes, which the commission suggested could be investigated as part of the final ESP.

The commission also discussed how work from home practices have likely changed the emissions from transportation. The community inventory used data from 2019 and more people are working from home in recent years. A suggestion to look into commuter data from the Regional Transportation Authority was made. The commission asked if a community inventory using 2023 data would be provided in the existing conditions memorandum. J. Michnick stated that he has requested the necessary data from ComEd and Nicor, but they have been responsive.

The commission also discussed strategies to reduce emissions related to streetlights, including a review of whether all of the current streetlights are necessary. Fixture replacement provides an opportunity to both improve energy efficiency and reduce light pollution. The commission also asked about Village funding sources for sustainability related projects moving forward. J. Michnick stated that there is not a specific sustainability fund or source for projects, but infrastructure and capital projects could be included in the Village's five year capital plan. The commission discussed how decisions related to service delivery and operations could impact sustainability beyond individual projects.

Workshop Questions and Responses

Following the formal presentation to Council, four questions were presented to guide discussion. Below are the questions that were presented during the Council workshop with a summary of Council's discussion and the commissioners' response to Council feedback.

Question 1: What does being "sustainable" mean?

The first question that Village Council discussed in their workshop was the definition of sustainability. Council members discussed potential modifications to the LRP definition. A summary of the key concepts and terms that were mentioned in that conversation were

presented. The following draft definition based on Council's feedback was provided to the commission:

“Being environmentally sustainable refers to the continuous and conscious effort to act strategically in service delivery and policymaking in a way that preserves and enhances the natural environment for future generations.”

The commission discussed this draft definition. A suggestion was made to add language related to the consumption of resources in addition to the preservation of the natural environment. A suggestion was also made to include within the definition, or somewhere else in the ESP, a discussion of prioritizing certain principles that might override decisions to take a more sustainable option or route in the future. This might include things such as budgetary, reliability, or safety considerations.

Question 2: What is the intention or purpose of the Environmental Sustainability Plan? What would success one to two years after the plan look like?

Council's feedback on this question focused on descriptions and adjectives for the ESP. An effective ESP would be forward thinking and aspirational while also being actionable and measurable. Council also stated that they would like the ESP to be able to guide policy making and decision making in a variety of contexts. It should also be interwoven into other policies and plans such as the Comprehensive Plan and Long-Range Plans.

The commission discussed strategies and elements that could be included in the ESP to achieve the goal of the document being actionable and measurable. The work plan element of the ESP should include contingency (i.e. time and money) to account for opportunities that might not be included in a short-term work plan. The commission also suggested that the reporting requirements and cadence should be pre-defined. Goals should also be measurable, but stated in plain language. Reporting may require technical language or concepts, but it needs to be explained so the general public can understand. The commission also discussed what leadership by the Village would look like, including taking a more active role in facilitating events and community initiatives rather than relying on other organizations to do so.

Question 3: What level should the Environmental Sustainability Plan focus on (i.e. organization and community)?

The third question Council discussed was related to whether the ESP should focus on Village operations or a broader scope that includes community-level goals and strategies. Council's feedback was that the ESP should not be limited exclusively to Village operations, but there was an importance in leading by example.

The commission agreed with the importance of the Village leading by example, as well as more actively promoting the same practices for the community. The commission also discussed the timeline of the ESP and asked if the Council provided direction on whether the plan should be a

five year plan, longer, or shorter. A potential structure would be to include a long-term vision and high level goals, but have supplemental action plans that are developed and reviewed more frequently.

Question 4: How literally should the “GRC Framework” be used in drafting the Environmental Sustainability Plan?

The last question focused on whether the full GRC Framework would be taken literally when crafting the ESP. Village Council believed that the GRC Framework was too comprehensive to incorporate into the ESP and suggested refinement and prioritization of specific elements that are driven by community engagement and the existing conditions report.

The commission agreed with Council’s direction to not take the GRC Framework literally, but stated that the ESP should be easily mapped back to the GRC Framework. The commission also stated that other frameworks may exist that could be incorporated into the ESP that may not be in the GRC Framework.

Next Steps,

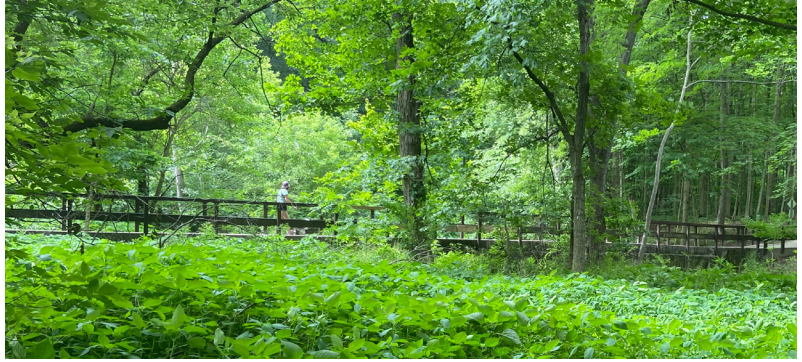
Following the overview of the workshop, J. Michnick and J. Womack discussed the next steps and a tentative work plan for the ECC. The existing conditions memorandum is targeted for presentation to Village Council and the ECC in July. Following that deliverable, the ECC would work on developing an outline of the ESP to present to Village Council for consideration. Should that be supported, the ECC would begin working on the ESP content in at least three sections. The commission asked procedural questions related to document sharing and the ability to collectively work or edit documents. J. Michnick stated that he would have to get clarification on whether the commission could share a working document or if it would be a violation of the Open Meetings Act.

Public Feedback on Presentation:

A member of the public stated that in addition to community awareness, staff awareness is also important if sustainability becomes part of the fabric of Village operations. Staff knowledge of sustainability practices would be important if decision-making on a day-to-day basis would support Village-wide goals.

Adjournment

Motion to adjourn by K. Lerner. Seconded by Bolton. The motion to adjourn was carried on a voice vote. Meeting adjourned at 8:40.




GUIDING DG
SUSTAINABILITY



EXISTING CONDITIONS MEMORANDUM

Village of Downers Grove Environmental Sustainability Plan

July 16, 2024



TABLE OF CONTENTS

Section 1		
	INTRODUCTION	4
Section 2		
	COMMUNITY OUTREACH	6
Section 3		
	CLIMATE RISK ASSESSMENT	16
Section 4		
	GREENEST REGION COMPACT FRAMEWORK ANALYSIS	28
Section 5		
	EXISTING CONDITIONS ANALYSIS	36
Section 6		
	GREENHOUSE GAS INVENTORY	58
Section 7		
	ISSUES AND OPPORTUNITIES	68

SECTION 1

INTRODUCTION

Decades ago, there was minimal talk of global warming, environmental pressures, desiccation, water shortages, extreme temperatures and weather patterns, and sea rise issues. As environmental issues have risen, so too has environmental awareness. The task at hand is to understand and listen to the way Downers Grove works and functions so that Village operations, businesses, and residents look at how they may undertake their individual and collective behaviors in response to this knowledge. By doing so, the entirety of Downers Grove can pitch in to help protect the environment and its biotic and abiotic properties; understand each of our places in the work needed to heal the earth and leave the world a better place for future residents and generations of Downers Grove.

Purpose and Use of the Existing Conditions Memorandum

The Existing Conditions Memo (ECM) is a snapshot in time that reflects the relationship between current day Downers Grove and a changing future. It is not meant to be an exhaustive list or examination, but a starting point to inform changes and recommendations for the Downers Grove community and Village operations.

The information reflected in the ECM was taken from several field reconnaissance visits, data reviews provided by the Village, and information obtained from sources such as the Illinois Environmental Protection Agency, The Morton Arboretum, and other sources. It is also a reflection of conversations had with different groups within the community. Specifically, the ECM includes:

- A review of community outreach completed to date and the key outcomes from that outreach;
- A summary of climate change projections and their associated risks on Downers Grove;
- An exploration of the Greenest Region Compact (GRC) and the environmental sustainability efforts that the Village currently undertakes or has recently completed;
- An overview of existing land uses, natural areas, and current conditions;
- A review of Downers Grove's greenhouse gas emissions;
- A summary of issues and opportunities that cut across all sections of the ECM.



Purpose of the Environmental Sustainability Plan

The Environmental Sustainability Plan (ESP) will be a guiding vision with strategies to reduce Downers Grove's impact on the local, regional, and global environment. The ESP will speak to sustainability within the whole Village, with particular emphasis on the Village's role and how the Village conducts its own operations. It will also offer ideas for collaboration between organizations within the community and beyond, recognizing that many challenges will take a collective effort. And last but not least, Village policies will be reviewed to find synergies and updates that can influence the actions of residents and businesses within the Village. In time and with a concerted effort, the ESP can address elements of the Village's interactions with the environment that are more positive and become a role model for others.

The ESP will define and prioritize opportunities to set long- and short-term goals, objectives, and benchmarks for the Village. It will focus on Public Buildings and Lands while also looking at ways residents can help support a more sustainable Downers Grove. The proposed strategies will encompass topics covered in the Greenest Region Compact (GRC), previous Greenhouse Gas (GHG) emission reviews, concurrent planning efforts, and on-going programs run by the Village.

SECTION 2

COMMUNITY OUTREACH

Guiding DG is a vision for the future of Downers Grove, and the community has provided valuable input into the development of the overall vision and multiple plans to achieve that vision. As the planning process moves along through different stages, there will be multiple opportunities for the community to share their thoughts and opinions. During this existing conditions phase, public engagement focused on gauging perceptions of different stakeholders, and what residents believe are the most important issues and opportunities to focus on. Public engagement has occurred through collective efforts across all four Guiding DG plans, as well as more focused strategies for individual plans. Below are the different avenues of engagement that have supported the findings for this section of the Guiding DG Sustainability ECM.

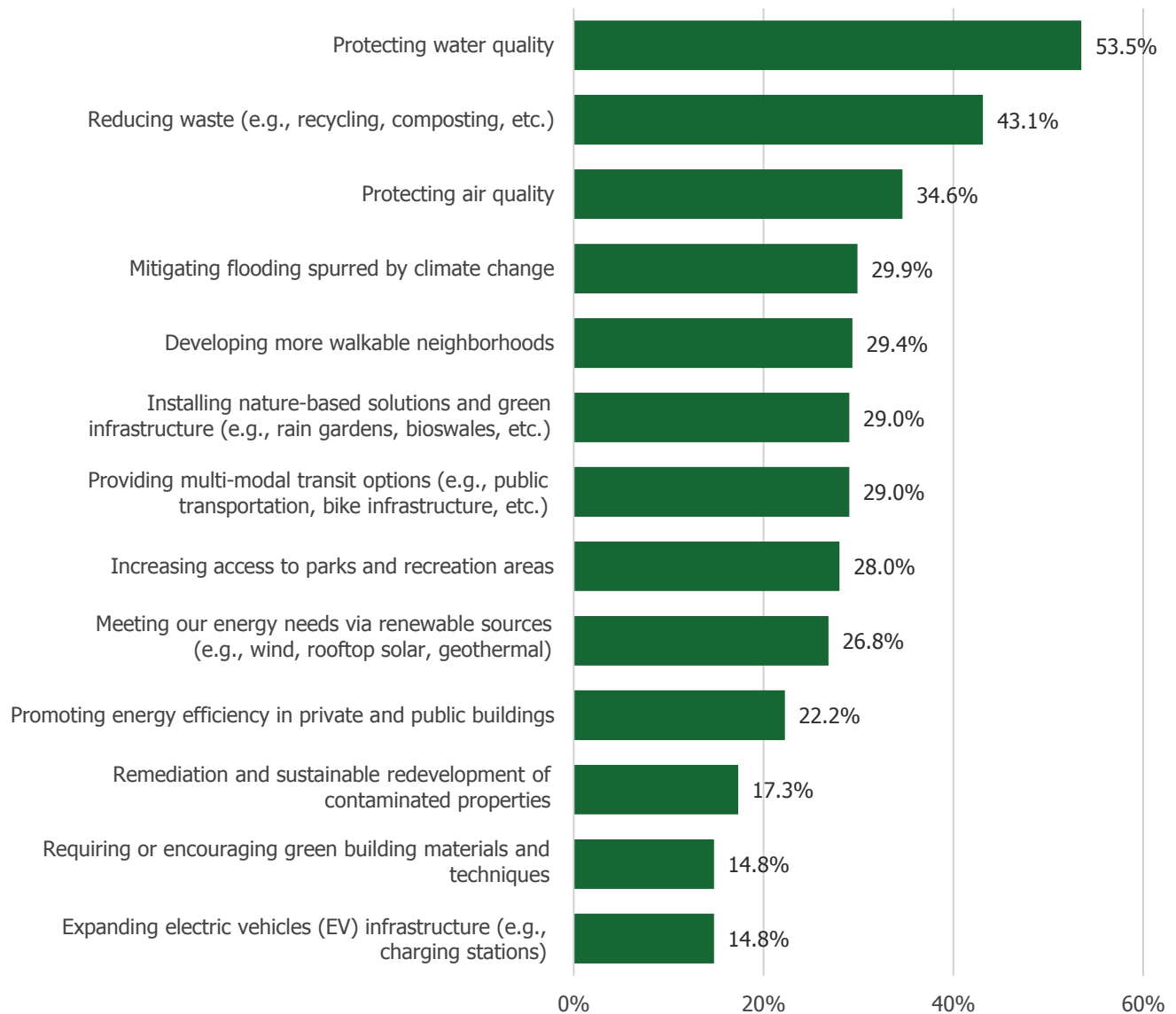
Table 1: Summary of Community Engagement

Strategy	Engagement Scope	Description
Community survey (834 responses)	All Guiding DG Plans	A voluntary online survey for residents and other community stakeholders
map.social (178 responses)	All Guiding DG Plans	An interactive online tool where respondents can identify various topic areas geographically
Community Kick-off (200+ attendees)	All Guiding DG Plans with focused exercises	An open house event where different stations solicited feedback to specific plans
Stakeholder interviews (11 interviewees)	All Guiding DG Plans - some interviews specific to ESP	Small focus groups with residents and organizations
Workshop with Downers Grove South and Downers Grove North students (100 students)	All Guiding DG Plans	A workshop with 100 high schools students to identify issues, assets, and opportunities in the community
O’Neill Middle School climate solutions summit (approx. 200 students)	ESP	Staff presented to 7th graders during the climate change unit - hearing students’ ideas for sustainability activities in the community
Lakeview Middle School Presentation (104 students)	ESP	Presented on community sustainability to sixth graders with a Q&A session and dot exercise
Greener Grove and Pierce Downer Heritage Alliance workshop (37 attendees)	ESP	A workshop with members of two community organizations to identify top sustainability issues in the community
Village Council workshop	ESP	A workshop with Village Council to discuss the scope and goals of the ESP
Environmental Concerns Commission (ECC) workshop	All Guiding DG Plans	The ECC participated in a similar project initiation workshop as Village Council and other commissions

Relevant Community Survey Results

The community survey consisted of a series of questions covering topic areas across all Guiding DG plans. While there were two specific questions related to Guiding DG Sustainability, other general questions and responses have also been identified as being relevant to this plan's ECM. For a full breakdown of the survey questions and results, refer to the Comprehensive Plan's ECM.

Question 1: What are the most important actions in creating a more sustainable community?



This question was intended to identify priority action areas and topic areas to potentially focus on in the final ESP. Respondents were asked to select three actions from a list of 14. The top three responses were protecting water quality, reducing waste, and protecting air quality. All three of these had at least one third of respondents select that action as a top priority.

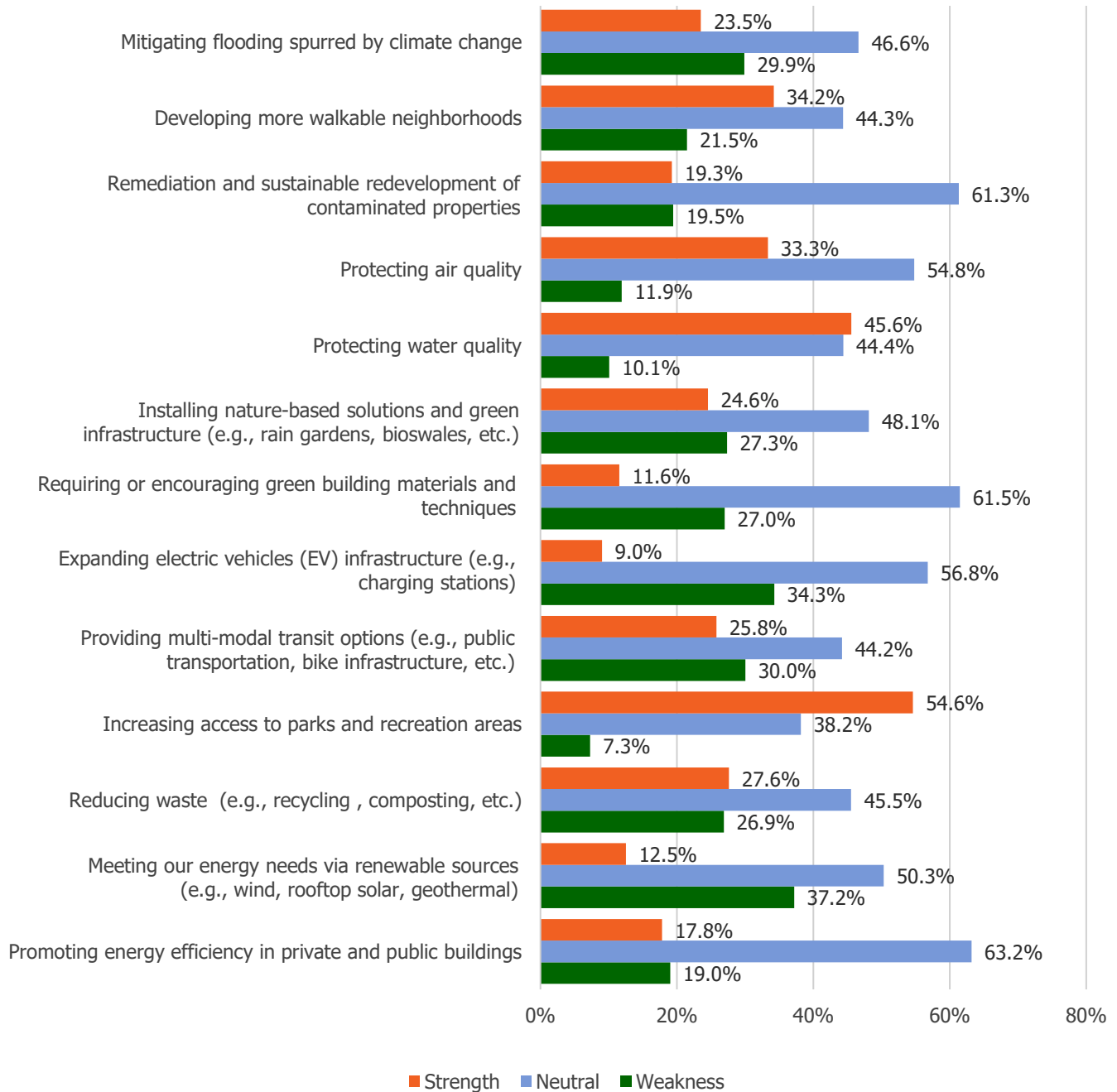
It is important to consider the Village's role in protecting air and water. Stronger regulatory frameworks at the national and state level narrow the scope and role of the Village. The Village currently relies on the Illinois Environmental Protections Agency (IEPA) to regulate point source air and water pollution. Non-point source pollution, such as exhaust from vehicles, is regulated by standards applied to manufacturers, as well as state requirements for emission testing to receive vehicle registration. While the Village can take some actions to promote behavioral changes that would limit these types of pollution, it is a broader problem than the Village cannot address on its own.

Drinking water is also regulated by the IEPA, with specific water quality standards that the Village must adhere to and test on a regular basis. The Village purchases treated drinking water from the City of Chicago via the DuPage Water Commission. Lake Michigan, the source of the community's drinking water, has multiple levels of regulatory frameworks and agencies that contribute to its protection. Wastewater effluent, which is the treated wastewater from the community that is released into natural watersheds, must also adhere to IEPA standards. Additionally, the Downers Grove Sanitary District is an external entity with its own elected body.

Where the Village does have the most influence in protecting water is through stormwater regulations and protecting the health of our watersheds. The Village created one of the region's first stormwater utilities and has stormwater regulations that exceed the baseline requirements of national, state, and county regulations. The Village also actively participates in watershed planning groups such as the DuPage River Salt Creek Workgroup, as well as minimizing the use of sodium chloride during snow operations.

The other top priority action area of reducing waste (e.g., recycling, composting, etc.) primarily relies on individual behavioral changes. However, the Village may be able to influence some behaviors through specific requirements or programs implemented through the solid waste contract. The Village currently allows composting on private property, as well as having the option for residents to dispose of compostable food waste through yard waste receptacles and bags via its solid waste provider.

Question 2: When considering existing sustainability efforts, identify if each of the following is a strength or weakness for the community today.



The intent of this question was to identify the areas that respondents felt the community was excelling or lagging behind. Notably, more responses indicated a weakness compared to a strength for eight out of 13 of the topic areas, though it should also be noted that the top response in all but two categories was neutral.

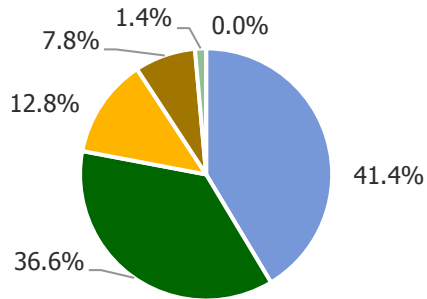
The responses with the largest perceived weaknesses were *expanding* electrical vehicle (EV) infrastructure, meeting our energy needs via renewable sources, and requiring or encouraging green building materials and techniques. Compared to other topic areas, these three areas could be seen as more contemporary sustainability efforts that rely on emerging technologies, compared to the topic areas related to water, air, and open space. The areas with the highest responses as strength were

increasing access to parks and recreation, protecting water quality, and protecting air quality.

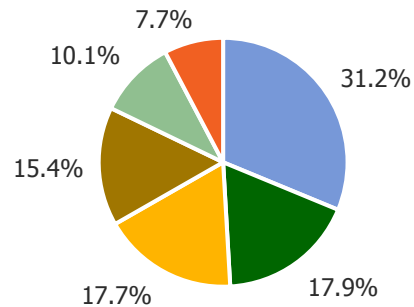
Comparing the responses between the two community survey questions highlights that two of the three most important sustainability areas (i.e., air and water quality) were also identified as current strengths of the community. Alternatively, the two areas of EV infrastructure and green building that were identified as weaknesses were also identified as the lowest priority areas by respondents. Further investigation into specific segments that responded to these questions would be helpful to identify if there are splits or alignments along demographic characteristics.

Top Strengths and Weaknesses

Of the topics discussed, which is the community's greatest strength?



Of the topics discussed, which is the community's greatest weakness?

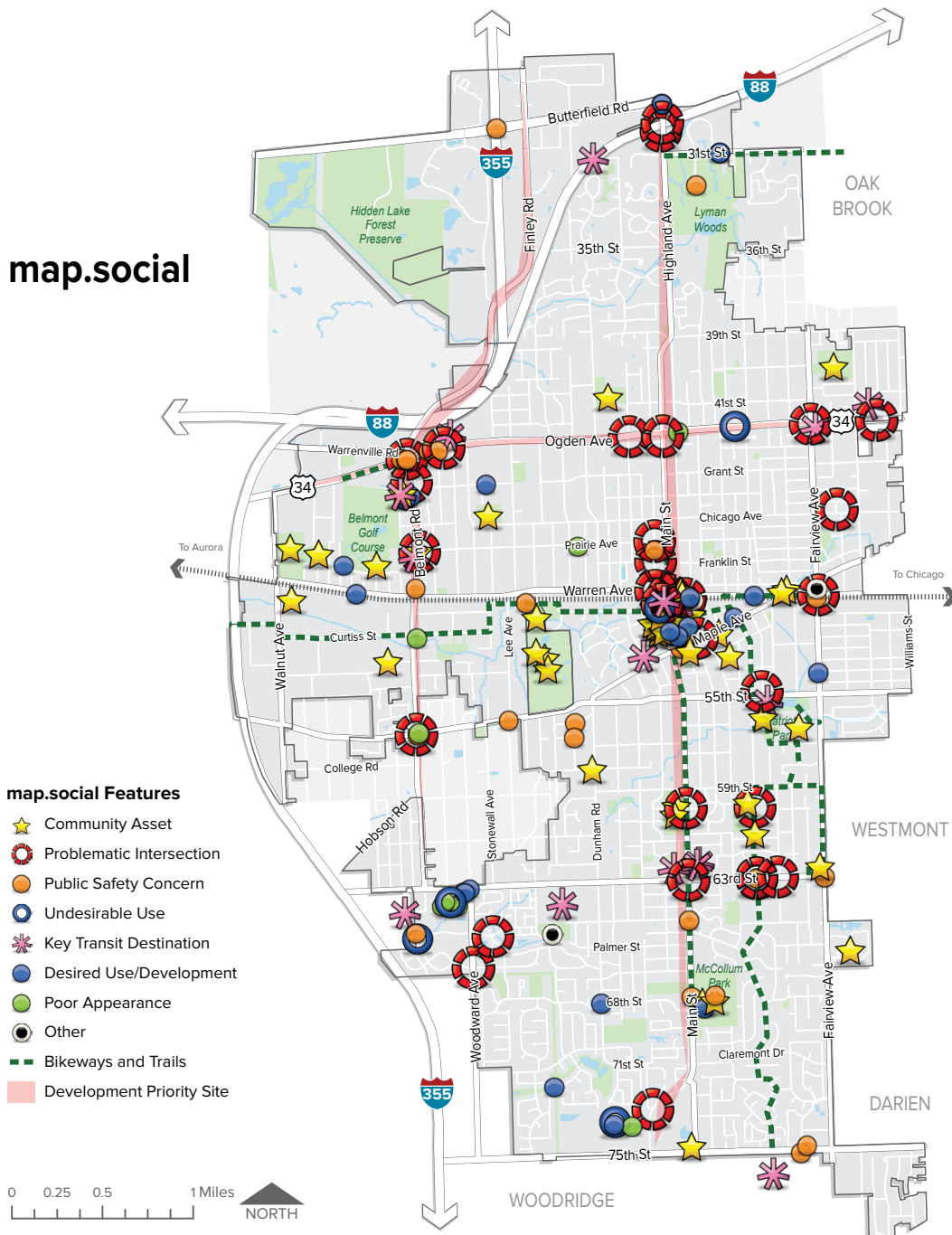


Character and Perception	41.4%	Sustainability Initiatives	31.2%
Housing and Residential	36.6%	Commercial and Industrial	17.9%
Community Facilities and Services	12.8%	Housing and Residential	17.7%
Transportation	7.8%	Transportation	15.4%
Commercial and Industrial	1.4%	Community Facilities and Services	10.1%
Sustainability Initiatives	0.0%	Character and Perception	7.7%

The community survey also included a series of questions to measure community perception about general strengths and weaknesses in the community. Although this question was not specifically asked with the intention of using the results for the ESP, the results are relevant. First, when asked to identify the community's top strength, zero respondents identified sustainability initiatives as a top strength. Additionally, when asked to identify the top weakness, sustainability initiatives was the top response.

map.social

The map.social interactive web-based mapping tool asked community members to locate certain areas of the community that would be considered assets, concerns, or places for enhancement or redevelopment. One of the most common community assets identified were parks and natural areas in the community. Maple Grove and Belmont Prairie were both identified as an asset. Several community parks across the community were also identified as community assets. This indicates that the community values open spaces whether they are intended for recreation, community programming, or to preserve nature.



Stakeholder Interviews

Two small focus groups were held with the intention of asking specific questions to inform the ESP. Specific prompt questions were used to guide the conversation with the groups, but an open dialogue was encouraged in an effort to not force specific responses. Notes between the consultant and staff were shared to identify specific themes related to strengths, weaknesses, and priorities. Below is a summary of takeaways from the stakeholder interviews.

Strengths: Community spirit and family friendly atmosphere, active park district and abundant open space, active participation in sustainability events, and leadership in stormwater management.

Weaknesses: Lack of connected bike paths, limited renewable energy options, biodiversity in urban canopy (over reliance of maple and honeysuckle), public awareness about best practices related to landscaping

Priorities: Enhance existing green space, increase biodiversity and prioritize native plants, encourage alternative lawn care and landscaping, increase public awareness

Community Kick-off Event

A community open house event was held on April 4, 2024 that allowed residents to participate in a series of stations and exercises with the intention of soliciting specific feedback across all four Guiding DG plans. The Guiding DG Sustainability station included a “wishing tree” where residents were asked to write down a wish for a more sustainable community, a question and an answer flip board that tested their knowledge of sustainability trivia, and a dot exercise. The dot exercise asked residents to place a single sticker into a category that best described their personal environmental priority for the community. This same dot exercise was also run at the Tivoli Theatre on Earth Day prior to the showing of a documentary, and with sixth graders during a presentation about community sustainability at Lakeview Middle School. Results between the general public at the Community Kick-Off and Earth Day events are separated below to identify similarities and differences in responses between a sample of young people and the general public (mostly adults).

Table 2: Dot Exercise Results

Category	General Public	Sixth Graders	Total
Land & Nature	44 (26.3%)	49 (46.7%)	93 (34.2%)
Water & Wastewater	28 (16.8%)	3 (2.9%)	31 (11.4%)
Energy & Climate	25 (15%)	21 (20%)	46 (16.9%)
Transportation	31 (18.6%)	4 (3.8%)	35 (12.9%)
Green Economy	8 (4.8%)	8 (7.6%)	16 (5.9%)
Waste & Recycling	31 (18.6%)	20 (19%)	51 (18.8%)
TOTAL	167	105	272

Table 3: Summary of High School Workshops

Workshop	Top 3 Issues/Challenges	Top 2 Assets/Strengths
DGS1	<ol style="list-style-type: none"> 1. Lack of green space downtown 2. Street parking and congestion 3. Bike connectivity and trails 	<ol style="list-style-type: none"> 1. Safety 2. Train Access
DGS2	<ol style="list-style-type: none"> 1. Lack of renewable energy 2. Lack of green space 3. Potholes 	<ol style="list-style-type: none"> 1. Schools 2. Restaurants
DGS3	<ol style="list-style-type: none"> 1. Vacancy at 4 Corners 2. Traffic and congestion 3. Downtown parking 	<ol style="list-style-type: none"> 1. Neighborhoods 2. Schools
DGN1	<ol style="list-style-type: none"> 1. Downtown congestion 2. Bike connectivity and trails 3. Lack of natural areas 	<ol style="list-style-type: none"> 1. Restaurants 2. Historic preservation
DGN2	<ol style="list-style-type: none"> 1. Lack of nature trails 2. Cleanliness of public spaces 3. Lack of natural areas 	<ol style="list-style-type: none"> 1. Schools 2. Safety

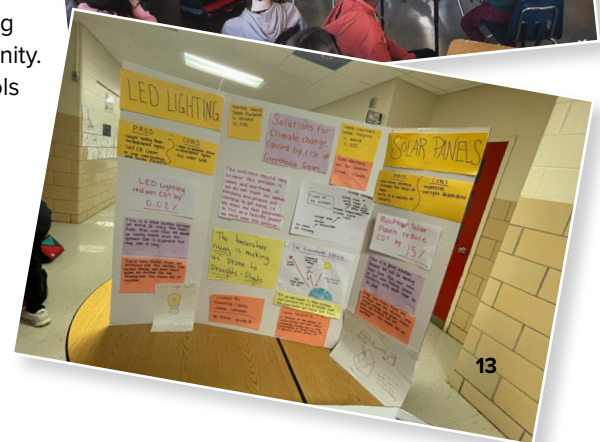
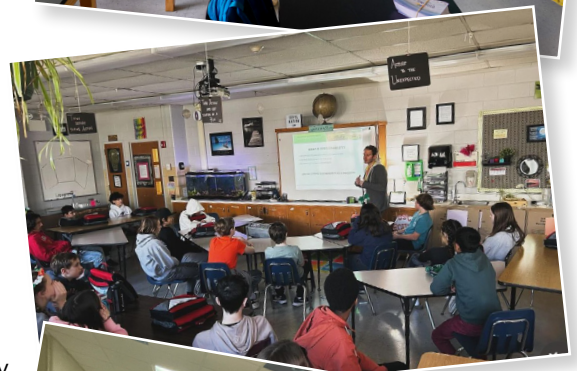
Downers Grove High School Workshops

On May 10, 2024 Village staff conducted a series of five workshops with AP Environmental Science students at Downers Grove South (DGS) and Downers Grove North (DGN) High Schools. Using the Guiding DG DIY Kits, students were asked to work in small groups to self-identify challenges and assets in the community. Groups shared their responses to populate a class list, after which students were asked to individually vote for their top three issues and top two strengths. Although the workshop broadly targeted the full Guiding DG process, sustainability issues were a priority for high school students. The following are the top identified challenges and assets from each class (ESP related topics in bold).



O'Neill Middle School - Climate Solutions Summit

As part of the seventh grade science curriculum, students learn about climate change and are asked to think about potential solutions for their community. As part of this unit, Village staff was invited to present about the ESP and work with students to identify challenges and solutions for climate change in either their school or community. Students then worked together to make displays for the rest of the school to view. As staff met with students, some common themes were repeated across classes. Students were eager to see efforts around implementing better recycling practices and installing renewable energy sources in the community. Students also recognized the importance of being sustainable in their own schools and discussed programs that would reduce food waste in the lunchroom while making sure every student had enough to eat everyday.



Greener Grove and Pierce Downer Heritage Alliance Workshop

On May 28, 2024, Greener Grove and the Pierce Downer Heritage Alliance (PDHA) hosted a joint meeting and invited Village staff to present an update on the ESP. Staff provided the group of 37 residents with a summary of the Guiding DG process and the discussion that took place during the May 21, 2024 Village Council workshop. The group spent the majority of the 90 minutes having an open discussion about various sustainability related challenges in the community. At the end of the discussion, the group reviewed the list of 18 issues that were collectively identified. Individuals were then asked to vote on their top issue. The most popular response was public awareness and lack of culture around environmental stewardship. Below is the full list of issues that were identified during the discussion:



- **Public awareness and lack of culture around environmental stewardship (13 votes)**
- **Lack of natural space (5 votes)**
- **Lack of sustainability leadership across all local governments (3 votes)**
- **Too much single family zoning (2 votes)**
- **Use of pesticides and mosquito spraying (2 votes)**
- **Tree preservation (2 votes)**
- **Single-use takeout containers (1 vote)**
- **Food waste (1 vote)**
- **Navigating regulations and permit process for solar (1 vote)**
- **Stormwater regulations not strict enough**
- **Residential lot coverage (too much), especially infill redevelopment**
- **Recycling contamination**
- **Unproductive commercial areas with excessive parking lots (e.g., 75th and Lemont)**
- **Incremental approach to solutions**
- **Light pollution**
- **Lack of bird friendly windows**
- **Lack of downtown recycling receptacles**
- **New residents not aware of relevant information**
- **Emissions caused by traffic congestion**

Key Takeaways

- **Perceived Weakness.** Survey respondents identified sustainability initiatives as the top weakness in the community (31.7%). Zero survey respondents identified sustainability initiatives as a top strength.
- **Natural Resources.** Land, nature, clean air, and clean water were all identified as top priorities through the community survey and dot exercise. This points to a desire to see a healthy relationship between the community and natural environment with an emphasis on maintaining pristine natural resources. The existing open space and nature preserves in the community were also identified as an asset through the map.social tool.
- **Climate and Clean Energy.** Energy and cClimate was also a top priority for sixth graders, but was ranked as the second to last priority by the general public at the community kKick-off and Earth Day event.
- **Importance to Youth.** Through public engagement, staff met with hundreds of students across the community. Downers Grove's youth were passionate and vocal advocates for the environment and desired to see the community reduce its impact on the environment. Middle school students promote reduced waste and renewable energy and high school students believed car congestion and a lack of bike/pedestrian connectivity to be top issues in the community.
- **Cultivating a Community Culture.** Members of Greener Grove and Pierce Downer Heritage Association viewed a lack of awareness and lack of culture around environmental stewardship as a major barrier and challenge in the community, but were willing to lead an effort to promote change in the community.

SECTION 3

CLIMATE RISK ASSESSMENT

Climate change is expected to have broad impacts across the world, though localized impacts are expected to differ in scope and severity. Scientists have developed advanced models that anticipate changes to weather patterns based on varying assumptions of greenhouse gas (GHG) emissions to anticipate changes in risk profiles for various natural hazards. While the other Guiding DG ECMs have focus on the current conditions of Downers Grove, the ESP ECM also incorporate projections using these climate change models. The purpose of including projections that look ahead is to identify potential actions that need to be taken now to adapt to future changes and mitigate future risks.

This section identifies and describes various changes that are anticipated to increase the risk of specific hazards or create generalized stress on the community and to Village operations. These changes are referred to as climate stressors and have been previously identified in both the 2021 Climate Action Plan for the Chicago Region and the DuPage County Natural Hazard Mitigation Plan. A description of these stressors are provided and supplemented with additional data taken from various sources, including climate projection models known as Representative Concentration Pathways (RCP).

RCP models are based on assumptions of greenhouse gas concentrations in the atmosphere that will result in different warming scenarios. Two RCP models are included in this section. RCP 8.5 is a worst case scenario which assumes increasing emissions through the end of the 21st century, resulting in an increase in average global temperatures of about five degrees Celsius. RCP 4.5 is an intermediate scenario that would see GHG emissions peak around 2040 and then reduce to about half by the end of the century, resulting in about 3 degrees warming.

Summary of Regional and DuPage County Risk Assessment

The DuPage County Natural Hazard Mitigation Plan (NHMP) includes a comprehensive section that provides detailed estimates and risk profiles for natural hazards that have historically impacted the region using the *Federal Emergency Management Agency's (FEMA) National Risk Index (NRI)*. The NRI includes several factors based on the probability of an event occurring, severity of the event, impact, and social vulnerability. In addition to overall risk, FEMA also calculates expected annual losses and a resilience factor that accounts for a community's ability to both prepare and recover from an event. The risk assessment and the NRI are based on historical data to predict current risk and do not account for future changes due to climate change.

DuPage County has a relatively moderate risk index, but relatively high expected annual losses. Compared to the region, only Cook County has a higher risk index than the collar counties. DuPage has a higher expected loss compared to other collar counties due to its more built out nature and property values. Within Downers Grove, all census tracts have relatively low overall risk and expected loss, except for one. The single census tract with a relatively moderate overall risk index includes Midwestern University and Good Samaritan Hospital, which impact social vulnerability in the index calculation and are both considered critical infrastructure.

There is some variation in risk across census tracts for specific hazard types as well. Differences in risk within the community are driven by variation in expected annual loss and social vulnerability caused differences in total property value and demographic characteristics. All census tracts in Downers Grove have relatively high resilience for all hazard types that are applicable to the community as a whole. A complete comparison of risk variation across census tracts and hazard types can be viewed through FEMA's interactive mapping tool.

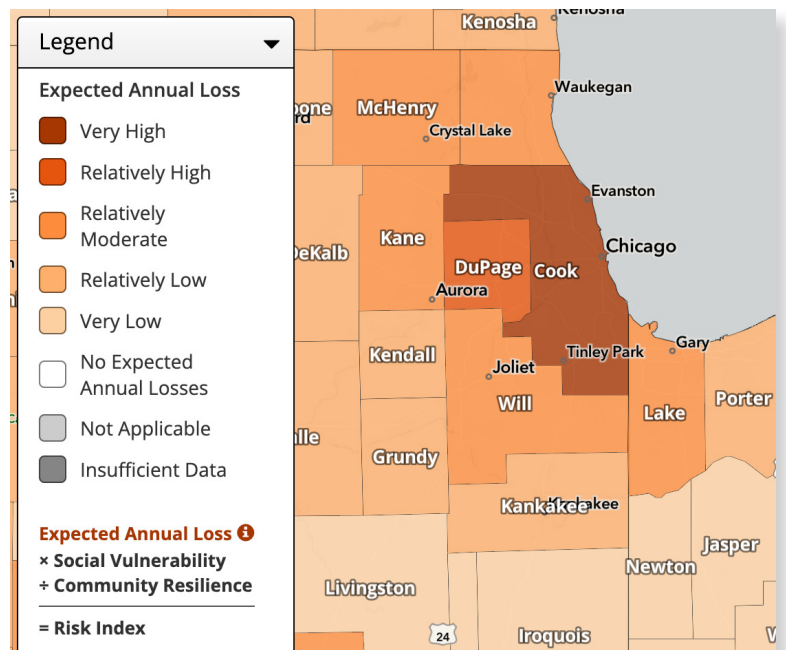
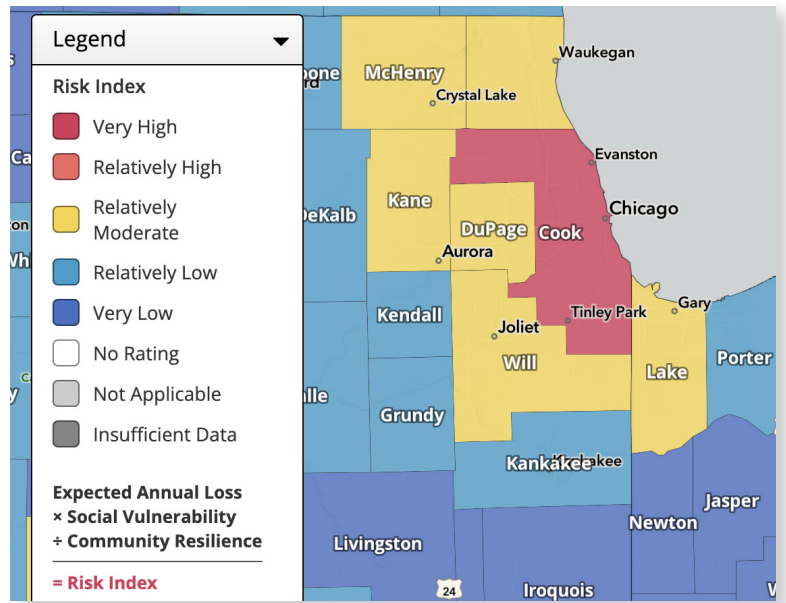


Table 4 provides the current risk profile for the DuPage County, including Downers Grove. An additional column with the expected change in risk score has been added. Expected change in risk is based on the anticipated impacts of climate change under the RCP 4.5 and RCP 8.5 models.

Table 4: Natural Hazard Risk Indices & Expected Change

Event Type	Total Risk Score (out of 100)	Expected Change
Severe Summer Storms: High Winds	62	+
Flood: Urban/Flash Flooding	60	+
Severe Winter Storms: Blizzards	60	-
Flood: Riverine Flooding	49	+
Tornadoes	48	+
Severe Winter Storms: Ice Storms	46	+
Severe Winter Storms: Extreme Cold	38	-
Extreme Heat	37	+
Severe Summer Storms: Microburst	36	+
Drought	33	-
Severe Summer Storms: Lightning	29	+
Severe Summer Storms: Hail	28	+
High Hazard Dams	20	NA
Earthquakes	18	NA
Ground Failure	13	+

Temperature Changes

One of the dominant characteristics of climate change is a warming planet. Increasing emissions of GHGs trap the sun's radiant heat within Earth's atmosphere, known as the enhanced greenhouse effect. As the total volume of GHG increases, the warming effect continues to amplify. This is coupled with a feedback loop of increased evaporation and higher volumes of water vapor in the atmosphere, increasing atmospheric and oceanic warming. Collectively, this has resulted in average global temperatures rising about two degrees Fahrenheit since the industrial revolution. 2023 was officially the hottest year on record, but as this trend continues it will also be cooler than years moving forward. Increased temperatures in the Great Lakes region are not anticipated to be as severe as in other parts of the US, but will be significant enough to cause stress to ecological systems and human health. In general, projections for Downers Grove anticipate that summers will be hotter and winters will be milder. Table 5 provides projected changes in average temperatures according to the NHMP and the Climate Risk and Resilience (ClimRR) portal, which provides more localized projections.

Table 5: Predicted Changes in Temperature

<i>Temperatures based on Fahrenheit</i>	Modeled History	Mid Century		Late Century	
		RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5
Avg. Min	43.44	46.03	46.9	49.42	53.46
Avg. Max	57.2	60.26	60.14	62.8	66.67
Summer Avg. High	81.08		86.03		91.18
Winter Avg. low	21.31		26.32		32.49
Daily Max Heat Index	82.03		86.95		95.13
Seasonal Max Heat Index	102.89		118.24		135.12
Days with Max HI over 95	6.25		15.24		36.97
Days with Max HI over 105	0.92		4.68		14.43
Days with Max HI over 125	0		1.16		3.78
Annual days temp. Over 90	14-20	25-74	30-90	36-80	52-117
Annual days temp. Over 100	0	0-16	1-16	1-24	2-69

Extreme Heat

Average summer daily high temperatures are projected to increase by five degrees by 2050 and 10 degrees by the end of the century under RCP 8.5 projections. Historically, DuPage County has seen 14-20 days that exceed 90 degrees annually. By 2050, it is anticipated that the number of days above 90 degrees will increase to anywhere from 25 to 90 days on average, depending on the warming scenario. Higher projections (RCP 8.5) could result in up to an equivalent of four months of temperatures exceeding 90 degrees Fahrenheit by the end of the century. When factoring in the heat index, more localized projections for Downers Grove estimate the number of days with a heat index exceeding 105 degrees (temperature when National Weather Service issues a heat warning) increasing from an average of once per year to almost 5 days by midcentury. By the end of the century, more than 14 days per year could have a heat warning and the potential for six days a year having a heat index exceeding 115 degrees.

Impact on Downers Grove

Extreme heat is the deadliest type of weather related disaster in the U.S. Extended periods of high temperatures are a significant health hazard, especially for vulnerable populations such as the unhoused, elderly, and children under the age of five. The projected increase in annual days with a heat warning (i.e., heat index exceeds 105) is likely to result in more frequent and longer periods of dangerously high temperatures. According to the most recently available census data, the two segments of Downers Grove's population that are growing are individuals over the age of 65 and children under the age of five. If these trends continue, Downers Grove may face an increased risk to public health from both increased extreme heat and increasing population in vulnerable segments.

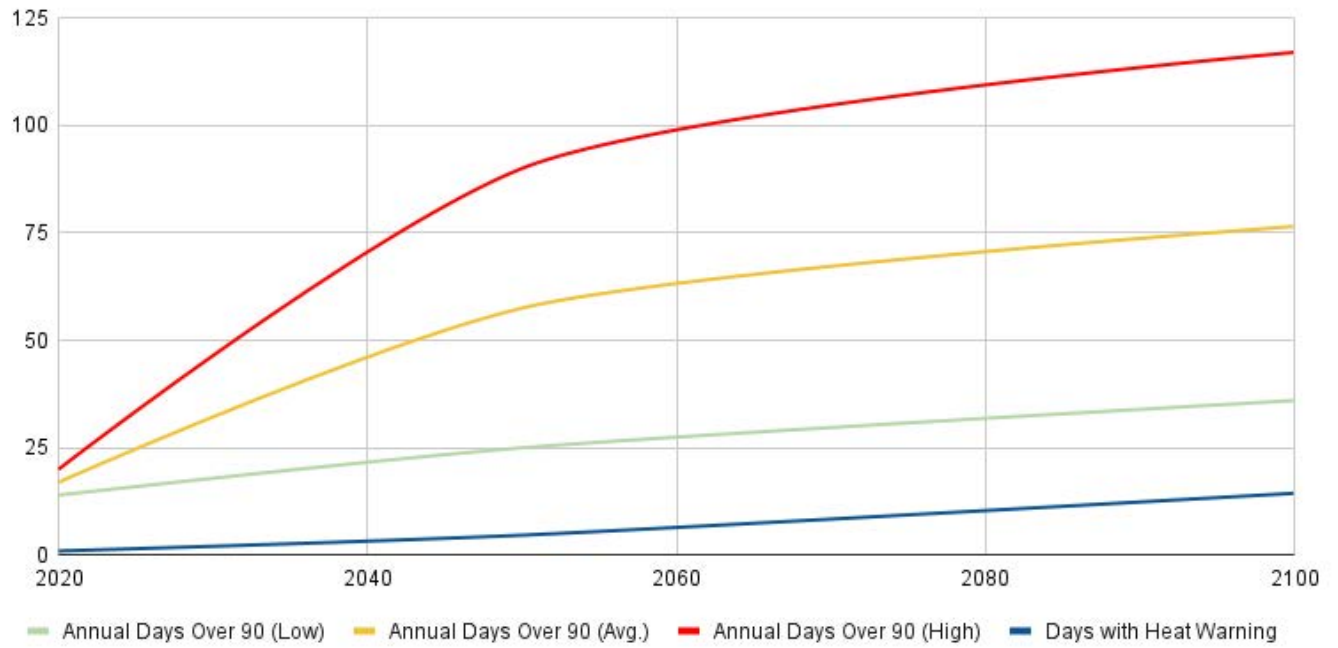
Extreme heat is addressed in the Village's emergency management plan and relies on increased communication to the public and the operation of cooling centers for individuals that do not have shelter with adequate cooling. The Village's current plan provides a level of resilience to this individual climate stressor that can be maintained or enhanced as needed.

Direct impacts from extreme heat are also anticipated to cause ecological stress as well. One of the community's greatest natural assets are its trees. Publicly and privately owned trees that makeup our urban canopy are likely to face added stress from the heat. Prolonged and regular extreme heat may result in tree loss, especially species that are less tolerant to heat, causing secondary impacts such as increased heat islands effects. Maintaining the urban canopy will likely require enhanced care, more frequent replacement, or a shift in the types of species that are planted. Enhanced care and replacement would result in higher costs to the Village.

In addition to the direct stress caused by increasing heat in the summer months, there are also secondary stressors to consider such as increased demand for both energy and water. Higher temperatures are associated with higher energy consumption for buildings to be cooled. This increased energy demand can result in stress on electric infrastructure. Increased energy consumption will also result in higher energy costs for consumers and the Village. Similarly, increased demand for water for recreational purposes and maintaining vulnerable landscapes may also be realized, resulting in higher water consumption and water costs.

Projected Frequency of Days Exceeding 90 Degree

Low = RCP 4.5 | High = RCP 8.5



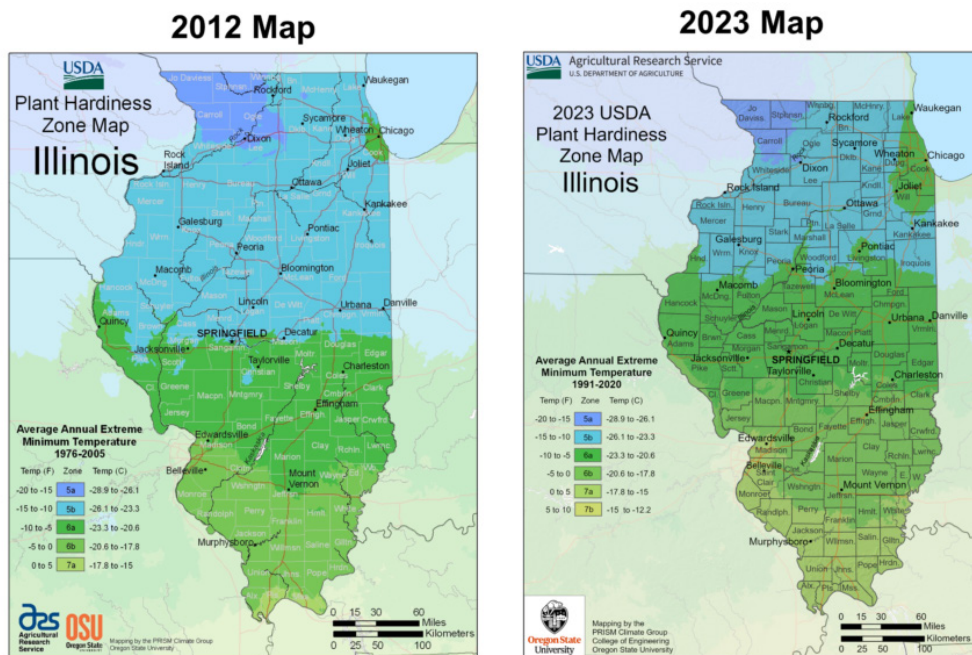
Milder Winters

Just as summer months are anticipated to become hotter, so are winter months. Current low temperatures in the winter in Downers Grove average 21.31 degrees and daily highs average 33.36 degrees. Under RCP8.5 projections, average low temperatures are expected to increase five degrees Fahrenheit by 2050 and 11 degrees by the end of the century. Average daily high temperatures are anticipated to increase by nearly 4 degrees by midcentury and 9 degrees by end of the century. The shift in daily high and low temperatures is likely to result in more frequent cycles of freezing and thawing through 2050, until low temperatures potentially increase above freezing.

Changes in daily average precipitation during the winter are not expected to change, though the maximum daily precipitation is projected to increase from 1.18 inches to 1.45 inches by the end of the century. This would likely manifest as a similar number of precipitation events, but with more precipitation during each event. Coupled with warmer temperatures that would see average daily lows around 32 degrees, these precipitation events could come in the form of rain, freezing rain, or sleet instead of snow.

Impact on Downers Grove

Milder winters may seem like something to welcome, but they are likely to come with some uncertainty that has both positive and negative impacts to the community and broader region. Warmer temperatures are already resulting in longer growing seasons, and in 2023 the USDA revised its Plant Hardiness Zone map to account for warming winter temperatures and earlier last frost dates. According to the Illinois State Climatologist, the map update saw a northward shift of zone 6a boundary of about 60 miles, as well as its expansion in the Chicago metropolitan region. Although the increased growing season may be a benefit for farmers and gardeners, it also allows for the migration of non-native plants and insects, some of which may have a negative impact. This may result in the need for enhanced management of Downers Grove’s natural areas, urban canopy, and the associated costs. Additionally, warmer winters and a lack of prolonged hard freezes may result in an increase in the prevalence of specific insects that pose ecological and public health risks. Increasing temperatures and changes to the types of precipitation that occurs will also impact snow operations, though it is difficult to predict exactly how. Less snow accumulation would result in a reduced need for plowing, though changes to wetter snow, freezing rain, and sleet would still warrant clearing roads and salting. More frequent freezing events and salt use also has an ecological impact on our watersheds and groundwater. Additionally, changes in temperature and precipitation can change the characteristics and frequency of freeze-thaw cycles. An increase in these types of cycles has the potential to reduce the life of pavement and increase deterioration of roadways, requiring more frequent repair at a cost to the Village.



Severe Weather

Several of the current natural hazards identified in the NHMP are categorized under severe summer storms and include things like tornadoes, strong winds, and microbursts. The threat of these types of weather events will likely continue increasing based on climate change predictions. Increasing temperatures and moisture will contribute to the intensity of thunderstorms. High winds, severe thunderstorms, and tornadoes present both a threat to life and property. The National Oceanic and Atmospheric Administration (NOAA) tracks the prevalence of major weather and climate related disasters and has found that the frequency of these types of events that result in damage exceeding \$1 billion is increasing. According to 2021 study by NOAA,

“Over the last five years (2017-2021), there were just 18 days on average between U.S. billion-dollar disaster events compared to 82 days in the 1980s. Shorter time intervals between disasters can mean less time and resources available to respond, recover and prepare for future events. This increased frequency of events produces cascading impacts that are particularly challenging to vulnerable socioeconomic populations.”

This has also been true for Illinois. Between 1980 and 2024, the number of billion-dollar disasters in Illinois has averaged 2.6 per year (adjusted for inflation). *Since 2020, a total of 28 of these events have occurred, with 24 being caused by severe storms.* In 2023, Illinois also *experienced 136 confirmed tornadoes*, the most of any state in the US. So far in 2024, there have been 71 confirmed tornadoes in the state. By comparison, *Illinois averages 54 tornadoes* per year since records have been kept. According to the NHMP, DuPage County ranks 9th in Illinois for the highest normalized number of tornadoes per 100 square miles, with a 35% likelihood of an occurrence somewhere in the county in any given year. Trends indicate that we are already experiencing both an increase in the frequency and severity of these types of weather events, and it will continue into the future under climate change projections that account for increasing GHG emissions.

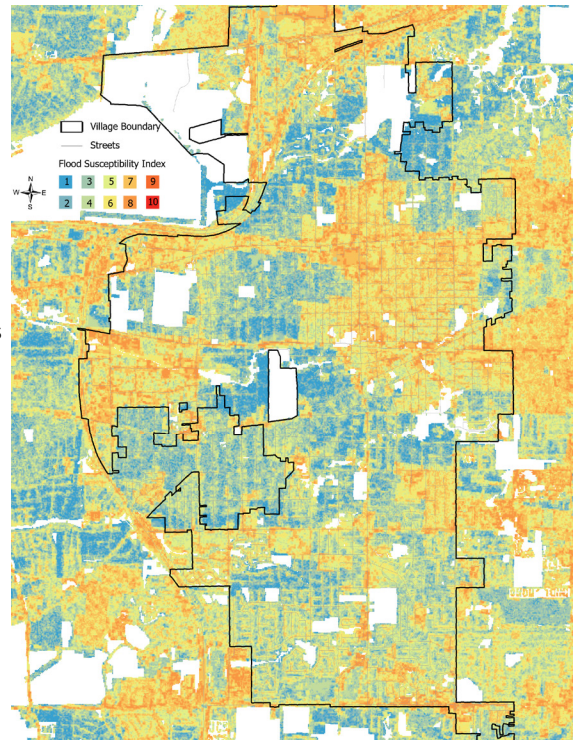
Impact on Downers Grove

Improved tracking and identification of severe weather threats allows the Village to proactively prepare for and warn staff and residents to seek shelter and reduce the risk of loss of life. Even with advanced warning, severe weather can be unpredictable and cause significant damage to property. Increasing frequency of property damage coupled with increasing property values and higher replacement costs will result in higher expected losses, which have both direct and secondary costs. Direct costs are associated with the immediate costs of recovery following an event. Secondary costs are likely to come in the form of higher insurance premiums and higher costs of goods and services, resulting in a higher cost of living. This may ultimately reduce spending power and property values that can erode the Village’s economic base. The impact on higher living costs on residents, especially for economically vulnerable populations, can also have quality of life and health impacts that are long lasting.

Flooding

Flooding is one of the *most common and costly disasters in the US*, too often exacerbated by the built environment. Between 2007 and 2014, there was *a total of \$1.8 billion in flood damage paid out by insurers in the Chicago metropolitan region*. Flood risk is based on two different types of flooding events. Riverine flooding, which is a natural process that occurs when water from precipitation events or snowmelt causes the water level of a natural body of water, such as a river or its tributaries, to rise above its banks and stormwater derived flooding, which is driven by runoff and modeled across several factors to help identify geographic areas that are susceptible to this type of flooding event. The susceptibility of certain areas to riverine flooding can be impacted by development patterns within a watershed and how they transfer water during heavy rain events. A combination of stormwater infrastructure and development regulations can be used to reduce the risk of riverine flooding. Downers Grove does have specific areas along Lacey Creek, St. Joseph Creek, and Prentiss Creek which are at a higher risk of this type of flooding event.

The second type of flooding event is considered urban flooding. This type of flooding occurs in a built environment when rainfall overwhelms the capacity of drainage systems, resulting in stormwater flooding streets, yards, and entering buildings. The risk of this type of flooding is more geographically distributed compared to riverine flooding. The flood susceptibility map is taken from a study conducted by Chicago Metropolitan Agency for Planning (CMAP) and shows the areas of Downers Grove which have a higher susceptibility to urban flooding and shows that areas with higher lot coverage and impermeable surfaces are at higher risk.



Climate projections for DuPage County and Downers Grove both indicate that total annual precipitation is likely to increase. RCP 8.5 projections estimate that Downers Grove could see a 12% increase in annual precipitation by midcentury and 24.3% increase by the late century. Additionally, the number of days with precipitation is anticipated to decrease. This means that precipitation events will be heavier with longer periods between them, resulting in a generalized increase in the risk of flooding. However, the risk of flooding is also dependent on future development patterns and stormwater management practices.

Impact on Downers Grove

In 2012, the Village recognized a service gap related to stormwater management and took action to create one of the region's first stormwater utilities. Since then, the Village has made significant investments into stormwater infrastructure. The Village has also adopted and enforces stormwater regulations that are aimed at development of certain types and in certain areas (e.g., flood plains and Localized Poor Drainage Areas). While the risk of flooding has not been totally eliminated for all portions of the community, significant progress has been made to more effectively convey runoff during rain and snowmelt.

Traditional stormwater management, floodplain management, and watershed planning rely on maps developed by FEMA, which were most recently updated in 2019 in DuPage County. DuPage County is unique in its development and use of more advanced hydrologic and hydraulic models, which use historic rainfall data. These models are more dynamic and account for stormwater management infrastructure and variability in precipitation across the county during rainfall events. Not only do these models and the systems in place allow for enhanced stormwater management, it also enhances the ability to issue flood warnings to reduce the risk to life and health for residents. Even with advanced warning, there are still health and life hazards associated with flooding that require emergency response.

In 2015, the Village established a recommended level of service for the stormwater management system as the ability to safely convey and store runoff from 95% of rainfall events experienced in any given year. Based on projections for precipitation and heavy rainfall events to increase, maintaining this level of service in the community may require further enhancements to the stormwater management system. The Village has had three stormwater infrastructure improvement plans since 2008, with continued improvements planned through at least 2029 to address areas of the community that lack infrastructure or infrastructure are undersized. Continued planning, monitoring, and use of DuPage County’s dynamic models are an appropriate strategy for building resilience through mitigation.

In instances where precipitation falls within the 5% of events that exceed the stormwater management system’s capacity, recovery efforts are important. Post flood recovery requires significant response to prevent ongoing health hazards such as exposure to mold and other pathogens. Compared to the immediate emergency response that is required by the Village during a flooding event, post disaster recovery is most often the responsibility of property owners.

Economic loss from flooding presents a significant threat to the Village and its residents. Damage to homes, commercial properties, and critical assets can result in high replacement costs and reduced EAV if adequate repairs are not made. Improving resilience, especially the ability to recover quickly, depends on sufficient preparedness. The Village is already taking proactive measures to reduce the potential for economic loss through its stormwater and development regulations. Additional proactive measures by individual property owners, such as implementing native landscapes and rain gardens can further reduce the risk of flooding. Downers Grove has several residential properties that are certified through The Conservation Foundation’s Conservation@Home program. There are also a number of residents participating in the Village’s bioswale program, which is a Village-funded voluntary program to encourage the use of native plants as a green infrastructure strategy. In FY2023 the Village installed six new bioswales and in FY2024 the Village budgeted \$30,000 for the bioswale program.

Table 6: Predicted Changes in Precipitation

	Modeled History	2050		Late Century	
		RCP4.5	RCP8.5	RCP4.5	RCP8.5
Avg. Annual Total Precipitation*	31.75”	35.17”	35.65”	34.25”	39.47”
Days Per Year with Precipitation	171	168	167	167	164
Annual Days with >1 Inch	4	5	5	5	6
Annual Days >2 Inches	0	0	1	1	1
Annual Days Exceeding 99th Percentile Precipitation	5	7	7	7	8

*Indicated Downers Grove specific data, all other data points are for DuPage County

Table 7: Risk Exposure Matrix - Summary of Hazards

Community Assets	Severe Weather	Extreme Heat	Flooding	Note
Village-Owned Facilities	x		x	Structural damage during severe weather; increasing costs and infrastructure needs to maintain stormwater level of service
Non-Village Infrastructure	x	x	x	Storm damage to power lines; overloading of electric grid during heat waves
Residential Buildings	x		x	Property damage due to storms and flooding
Commercial Buildings	x		x	Property damage due to storms and flooding
Groups				
General Population	x		x	High winds causing damage to property or trees that pose health and safety risk to individuals Flash flooding Exposure to mold or other pathogens following flood
Vulnerable Populations	x	x	x	High winds causing damage to property or trees that pose health and safety risk to individuals Extreme heat poses significant health threat to elderly and children under 5 Inability to seek shelter during flooding event Exposure to mold or other pathogens following flood

Key Takeaways

- **Enhanced Risk.** Climate change is projected to result in enhanced risk for the majority of the natural hazards that are identified in the DuPage County NHMP. The primary natural hazards facing Downers Grove due to climate change are increased frequency and intensity of severe weather, extreme heat, and flooding.
- **Hotter Summers.** Local projections for Downers Grove anticipate hotter summers, with the number of days having a heat index above 105 increasing to 5 days by 2050 and 14 days on average by the end of the century. Excessive heat in the summer poses a health threat to vulnerable populations such as the elderly, children, and the unhoused. Children under five and adults over 65 are two segments of the community that are growing.
- **Milder Winters.** Winter storms are expected to reduce in frequency and severity, but freezing and thawing cycles will accelerate. This will likely change the way that snow operations occur and potentially reduce the life of Village roads.
- **Increasing Precipitation.** Climate projections predict that Downers Grove will see more annual precipitation, with a higher probability of heavy rain events. The Village has a recommended level of service for the stormwater management system to safely convey runoff for 95% of annual rain events. This has been carried out through significant investment in infrastructure and regulation of development. Maintaining this level of service may be sufficient with current plans and regulations, but may need to be enhanced with increasing precipitation.
- **Higher Costs.** Climate stressors are likely to have secondary economic impacts in the form of higher costs. Increased risk of severe weather and higher cost of replacement will likely result in higher insurance premiums. Hotter temperatures will drive demand for energy and water, resulting in higher utility bills. Collectively this will result in a higher cost of living for residents. The Village also faces cost increases for energy and maintaining infrastructure, but must also consider how a higher cost of living for residents will reduce spending on taxable goods and services.

DOWNERS GROVE ACTIONS AND GREENEST REGION COMPACT FRAMEWORK ANALYSIS

The *Greenest Region Compact* (GRC) is an initiative that brings together local governments across the Chicago metropolitan area in an effort to collectively take action and make the region more sustainable. Given the high degree of government fragmentation in the region, the GRC serves as an important coordination mechanism between local governments. Facilitated and led by the Metropolitan Mayors Caucus, the GRC was originally created in 2007 as a means of assisting municipalities to identify means of making their operations and public services more environmentally friendly. In 2016, the GRC was updated through a collective effort and the current GRC Framework was introduced. The updated GRC pledge is more comprehensive and includes 49 sustainability goals that were developed by consensus. The *GRC Framework* is a companion document to the pledge and serves as a flexible tool to guide local governments of all sizes and characteristics towards achieving the collective goals. It is intended to be adapted through various policy and implementation processes, just as the Village is doing through the creation of its first ESP.

The GRC Framework consists of a hierarchy of goals, objectives, and strategies across ten different categories. Each goal has a list of objectives that are intended to collectively accomplish that goal, and specific objectives may also include one or more identified strategies to achieve the objective. In total, there are 305 objectives and 106 strategies in the framework.

It is important to recognize that the flexibility that was intentionally written into the framework, especially the objectives and goals, makes it more of a qualitative tool than one that can be used quantitatively. As an adaptable tool, the GRC Framework also does not provide any priorities or weights for specific objectives and strategies either. It is assumed that adopters of the framework will evaluate the characteristics of their community and engage with stakeholders to identify priorities based on goals. Therefore, there is a degree of subjectivity in how many of the objectives are interpreted, carried out, and measured. As an example, the objective “Manage special events sustainably (MO11),” could include a myriad of strategies and actions that would accomplish that objective depending on the type of special event. Other objectives and how they would be accomplished are clearer, such as, “Promote Sustainable Sites Certification for commercial and institutional landscapes (L5).”

Village Alignment with GRC Framework

As part of the process leading up to the Village’s decision to join the Greenest Region Compact (GRC), Village Council directed staff to evaluate how Village actions comport with the GRC Framework. Staff across relevant departments evaluated each item of the GRC framework to identify current or past projects, programs, and policies that aligned with the objectives and strategies in the framework. The identified actions were summarized in a [report to Village Council on March 7, 2023](#).

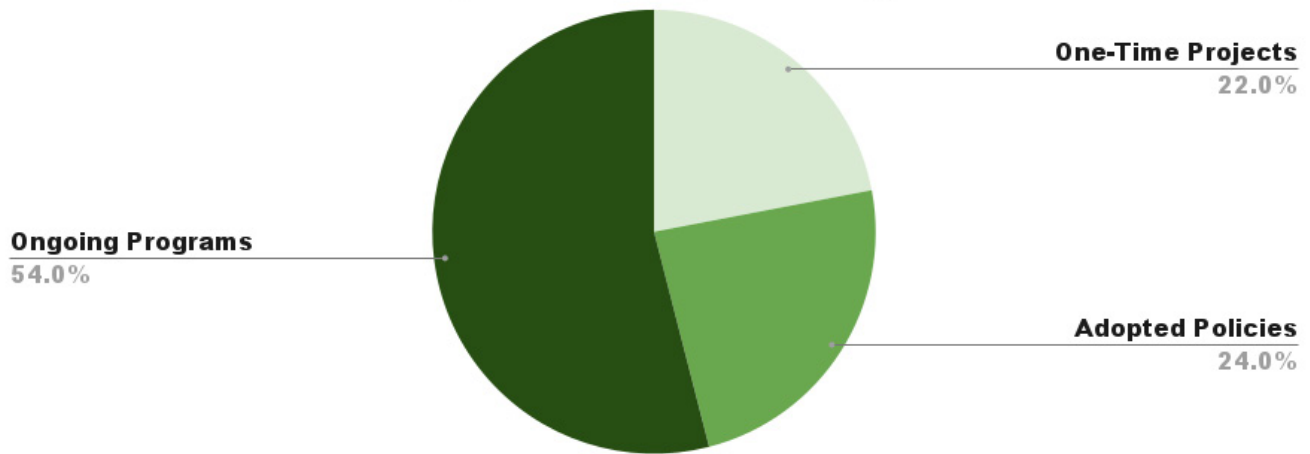
A key takeaway from the report was that the Village was already taking action across many fronts, though there had not been a formal effort to centralize a list of those actions or track them over time. In general, there was a high degree of alignment between the Village’s actions and the GRC Framework. In total, staff identified more than 200 specific actions that aligned with 180 out of 315 objectives and 53 of 106 strategies in the GRC Framework. 82 of the objectives and strategies had multiple actions that aligned with them. Table 8 is a summary from the staff report that identifies action alignment with the goals, objectives, and strategies from each of the ten categories.

Table 8: Summary of GRC Staff Report

Category	Goals		Objectives		Strategies	
	Total in GRC Framework	Village Action(s) Identified	Total in GRC Framework	Village Action(s) Identified	Total in GRC Framework	Village Action(s) Identified
Climate	4	3	18	7	4	1
Economic Development	2	2	12	6	-	-
Energy	5	5	33	11	4	1
Land	7	7	46	31	43	33
Leadership	3	2	11	6	-	-
Mobility	5	5	39	26	2	0
Municipal Operations	4	4	17	10	16	4
Sustainable Communities	7	6	54	23	6	0
Waste & Recycling	5	5	25	15	9	4
Water	7	7	60	45	22	10
Total	49	46	315	180	106	53

It is important to note that although quantitative data is being presented in the staff report, it is based on a qualitative comparison of language in the GRC Framework and staff’s interpretation of that language. Effectively, the quantitative data in the report is based on binary analysis and is not intended to claim that an objective or goal has been fully achieved. Still, the report was helpful in identifying where Village actions have stronger alignment with the GRC Framework and where there are gaps. Land, Water, and Waste & Recycling were the three categories which had the highest percentage of actions that aligned with objectives and strategies. Energy, Climate, and Sustainable Communities had the fewest actions identified that align with the GRC Framework. This initial analysis provides important insights into the categories that are current strengths and weaknesses.

Figure 1: Action Types in GRC Staff Report



As part of this report, additional analysis of the framework was conducted to determine the types of actions that have been taken and how each objective and strategy in the framework best aligns with Village operations. Analysis of the actions identified in the staff report indicates that a majority (54.2%) of the actions were part of ongoing programs or part of the daily operations of the Village. The remaining actions identified in the staff report can be classified as either a policy that has been adopted (23.5%) or a one-time project (22.3%). Below are examples of GRC objectives and the types of actions classified in these categories.

Table 9: Summary of Actions Types in GRC Staff Report

Objective in GRC Framework	Example Action and Description	Action Type
Operate a safe, clean and efficient fleet	The Village maintains fueling infrastructure and purchases heavy duty vehicles that utilize B20 biodiesel	Ongoing
Diversify the urban forest for long term resilience	The Village actively manages its portion of the urban canopy through annual replacements and new trees to maintain adequate biodiversity and align with the Village’s Urban Forestry Manual	Ongoing
Evaluate proposed developments for on groundwater levels and water quality	The Village requires new developments to adhere to Post Construction Best Management Practices (PCBMPs) which are codified as part of the stormwater ordinance	Policy
Adopt codes and permitting practices that support renewable energy systems in the community	The Village requires new construction to adhere to the 2021 Energy Code, which requires that new residential construction be solar and EV ready	Policy
Coordinate with regional transportation agencies to maximize bicycle, pedestrian, vehicular transit, and rail connectivity and mobility	Collaborated with ICC, DuPage County, BNSF, Metra, and the State of IL to construct the Belmont Underpass – project also includes the pollinator garden which was also a one-time project at a later date	One-Time Project

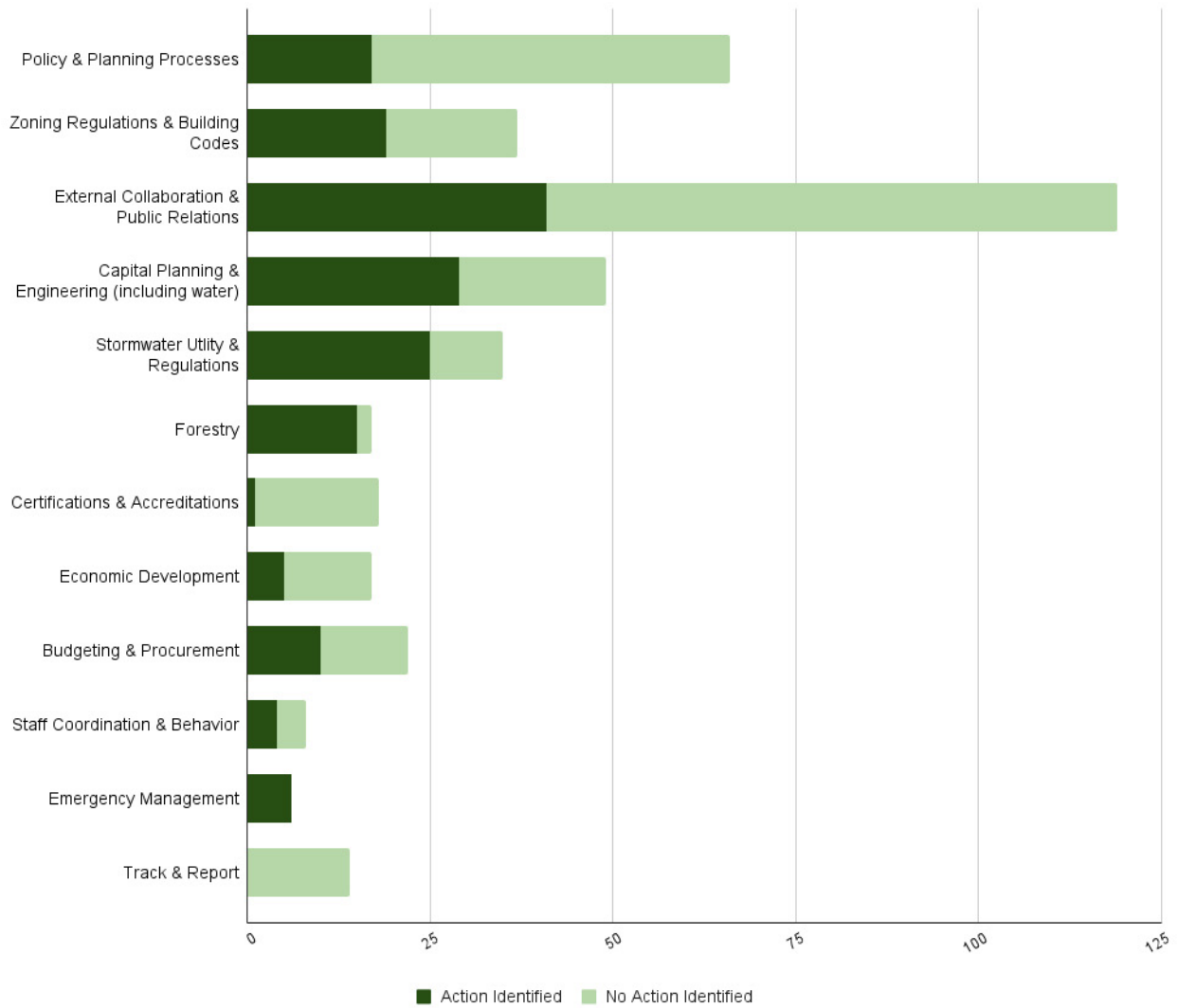
Although this provides some insight into where sustainability efforts are occurring in the context of the Village, no particular weight or claim can be made about one action type being more effective than another. Integration into Village operations and ongoing efforts are necessary for continuous incremental improvements, but one-time projects can also make significant impacts as well. For instance, the example of the Belmont Underpass was a significant investment that reduced traffic congestion (and emissions) and improved vehicular and pedestrian safety, while also incorporating a pollinator garden into the project.

To further identify sustainability actions within the Village's operations, objectives and strategies in the GRC Framework were reorganized from their original ten categories into a new set of categories that better align with Village functions. The ten categories in the GRC Framework align well with the fundamental themes of sustainability, but not necessarily with the way that local governments operate. This realignment is intended to provide insight into the functions where past efforts have been focused and where future capacity may be needed to achieve the GRC Framework to its full potential. Table 10 provides a list of the new categories with a description of the types of actions that would be included in that category.

Table 10: Reorganization of GRC Items and Village Actions

New Category	Types of Actions	GRC Example	Explanation
Planning & Policy Processes	Adoption of specific policies, plans, or actions that require Village Council to authorize action through new policy	Facilitate access to renewable energy systems through collaborative purchasing for residents and business (E13b)	Action would require Village Council to exercise authority for community aggregation and enter into a contract on behalf of residents
Zoning Regulations & Building Codes	Policies or ordinance changes that specifically target land use and development	Reduce sprawl by promoting infill development to reduce adverse impacts on natural resources and infrastructure demands (L1)	Influencing development patterns, individual land uses, and development standards done through zoning and building regulations
External Collaboration and Public Relations	Actions that require participation of an entity outside of the Village or activities that are communications related	Encourage the community to participate in sustainability initiatives and events (SC45)	Achieving this objective would require publicity and community organizing with multiple entities
Capital Planning and Engineering (including water)	Actions and activities that directly relate to infrastructure planning, design, construction, or management	Avoid the use of coal tar sealants on municipal property (W9a)	Objective achieved through engineering and design of pavement standards
Stormwater Utility & Regulations	Capital projects related to stormwater and community outcomes influenced through stormwater policies	Support post-development runoff reduction and mitigation (W11)	Development standards that fall under PCBMP and stormwater regulations
Forestry	Policies and actions directly related to urban canopy	Engage residents in public stewardship through cost-share planting programs (L24b)	Directly relates to the Village's parkway tree program
Certifications & Accreditations	Specific external certification programs	Certify as an IEPA Illinois Green Fleet (MO15)	Specific program that requires actions and verification
Economic Development	Activities related to recruitment, retention, or promoting green practices in business community	Recognize and support businesses who practice and promote sustainability (ED7)	Activity that is directly related to promoting behaviors within business community
Budgeting & Procurement	Activities that require specific financing strategies, allocation of financial resources, or would be achieved through a green procurement strategy	Engage with Solid Waste agencies to manage waste sustainably (WR19)	Solid waste is an external service contract and requirements would be structured into RFP process
Staff Coordination & Behavior	Objectives that are internal to Village organization and require specific actions by staff	Reduce the use of paper in municipal offices (WR3)	Reducing printing requires behavioral change with staff
Emergency Management	Resilience actions related to disaster preparedness and recovery	Prepare Pre-Disaster Hazard Mitigation Plan (C12a)	Directly relates to functions of emergency management team
Track & Report	Functions that require collection of data, analysis, and reporting	Report local and regional environmental data to advance national and international collaborative efforts (e.g., GHG reporting, water supply planning) (LP3)	Specific data and reporting platform identified

Figure 2: GRC Realignment with Village Functions



Many of the actions in the framework have some complexity and do not fall neatly into a single category. It should be noted that the re-coding of GRC items relies on some discretion and it is possible that the data could shift between categories. Still, this realignment provides some important takeaways about the types of activities that are within the GRC Framework itself, as well as where there are certain gaps in functions relative to the framework.

One of the more interesting findings is the comparative amount of GRC actions that cannot be achieved alone by the Village and require participation by the community or external partnerships. More than a quarter (28.7%) of objectives and strategies in the GRC Framework can be categorized as External Collaboration and Public Relations activities. Although this category has the largest gap in terms of the number of activities identified in the staff report compared to total activities in the Framework, it is also the category with the most total actions taken by the Village. Achieving a higher percentage of these activities will take substantial commitment and capacity both within the Village and through a network of strategic partnerships.

Areas where there are particular strengths are Emergency Management, Forestry, and Stormwater Utility and Regulations. These areas had the highest proportion of GRC Framework items with action alignment. This does not mean that these objectives have been fully achieved, but do represent strengths where existing capacity can be leveraged. Emergency Management, which is a function that is critical for climate resilience and reducing climate related risks, was the only area where all GRC Framework related objectives and strategies had action alignment. The Village has a history of developing emergency operation plans and collaborating with DuPage County, such as with the NHMP. The Village’s Forestry program has also been active for nearly fifty years and has adopted a comprehensive manual for maintaining a healthy urban

canopy. The stormwater utility is a relatively newer program of the Village, but is one of a few in the region. The Village has also adopted stormwater regulations that exceed County baseline standards and are a prime example of a function that can influence sustainability at community level.

Two areas where there are noticeable gaps and weaknesses are Tracking and Reporting and Certifications and Accreditations. Historically, the Village has not had staff with specific technical knowledge that is needed to implement tracking and reporting related to sustainability. Data collection and reporting is often required to apply for and maintain specific certifications and accreditations, which comes with added costs and complexity. The addition of this capacity to the Village presents an opportunity to directly engage in these types of activities.

Another area where there is a relatively large gap is in the Policy and Planning category, though the GRC Framework items in the category are often the most complex and diverse. Planning efforts, such as the creation of the ESP is a process that can take more than a year, requiring significant staff time, public engagement efforts, and financial costs. Policy development can be equally time consuming to collect and analyze the appropriate information to be presented to Village Council, often requiring multiple discussions. There is also the potential for certain policies and discussions to create divisions within the community. While the items in this category often require substantial commitment and time, they also have the potential for effectuating change in the community. However, ensuring that the process is carried out in a way that balances costs and impacts to the Village and community is imperative. Forcing policy decisions that are believed to be impactful without developing consensus can be counterproductive to broader goal achievement. Developing strength in this category will take a concerted and conscious effort between staff, elected officials, and the community.

Key Takeaways

- **Context Needed.** The GRC Framework is a flexible qualitative tool that is intended to be adapted for the context of its members. By itself, the GRC Framework cannot be used to objectively measure the impact or progress of the Village's sustainability efforts. It is a useful means of coordinating efforts at a regional level and can serve as a basis for the ESP.
- **Comportment.** A 2023 staff report found that the Village's normal operations and past actions generally comport with the objectives and strategies in the GRC Framework. The GRC Framework categorized with strongest alignment were Land, Water, and Waste & Recycling which are traditional services and policy domains of local governments. Climate, Energy, and Sustainable Communities were areas with lesser alignment, but are also areas that have become more salient in recent years.
- **Operational Alignment.** Reorganization of the objectives and strategies in the GRC Framework to better align with the functions of the Village revealed that a substantial portion of the Framework relies on external collaboration or using public relations strategies to educate, advocate, or promote certain actions within the community. This organization also revealed that Emergency Management, Urban Forestry, and Stormwater were functions with high alignment to the GRC Framework.
- **Track and External Validation.** The reorganization also revealed that reporting and earning specific sustainability accreditations were areas of weakness. Tracking, reporting, and maintaining accreditations can be complex and time consuming, but the Village has added capacity that would allow these types of activities to be achieved.
- **Policy and Planning.** There are examples of the Village using its policymaking authority to effectuate more sustainable outcomes in the community, such as stormwater regulations and building codes. There are several other policy areas within the GRC Framework that would require additional policy considerations to achieve the objectives and strategies in the Framework.

SECTION 5

EXISTING CONDITIONS ANALYSIS

Downers Grove's character is defined by its diverse population, cohesiveness, variety of land uses and businesses, and open space and parks. But it may be most defined by its trees. Historically, the predominant land use has been residential, in particular, single-family residential. Over time, these homes have been nestled into the existing trees that gave Downers Grove its name. Founded in 1832 by Pierce Downer, a farmer who traveled to Illinois from Rutland, New York, but was originally from Vermont, Downers Grove was named for the lush grove of old-growth bur oak (*Quercus macrocarpa*) trees surrounding the Village at that time. These trees stood out from the expansive savanna landscape.

Today, Downers Grove is a bustling Village with a central downtown core of businesses, an active rail line, high-performing schools, and a network of community groups that actively promote sustainability in the community such as Greener Grove, Pierce Downer's Heritage Alliance (PDHA), The Conservation Foundation, and the Junior Woman's Club, to name a few.

In particular, single-family homes make up the majority of land area in the Village. The attributes that make Downers Grove such an attractive place to live is also increasing homeownership, business development, and increased traffic, all of which are stressors on the Village's natural resources and environment.

This section provides information on the existing land uses, water, natural resources, the built environment, and stressors applied to the Village's resources. The information was obtained from a variety of resources and is supplemented with visual assessments.

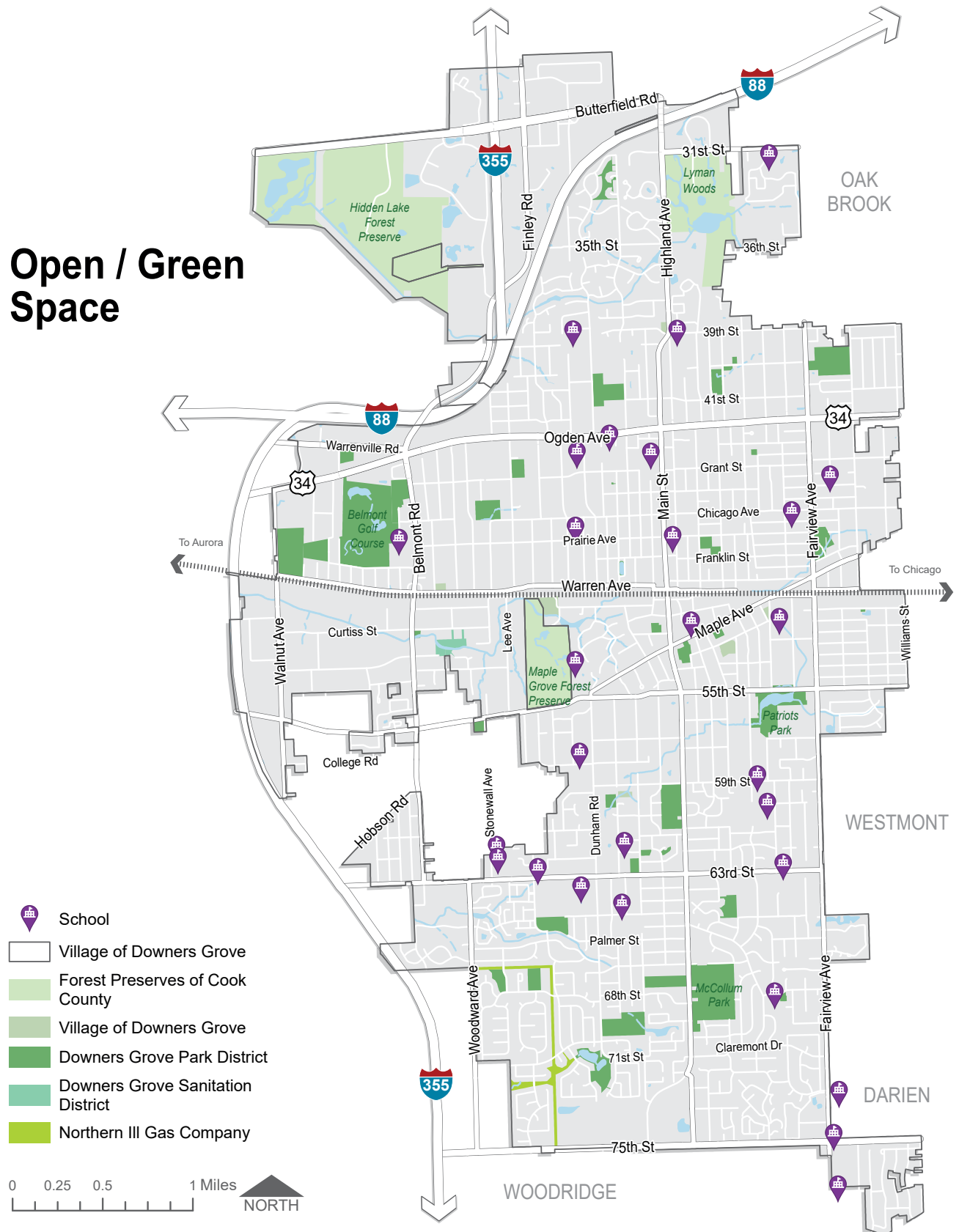
NATURAL RESOURCES

The structure and function of the Village's natural communities, and the species they support, can be a much-needed system for any city's environmental health. They provide ecological services that help maintain water quality, abate flood water, support pollinator species, improve air quality, and reduce urban heat island effects. Within Downers Grove is a varied landscape of rich environmental resources - prairies, woodlands, lakes, wetlands, parks, and open space, which all support the flora and fauna (i.e., biodiversity) within Downers Grove. The diversity of the natural landscapes and recreational opportunities also contribute to the Village's quality of life and vitality by encompassing miles of bicycle lanes, bicycle routes, trails, and paths. There is also a rich cultural heritage that is the namesake of Downers Grove.

Understanding the location, quality, and function of these resources is important to protecting them from direct and indirect impacts, which are often very difficult or costly to correct after they have occurred. Supportive planning, coupled with appropriate land development standards and regulations, can significantly reduce the impact of development and other activities on natural resources. These approaches can help guide future land development patterns and inform preservation strategies and priorities for the most vulnerable and valuable resources.

Within Downers Grove, there is approximately 1,042 acres of open space, which is held by the Downers Grove Park District, Downers Grove Sanitary District, Northern Illinois Gas Company, Village of Downers Grove, and the Forest Preserve District of DuPage County. The largest natural area is Lyman Woods (150 acres) and is owned by the Village, Downers Grove Park District, and Forest Preserve District of DuPage County in a three-party partnership. Composed of oak woodlands, prairie, and marsh habitats, the varied ecosystems support over 300 species of native plants. Since it was purchased by the Lyman family in 1839, the natural areas have served as one of a few examples of pre-settlement landscapes that dominated the Downers Grove area.

Open / Green Space



Woodland and Forests

For this analysis, woodlands and forests are defined as areas with greater than 50% tree canopy cover and includes upland forest, floodplain forest, flatwoods, and oak and maple dominated woodlands.

A driving survey and local knowledge of the area indicate that larger trees in woodland tracts are sugar maple (*Acer saccharum*), white oak (*Quercus alba*) and bur oak (*Quercus macrocarpa*). Other species include cherry (*Prunus* spp.), hickory (*Carya* spp.), and elm (*Ulmus* spp.). The value of woodland tracts are in the food, shelter, and habitat for migratory birds they provide, including Neotropical migrants and short distance (temperate) migrants. Because woodland habitat is important for bats (Order Chiroptera), alterations to forest structure may affect how bats utilize forest fragments in urban environments as well. Unfortunately, invasive species such as European buckthorn (*Rhamnus cathartica*) and honeysuckle (*Lonicera* spp.) are present in almost all tracts and have negatively impacted the integrity of these natural areas by crowding and/or shading out native flora.

Prairies

For this analysis, prairies are defined as areas with vegetation cover consisting of native grasses and forbs. Soil moisture plays a significant role in dictating whether a prairie is considered dry, mesic, or wet. Sunlight is also an important factor in maintaining biodiversity and health of the system. These landscapes are vital for pollinators and numerous fauna but are being overrun with non-native species due to a lack of prescribed burning and stewardship.



Wetlands

For this analysis, the variety of wetlands – fens, sedge meadows, seeps, and bogs – have been combined. Typically, wetlands are areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support water-loving vegetation, which is adapted for life in saturated soil. Associated hydric soils, while not an obvious element of the natural landscape, are important because they tend to retain water and thus support rich biological communities within wetlands. Whether natural or man-made, wetlands provide much needed habitat for fish and wildlife, retain rainwater, reduce flooding, and filter pollution from stormwater run-off. Similar to findings for woodlands and prairies, a lack of stewardship combined with poor water quality has relegated these systems to cattails (*Typha* spp.), common reed (*Phragmites* spp.), and reed canary grass (*Phalaris arundinacea*).



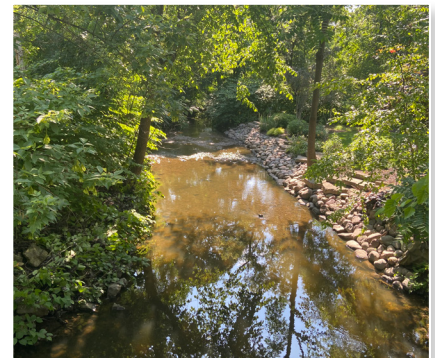
Active and Passive Recreational Landscapes

Within the Village, there are numerous parks of varying sizes that offer active recreational uses such as baseball fields, soccer fields, basketball courts, fitness areas, and in-line skating, to name a few. Passive recreation is also incorporated into many of the parks and includes trails for hiking and bicycling, picnic areas with shelters, gardens, water features, and lawns for seating areas. The majority of active and passive recreation areas are held by the Downers Grove Park District, which has a jurisdictional planning area of nearly 16 square miles, includes 46 parks, facilities and a 9-hole golf course, for a total of almost 372 acres within Downers Grove. This total does not include the golf course (90 acres) nor Lyman Woods (150 acres).

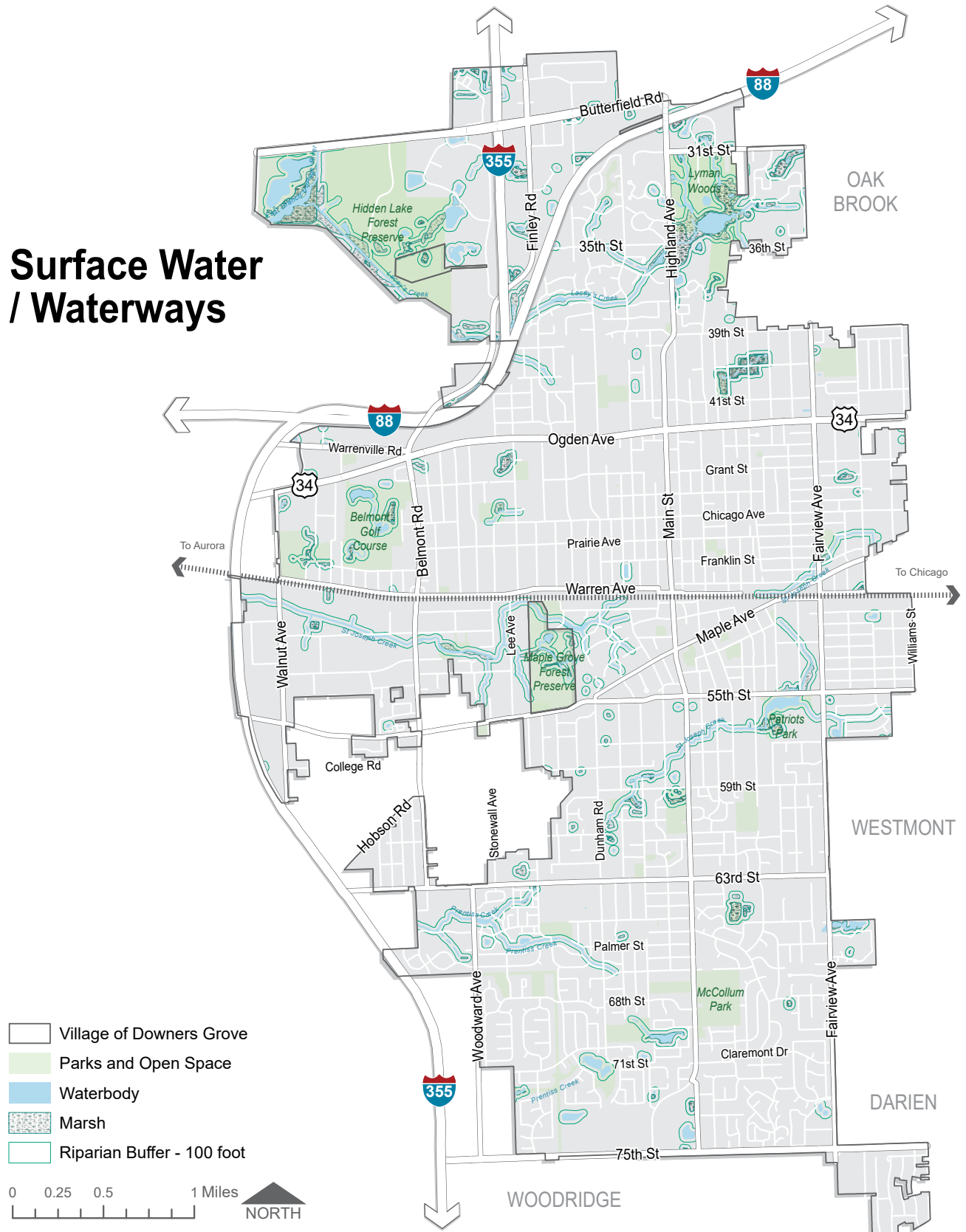


Surface Water / Waterways

Lakes, ponds, rivers, and streams not only store and convey rain and snowmelt runoff, they provide important habitat for plants, aquatic life, and animals, while also providing passive recreational activities and scenic beauty. Within Downers Grove, lakes and ponds range in size from less than one acre to several acres. The largest waterbody in the Village is Barth Pond (5.8 acres). When combined, lakes and ponds cover nearly 155 acres within the Village. The two largest waterways in the Village are Saint Joseph Creek and Lacey Creek, both of which are oftentimes piped below ground and emerge again in private residents' property. Both creeks are fed by several unnamed tributaries that are also visible at times and piped underground to flow below roadways. Within Village limits, there are 19.5 miles of named and unnamed streams.



Surface Water / Waterways



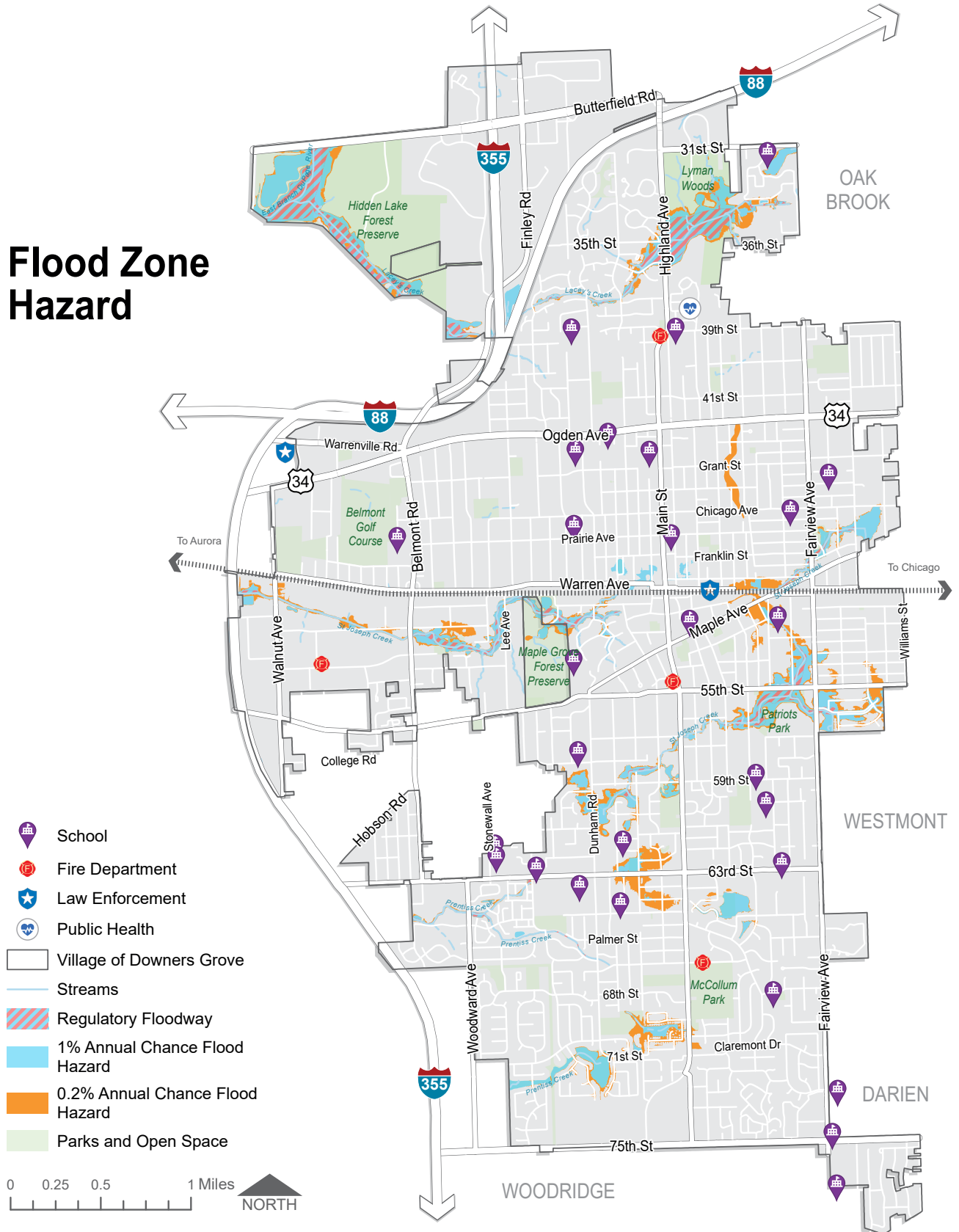
Floodplains and Floodways

Floodplains cannot always be seen in the landscape, but they are important areas from a natural resource, stream protection, riparian habitat, and flood control perspective. During heavy rain events, floodplains store and slow down floodwater, capture sediment and other pollutants, and help reduce flooding impacts.

Often associated with floodplains are riparian buffers, which are important areas that transition floodplains to upland landscapes and are regulated by the Village and DuPage County. The Village also regulates Localized Poor Drainage Areas (LPDA). The Village identified these areas as locations prone to flooding due to topography. Stormwater runoff that cannot infiltrate the ground tends to accumulate in LPDAs, creating flooding or standing water. Although LPDAs are not recognized by FEMA, Village codes regulate both LPDAs and floodplains similarly. And because LPDAs are prone to flooding, the Village regulates construction in these areas to ensure that new structures do not contribute to existing issues.



Flood Zone Hazard



Impermeable Surfaces

Impermeable surfaces include roof tops, parking lots, roads, sidewalks, and other surfaces that have a low ability to infiltrate water. The heaviest concentration of impermeable surfaces is in the Downtown Core, along the Ogden Avenue Corridor, and in the northwest corner of the Village where a high concentration of businesses occur. As a whole, the Village has approximately 4,000 acres of impermeable cover. Research has shown that impervious surfaces in excess of 10% of a watershed's area can have a negative impact on ecosystem health and quality, particularly streams (U.S. Geological Survey).



Impermeable Surfaces



Canopy Cover

Within the residential areas of Downers Grove, especially the older and more established neighborhoods, there is a dense and robust tree canopy cover along Village streets and on private properties. As you move into business districts, the tree canopy is much reduced, increasing exposure to the sun and urban heat island effect. There are also significant bur oak trees (*Quercus macrocarpa*) in many areas along the street, which herald back to the founding of Downers Grove and its namesake – Frederick Grove.

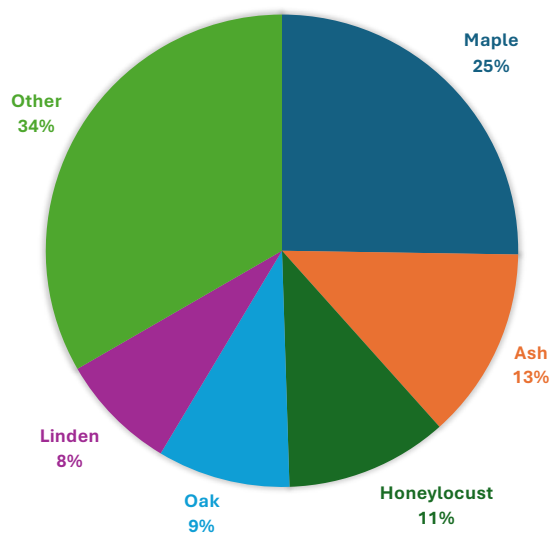
A general inventory of canopy tree types completed by the Chicago Region Trees Initiative (CRTI) found that in Downers Grove the most abundant genus by number of trees is maple. The study also found that five genus of trees (maple, ash, honeylocust, oak, and linden) make up two thirds of Downers Grove’s urban canopy. With low diversity in tree species, a disease (Dutch Elm Disease) or insect (Emerald Ash Borer) could have serious consequences.

Compared to the broader region, the biodiversity of Downers Grove’s urban canopy is slightly above average, though it does have a higher percentage of oak trees. Downers Grove also has a more mature urban canopy. Compared to the region, Downers Grove has fewer trees with a diameter less than 11 inches and more trees with diameters between 11 and 30 inches. Downers Grove also has the highest tree coverage compared to neighboring communities, with 36% of the community being classified as canopy covered.

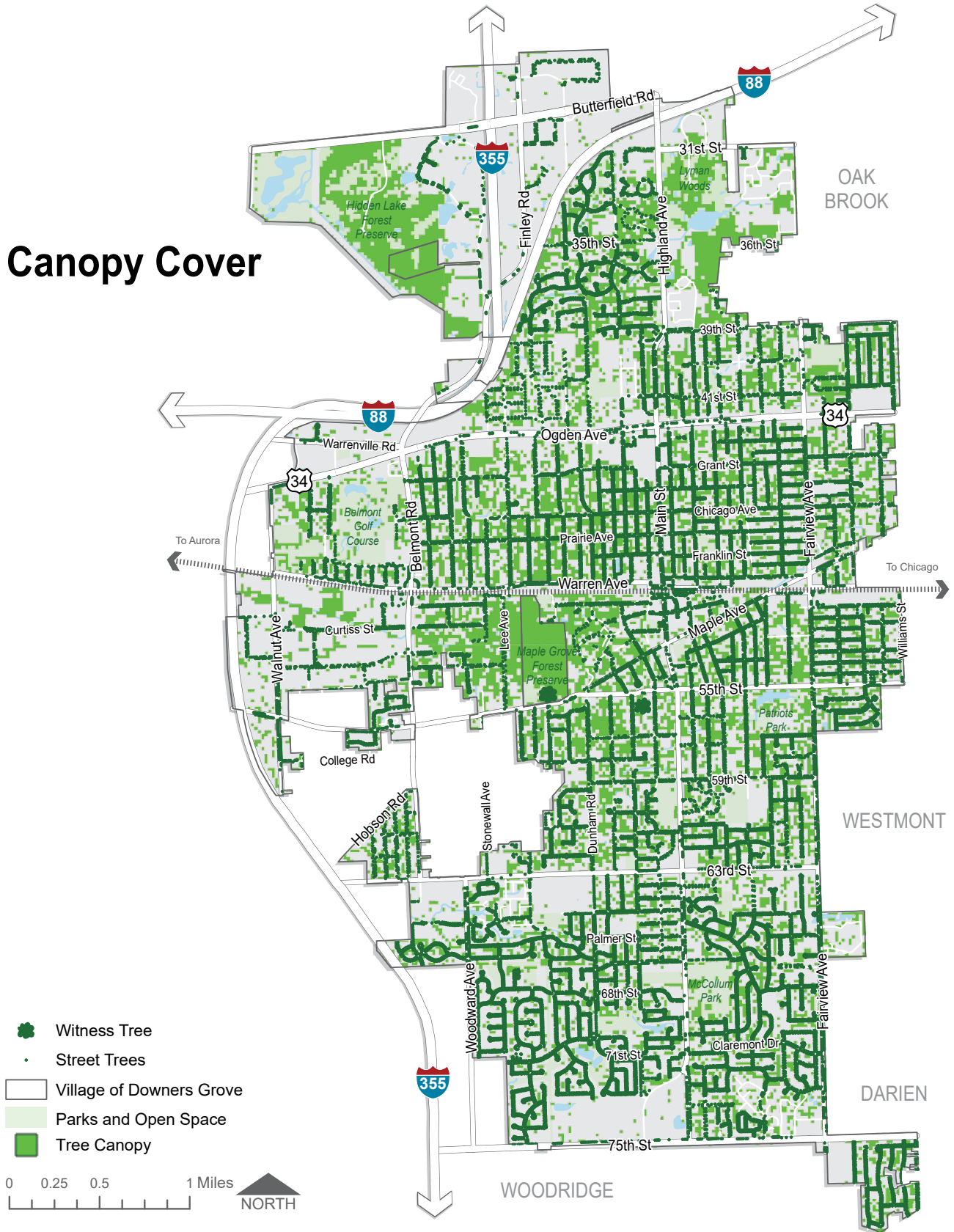
The Village also maintains a significant number of parkway trees, with more than 23,000 individual parkway trees being indexed through the Village’s forestry program. The Village’s forestry program began in the 1970s as a response to major losses of elm trees from Dutch Elm Disease. Since then, the Village has planted more than 15,000 trees. There are a total of 60 different genus of parkway trees. The Village’s stock of parkway trees largely mirror the biodiversity of the community as a whole with maples, honeylocust, oak, linden, and ash comprising 65.6% of trees.

Included on the map are two locations where witness trees have been known to exist within Downers Grove. In the early 1800s, surveyors used “bearing trees,” commonly known as a type of witness tree, as landmarks or survey points to denote property corners. Quite often these trees were oaks because they were expected to live for decades. Within Maple Grove Forest Preserve there are two Northern red oak (*Quercus rubra*) both noted as still present. A third tree, a bur oak, is located on private property and is also listed as still present. Of the thirty or so trees shown on the active map created by the Chicago Region Trees Initiative, almost all are listed as Tree is no longer present or Status has not been evaluated (<https://chicagorti.org/program/witness-trees/>).

CANOPY TREE TYPES



Canopy Cover



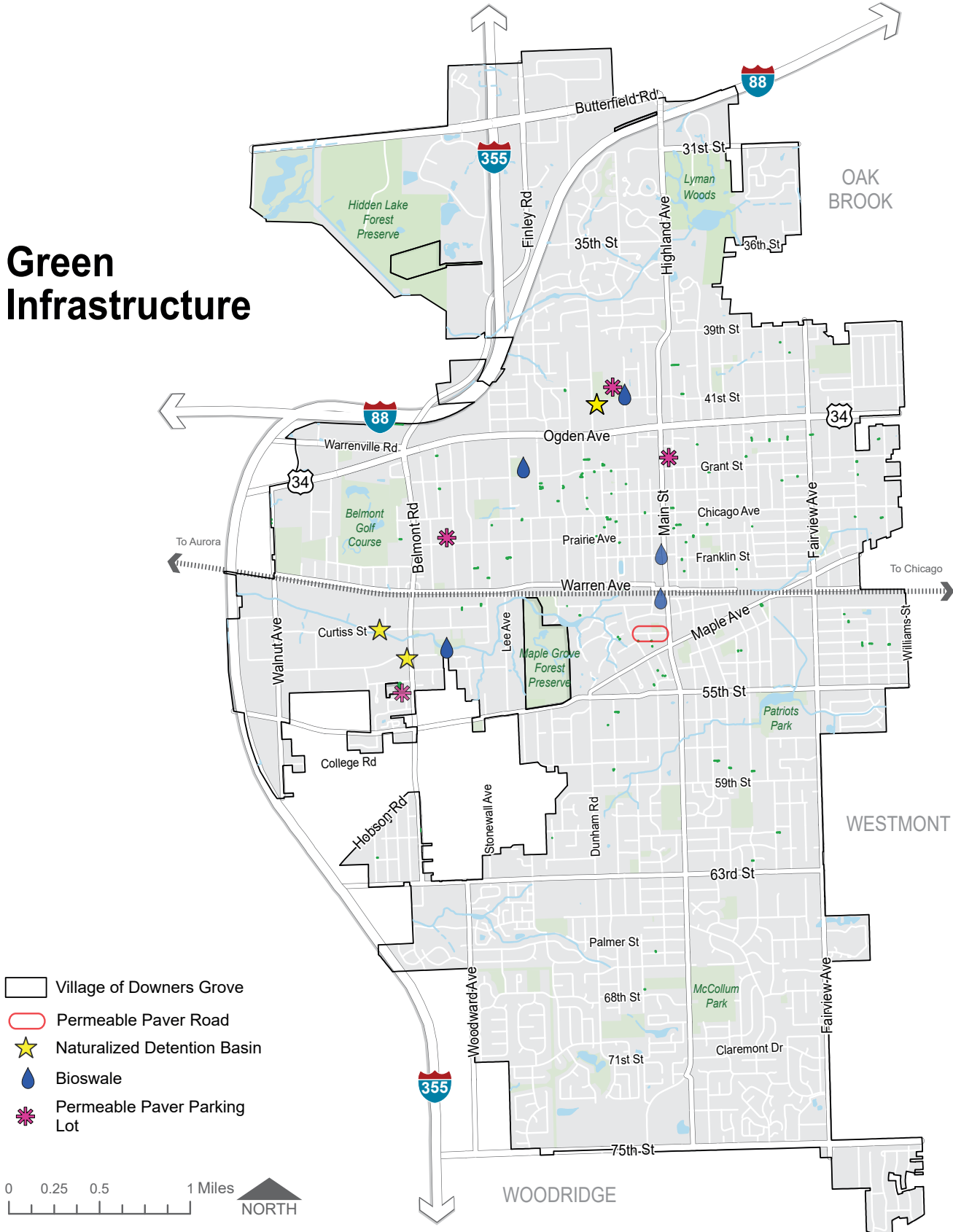
Green Infrastructure

Downers Grove, where possible, is employing and encouraging green infrastructure strategies to manage stormwater runoff. Simply put, green infrastructure helps filter and absorb stormwater where it falls. In 2019, the United States Congress enacted the Water Infrastructure Improvement Act, which defines green infrastructure as “the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspire stormwater and reduce flows to sewer systems or to surface waters.”

In Downers Grove, strategies include the use of bioswales, rain gardens, rain barrels, drywells, permeable pavers and pavements, and the use of native plants. The urban canopy is also an important green infrastructure tool by absorbing stormwater in their leaves and branches. There are numerous benefits derived from such practices including: improved air and water quality; improved wildlife and pollinator habitat; reduced erosion issues; and increased water conservation. Solutions can also be a strong ally for residents to help improve water quality, provide pollinator habitat, and support water conservation initiatives.



Green Infrastructure



Solid Waste and Recycling

Solid waste and most recycling pickup is conducted by Republic Services for the Village. This includes curbside solid waste services, and the collection of refuse, yard waste, and certain material recycling. For Household Hazardous Waste and Electronic Recycling, residents are able to take items to the Environmental Collection Campus at 156 Fort Hill Dr. in Naperville. Residential waste accounts for approximately 28% of the overall municipal waste generated by the County, commercial waste amounts to 52%, and construction and demolition debris the remaining 20%. Because of landfill closures over the last decade or so, waste from DuPage County must be transported significant distances to reach an out-of-county landfill. Private waste haulers, such as Republic Services, select landfills based on market factors (including transportation distances and disposal prices).

An important part of the collection system, and especially the recycling program, is to keep items such as food scraps, egg shells, grass clippings and other yard waste out of landfills where they take up space and release methane, a potent greenhouse gas.

Another important collection system is the Downers Grove Sanitary District's (DGSD) partnership with SCARCE, a local environmental non-profit organization. The DGSD is a permanent collection site for a cooking oil recycling program. Customers and residents in the surrounding area are encouraged to recycle their used cooking oil instead of pouring it down the drain or disposing of it in the garbage.

Table 11: Tons of Residential Waste

Year	Refuse	Recycles	Yard Waste
2019	12,059.8	5,376.42	1,674.22
2020	12,660.87	5,805.17	1,996.41
2021	12,422.79	5,338.38	1,938.26
2022	12,282.59	5,144.84	1,770.65
2023	11,718.67	4,952.99	1,729.38

ISSUES OF CONCERN

Land development often has substantial direct and indirect negative impacts on the quality and quantity of natural resources, open space, and quality of life. Quite often, the benefits of economic development (jobs, housing, and commerce) are viewed as important to long-term community viability and are mutually exclusive from land health and the environment. The benefits of environmental protection typically are not assigned an economic value, although they are critically important to the health and quality of life in the Village. This section discusses several issues of concern that are affecting trees, natural areas, waterways, and open space.

Fragmentation

Habitat size and connectivity improves the long-term health and survival of species and ecological communities; fragmentation of natural areas through the development of roads, houses, or businesses is a significant detriment to their integrity. The smaller and less connected to other habitats a natural area is, the fewer species it will support, which reduces biodiversity, reduces survival of species, and impacts ecosystem structure and function. Fragmentation can also apply to aquatic habitats. Although water is continuous in a stream or river, both physical and chemical changes can act as barriers that divide streams into smaller pieces of habitat, thus decreasing biodiversity.

Urban Runoff

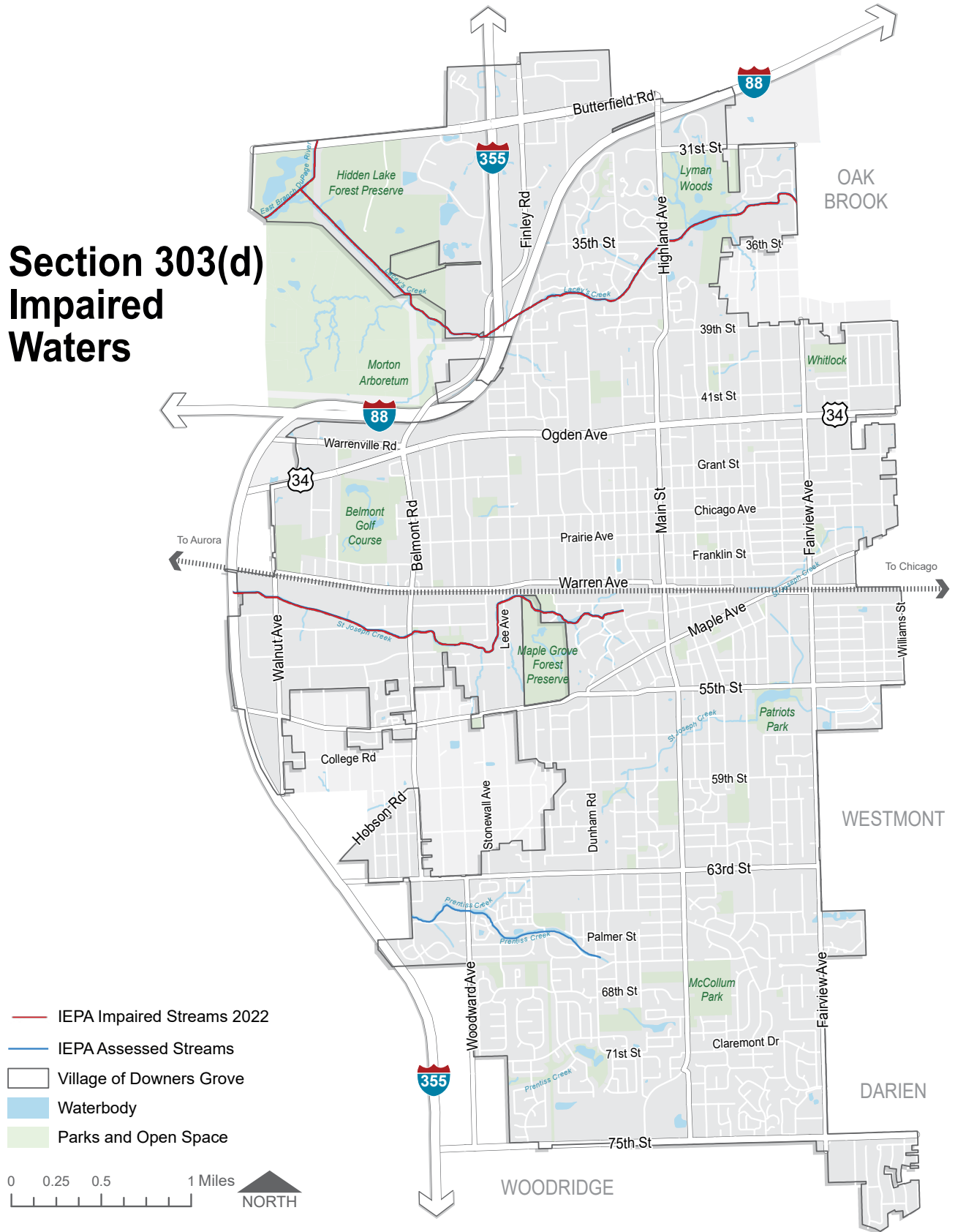
Studies by the USEPA, IDNR, and others have found that urban runoff from impervious surfaces carries nutrients, toxins, heavy metals, pesticides, and other pollutants into waterways where they damage natural systems. Furthermore, impervious surfaces have been linked to urban heat island effects, habitat fragmentation, and flooding, which are common issues in Downers Grove and most all surrounding municipalities. Over the years, because of the signing of the federal Clean Water Act (CWA) in 1972, water quality has improved greatly, primarily through regulation of point source discharges. Although great strides have been made in restoring state waters, there are still degraded lakes, streams, and rivers that need attention. Restoring their quality is crucial in maintaining a healthy environment and ensuring the sustainability of these waters for all to use and enjoy.

Winter season road salt is also a serious issue impacting local waterways and can travel hundreds of feet from roads via airborne spray (and much farther via streams and waterways). Road salt is a highly harmful pollutant to plants, animals, and habitat. Salt also desiccates new plant growth and can often result in plant and fish mortality.

Within Downers Grove, there are two streams that have been identified as impaired by the Illinois Integrated Water Quality Report and Section 303(d) list, they are St. Joseph Creek and Lacey Creek. The East Branch of the DuPage River is also listed but only a small section passes through Downers Grove.



Section 303(d) Impaired Waters

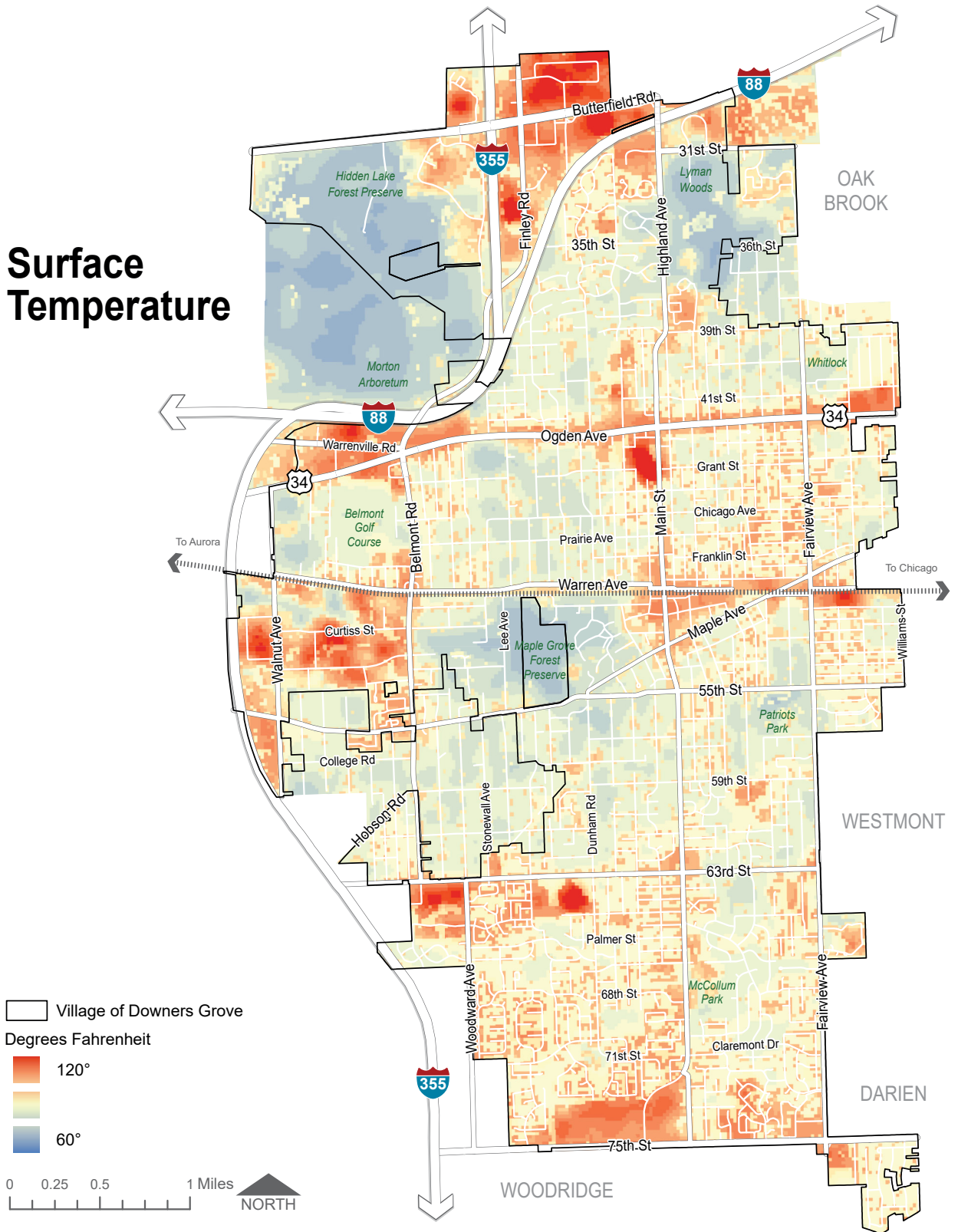


Urban Heat Island

Due to the ability of buildings, parking lots, and pavements to absorb the sun's energy and release it, a phenomenon known as urban heat island, a number of areas within Downers Grove are seeing higher summer temperatures where there is a reduction of shade from trees. The Surface Temperature map shows higher temperatures within Downers Grove where there is a lower density of tree canopy due to increased development.



Surface Temperature



De-watering

Siphoning off water for urban development purposes can lower water tables and negatively impact wetlands, ephemeral ponds, sedge meadows, and wet prairies. Sometimes well away from the source of work. The availability of groundwater and the hydrology that feeds groundwater and surface water sources can change water table levels over time, which can have long-lasting impacts that reduce the quality and integrity of both terrestrial and aquatic habitats in the Village.

Invasive Species

Invasive species, most of which are not native to Downers Grove or the Midwest, have an adverse impact on native flora and fauna in both natural areas, open space, and even residential neighborhoods. In many cases, the negative effect is amplified by the disruption of natural processes in natural habitats, such as buckthorn (*Rhamnus cathartica*) and honeysuckle (*Lonicera japonica*) in woodlands; common reed (*Phragmites australis*) and purple loosestrife (*Lythrum salicaria*) in wetlands; and sweet yellow clover (*Melilotus officinalis*) and flowering pear trees (*Pyrus calleryana* spp.) in prairies. Quite often, residents plant, without knowing it, non-native trees and shrubs in their landscapes, which can be disruptive since many of these plants escape into natural areas such as Norway maple (*Acer platanoides*) and burning bush (*Euonymus alatus*).

Invasive species also have serious impacts in residential neighborhoods by devastating street trees such as the Emerald Ash Borer on ash trees (*Fraxinus* spp.) and Dutch elm disease on the American elm (*Ulmus americana*). In the short-term, control and elimination of invasive exotic species before they become widespread is essential. In the longer-term, preventing future introductions of new exotic species will be important to safeguard the urban canopy, waterways, and natural systems.

Ornamental Landscapes

It is not hard to see that aesthetic values in residential neighborhoods and the business district are essential to almost everyone that lives in Downers Grove; residents and business owners want to be proud of their neighborhood and downtown core. But aesthetics can oftentimes come with a negative price for the environment since many of the ornamental plants put into the landscape have no value to insects and pollinator species. In effect, these landscapes have created a food desert for thousands of pollinator species that once inhabited the area. Landscape care can also be a detriment to native species by continually applying lawn fertilizers and nutrients such as phosphorus (P), potassium (K), and nitrogen (N) to landscapes.



Key Takeaways

- **Natural Areas.** Downers Grove has a diverse array of natural areas that provide aesthetic value, quality of life, and passive recreational opportunities, but most are not being maintained properly and are losing biodiversity. Many of the woodlands are devoid of mid- and late-season native groundfloor species due to an overabundance of trees and thus heavy shade.
- **Open Space.** There are significant opportunities to be engaged with active and passive recreation but most of the facilities are owned by the Park District. Conversations about environmental protections will need to include the District since they own the majority of parks and open space.
- **Surface Water and Waterways.** Many of the waterways are seeing pressure from urban uses, runoff, and over-shading by trees, which leads to erosion issues and sloughing of the banks. Because many of the smaller unnamed tributaries are piped, their structure and quality are compromised. During site investigations of waterways, numerous sump pump discharges into waterways were found, most of them eroding soils at the point of discharge.
- **Surface Water and Waterways.** Many of the open water ponds in the Village are seeing algal blooms, reduced biological activity and species, and decreased aesthetic values. Quite often, a fountain is needed to provide oxygen for the water, or a continuous edge of rock is used to keep weeds at bay, neither of which encourage biodiversity.
- **Impermeable Surfaces.** Although necessary for automobile traffic, impermeable surfaces, in particular asphalt parking lots, are the dominant landscape feature across the Ogden Avenue corridor. Within the Downtown Core, parking is a premium and needed to support businesses and restaurants, which adds to the urban heat island effect and increased stormwater runoff.
- **Canopy Cover.** There is a well-defined overstory canopy within the residential neighborhoods, creating shade and human scale along many roads, walkways, and trails. However, many of the noted trees in front yards were Norway maples (*Acer platanoides*), a non-native and highly invasive species that has escaped into woodlands.
- **Canopy Cover.** During site reviews, there were a number of significant bur oak trees found in the older residential neighborhoods.
- **Green Infrastructure.** The Village has a number of programs and tutorials about the importance of green infrastructure and natural stormwater management.
- **Solid Waste and Recycling.** There is sufficient landfill capacity to meet the current needs of DuPage County. But because the County is reliant on out-of-county disposal facilities, the capacity situation could change quickly.

SECTION 6

GREEN HOUSE GAS INVENTORY FOR DOWNERS GROVE

As the negative effects of climate change have come into sharper focus, there has been a greater effort to measure our individual and collective impacts. This effort has led to international standards of accounting for GHG emissions. Different methodologies and standards have been developed, including standards for measuring the GHG emissions of both organizations and communities. The exercise of measuring emissions related to the functions of an organization or at a community scale is known as a GHG inventory. GHG inventories have become a critical tool in trying to reduce future emissions and limit the impacts of climate change. They provide both a valuable emissions baseline, a tool to identify target areas for reductions, and means of tracking the relative contributions of efforts to reduce emissions.

The primary measurement in GHG inventories is MTCO₂e, or Metric Tons of Carbon Dioxide Equivalent. The bulk of GHG volume is from carbon dioxide (CO₂), but there are also more volatile gasses such as methane (CH₄), nitrous oxide (NO₂), and other less common gasses. The warming potential of each of these gasses is converted into the equivalent of CO₂. For example, 1 kg of CH₄ is equivalent to 28 kg of CO₂, and 1 kg of NO₂ is equivalent to 265 kg of CO₂. These different GHGs are accounted for and converted into MTCO₂e as a standard measurement.

The *Greenhouse Gas Protocol*, an organization that has developed shared standards of GHG accounting organizes the sources of emissions at a community level as falling into three categories:

Table 12: Summary of Emission Scopes

	Definition	Example Activities in Scope
Scope 1	GHG emissions from sources located within the city boundary	Consumption of natural gas, fuel consumption in vehicles
Scope 2	GHG emissions occurring as a consequence of the use of grid-supplied electricity, heat, steam and/or cooling within the city boundary	Consumption of electricity
Scope 3	All other GHG emissions that occur outside the city boundary as a result of activities taking place within the city boundary	Transportation and emissions associated with supply chain of goods, carbon sequestration from urban forest

This section provides data from two GHG inventories. The first is a community-level GHG inventory for Downers Grove. This inventory was conducted by the *Chicago Metropolitan Agency for Planning (CMAP) using 2019 data as part of a regional inventory*. Using this data, a profile of the community’s sources of GHGs will be provided, as well as a comparison to other DuPage County communities. The CMAP inventories only include Scope 1 and Scope 2 emissions from CO2, CH4, and NO2.

The second inventory is specific to Village operations and was compiled using the *US EPA’s Local Greenhouse Gas Inventory Tool*. This tool uses the Greenhouse Gas Protocol standards but is designed specifically for local government organizations. This inventory relies on aggregated data from 2023 and only includes Scope 1 and Scope 2 emissions data. A particular challenge with including Scope 3 data is that there is currently no consensus about the methodologies and types of data that should be included in Scope 3. Scope 3 emissions, especially the inclusion of those produced in the supply chains of goods and services, are complex. A choice of how to distribute supply chain emissions must also be made and there is debate regarding this distribution towards producers or consumers. As such, Scope 3 emissions were not included in the Village’s GHG inventory, but certain and specific elements may be investigated further in the future – especially the net value of carbon sequestration from the Village’s urban forest.

Community GHG Inventory

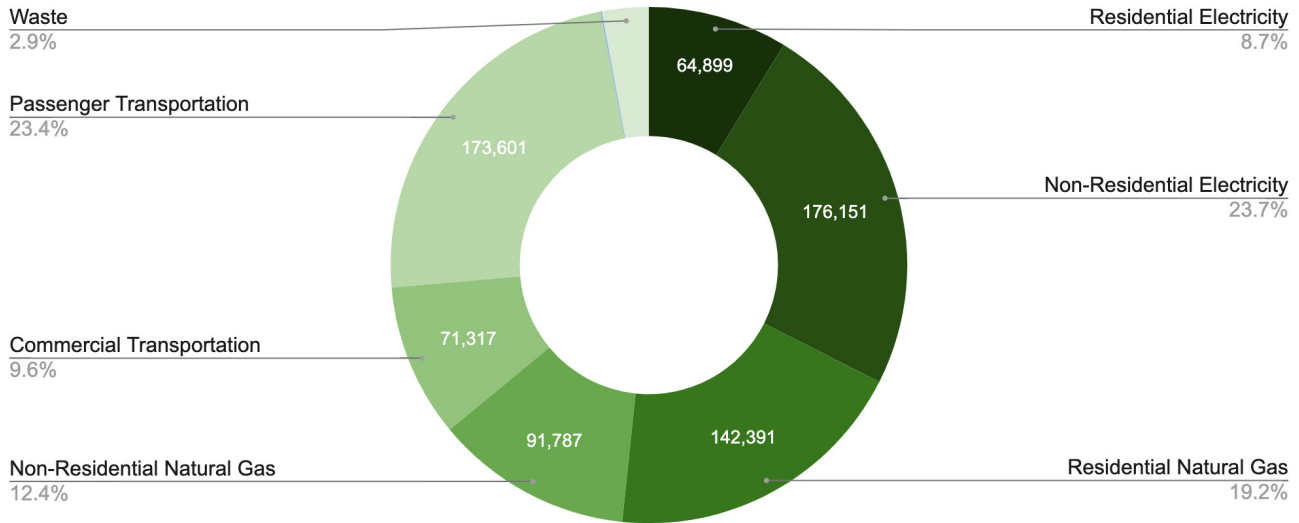
Energy consumption (electricity and natural gas) associated with buildings (stationary energy consumption) make up 64% of the emissions for Downers Grove, which is similar to the 68.3% for the entire Chicago metropolitan region. This is split evenly between electricity consumption and natural gas consumption, though there are differences between residential and non-residential consumption in those categories. Non-residential buildings such as businesses (office complexes, manufacturing, retail, etc.), government (municipal,

Table 13: Sources of Community GHG Emissions

Source of GHG Emissions	MTCO2e
Electricity: Residential	64,899
Electricity: Non-Residential	176,151
Electricity Sub-Total	241,050
Natural Gas: Residential	142,391
Natural Gas: Non-Residential	91,787
Natural Gas Sub-Total	234,178
On-Road Transportation: Commercial	71,317
On-Road Transportation: Passenger	173,601
On-Road Transportation: Public	537
Transportation Sub-Total	245,455
Waste	21,810
Total GHG Emissions	742,493

schools, etc.), and institutional (Good Samaritan, Midwestern, etc.) are larger electricity consumers and account for the single largest source of emission in any sub-category. Residential buildings consume about a third of the electricity, but also consume 50% more natural gas than non-residential buildings.

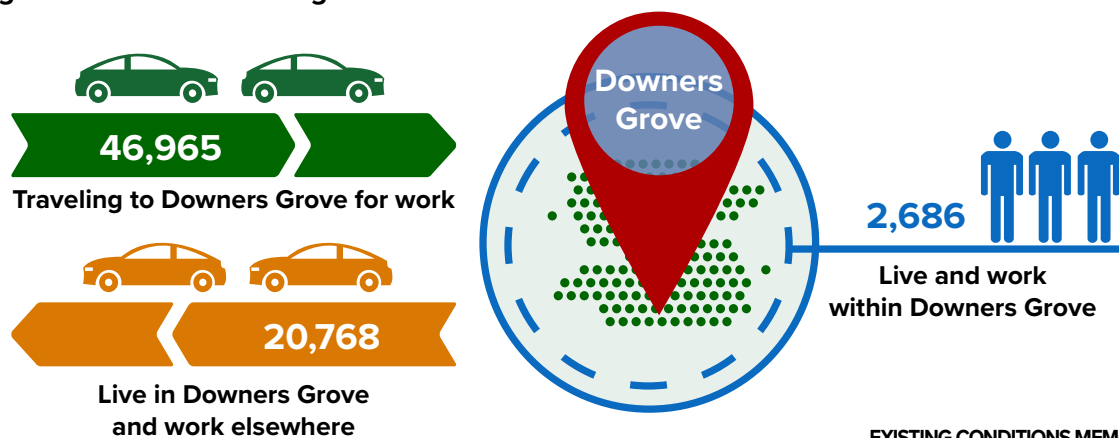
Figure 4: Sources of Community GHG Emissions



The emissions from electricity consumption are tied directly to how electricity is produced. Within the US, there are different regional infrastructure networks, known as grids, that connect producers of electricity to consumers of electricity. Downers Grove is within the RFCW eGRID. The majority of electricity produced in RFCW is from natural gas (32%) and coal (31%). The next largest source of electricity is from nuclear, which is considered a zero-carbon emission source, but has other ecological impacts. Only 6% of electricity in RFCW comes from wind, and only 0.5% comes from solar. This energy profile results in the production of 1,000 pounds of carbon dioxide per megawatt hour produced. Decarbonizing sources of electricity has been identified as the single most impactful strategy for reducing GHGs in the Climate Action Plan for the Chicago region.

The sub-category with the second largest source of emissions is passenger vehicles which account for 23.4% of total emissions. This category of emissions is largely driven by a high number of work commuters, 80% of which drive alone. Below is a breakdown of 2019 commuting patterns that indicate 67,733 commuters are coming to or leaving Downers Grove for work. This produces a significant number of VMT in addition to the regular commuting patterns within the community. It should be noted that commuting patterns for work have changed substantially since 2019 with the rise of work from home. In 2022, 21% of Downers Grove residents reported partial or full teleworking. This is likely to have made a significant decrease in transportation related emissions, as well as the growing popularity of electric vehicles. An updated community GHG inventory will shed light on the impact of these two changing patterns, once data is available.

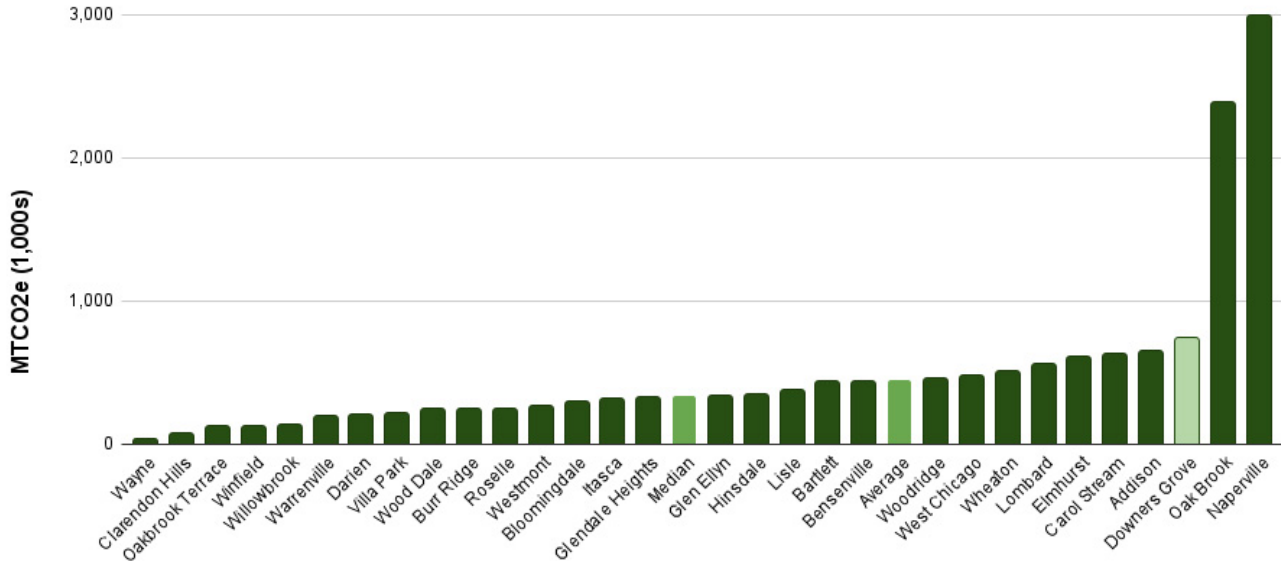
Figure 5: 2019 Commuting Patterns



Comparison with Other DuPage Communities

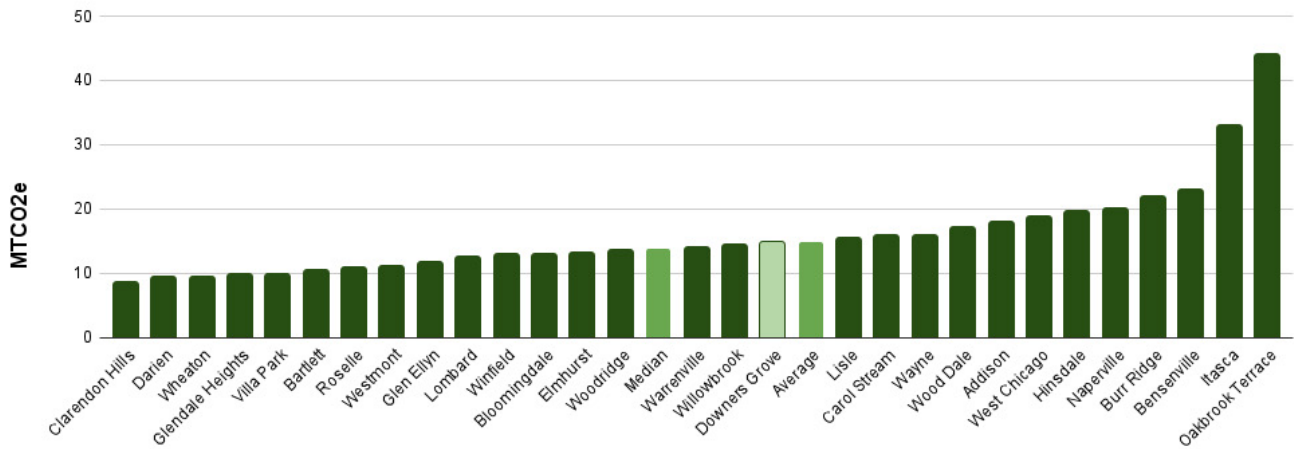
When comparing the total GHG emissions in DuPage County, Downers Grove produces the third largest amount of total GHGs of any community, though it is significantly less than Naperville and Oak Brook which are responsible for more than a third of the total emissions in the county. Downers Grove is also the third most populated community in the county, though total emissions are greatly influenced by the concentration of commercial and industrial buildings as well as by the total population.

Figure 6: Total Community GHG Emissions in DuPage County



Another useful comparison besides total emissions is the emissions per capita. In 2019 Downers Grove had a per capita emissions of 14.78 MTCO₂e, which is exactly equal to the average for the United States in 2019. Compared to other DuPage County communities, Downers Grove falls between the average (14.95) and median (13.8).

Figure 7: GHG Emissions Per Capita in DuPage County



One potential factor that can skew the per capita measure of emissions is the number of non-residential buildings compared to the population. The chart below provides an alternative comparison of only residential energy consumption per household. Again, Downers Grove falls between the average and median values for DuPage County. One consideration here is that the emissions per household is associated with median household income (MHI). Downers Grove has seen its MHI increase from \$94,893 in 2019 to \$115,461 in 2022. The number of households with incomes in excess of \$150,000 has increased 117% since 2010. As Downers Grove becomes wealthier, it is possible that household energy consumption and the associated emissions will also increase.

Figure 8: Household Energy Emissions in DuPage County

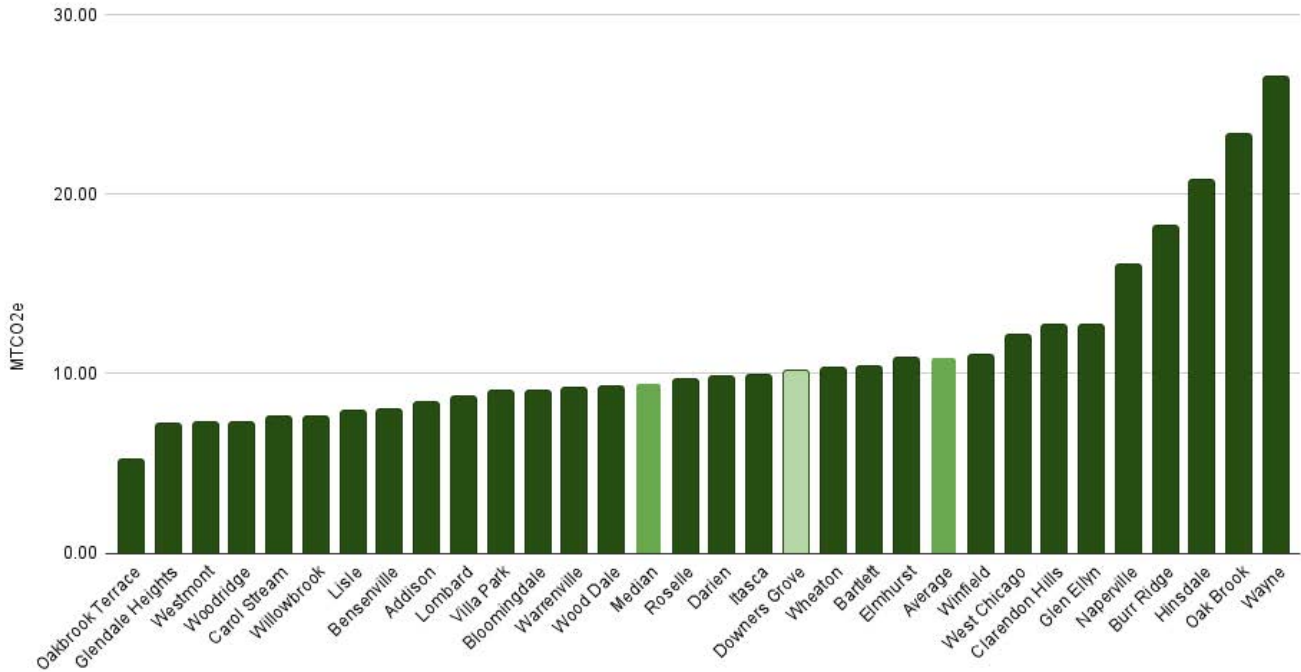
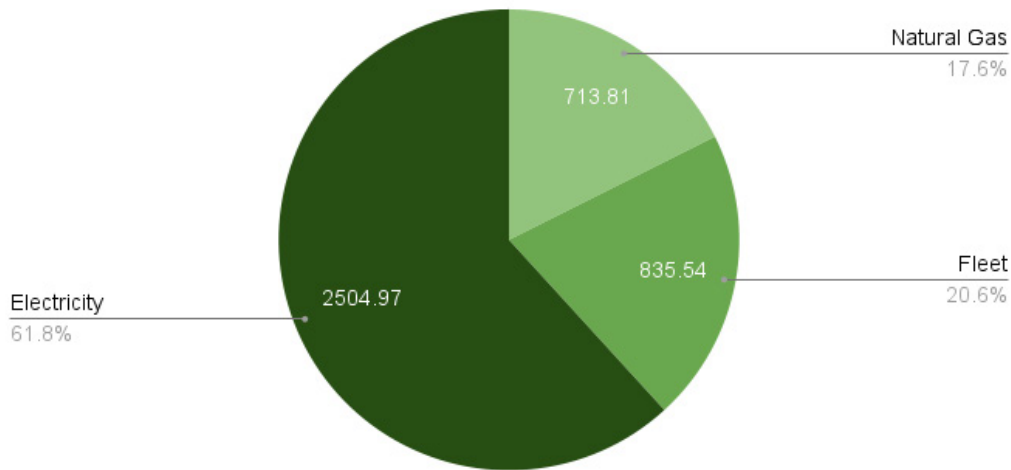


Figure 9: Village GHG Emissions by Scope



Summary

Scope 1 and Scope 2 emissions are associated with the energy consumption of buildings and fuel used by the Village’s fleet. Scope 3 emissions are not included in this GHG inventory. Examples of Scope 3 components include emissions from employee commutes and the sequestration of carbon from parkway trees. There are also some functions, such as the treatment of drinking water and wastewater, that are considered Scope 3 because those functions are carried out by other entities. It is important to note that the Downers Grove Sanitary District does capture and use biogas to power its treatment facility with the intent of operating a Net Zero emissions facility. Scope 3 emissions can be substantial, but are difficult to measure and the Village may have less influence in reducing those types of emissions. Long-term, the Village will need to determine whether Scope 3 emissions should be included in goal-setting and ongoing tracking.

Table 14 provides a summary of Scope 1 and Scope 2 emissions from Village operations in 2023. The majority of emissions associated with energy consumption is from electricity, which makes up 62% of total emissions. The large consumption of electricity is driven by both the characteristics of buildings and their functions. Multiple Village facilities must operate 24 hours a day to support specific functions such as the Police and Fire departments. The other portion of emissions from buildings is from heating during winter months, which is 19% of total emissions. The remaining 20% of emissions from operations are attributable to the 160 vehicles that make up the Village’s fleet.

Table 14: Summary of Village GHG Emissions by Function

Function	Natural Gas	Fleet	Electricity	Total
Village Hall & Police	347.80	305.26	565.57	1218.63 (30.1%)
Street & Traffic Lights	-	-	945.59	945.59 (23.3%)
Public Works	160.31	268.52	264.48	693.30 (17.1%)
Fire	162.21	222.79	320.61	705.61 (17.4%)
Water	9.18	38.98	63.77	111.93 (2.8%)
Train Stations & Parking Deck	34.31	-	344.95	379.26 (9.4%)
Total	713.81	835.54	2504.97	4054.32

The Village function that consumed the most electricity in 2023 was street and traffic lights, which accounted for 37.7% of emissions from electricity. There are approximately 3,000 street lights in Downers Grove. The Village owns and maintains about half of the street lights in the community and ComEd owns and maintains the remaining lights. Village-owned lights are predominately in portions of the community that were developed in the last forty years, which were acquired through developers of specific neighborhoods. The Village also owns the majority of lights in the downtown and Fairview areas. The majority of ComEd light fixtures have been upgraded to LED. A substantial portion of Village-owned fixtures have not been upgraded to LED, though the Village has installed some solar and wind powered fixtures in the Prentiss Creek area.

The second largest consumer of electricity is the combination of the current Village Hall and Police Department buildings. These two buildings consumed more than 1.1 million kilowatt hours of electricity in 2023, which is attributable to 13.8% of total emissions. The relocation to the Civic Center will result in substantial energy savings and emissions reduction through the facility being newer construction with energy efficiency measures designed into the building and on site solar production.

Another surprisingly large consumer of electricity is the Curtiss Street parking deck. In 2023, the parking deck consumed more than a half million kilowatt hours of electricity, or the equivalent to 106 homes in Downers Grove. The primary draw of electricity in the parking deck are overhead lights, most of which run constantly to provide adequate lighting at all hours of the day. Compared to other Village facilities, the parking deck is a revenue generating facility and not included in the list of facilities that receive free electricity through the franchise agreement with ComEd. This means that it is both a large emissions producer and an ongoing expenditure item in the Village's budget.

Emissions from Natural Gas

In addition to being one of the largest electricity consumers in 2023, Village Hall and the Police Department also consumed 45.3% of the total natural gas used by all facilities. Poorly insulated building envelopes and inefficient mechanical systems are a primary driver of excessive natural gas consumption. The Civic Center has both a superior building envelope and heat recovery system to reduce the amount of natural gas that is needed to heat the building in the winter. This should result in a substantial reduction in the amount of emissions from natural gas moving forward.

The second largest user of natural gas is the Public Works building, which accounted for 20.9% of total consumption. By comparison, all Fire Stations collectively consumed about the same amount of natural gas in 2023. The Public Works facility's large use of natural gas is likely driven by a substantial portion of the building being heated garage space. Although it does not maintain the same temperature as the office portion in the building, it is an open space with a large volume of air that is difficult to heat efficiently.

Fleet Emissions

In 2023, about 160 different vehicles were used to conduct Village operations, consuming an equivalent of 98,889 gallons of fuel. The consumption of this fuel resulted in gross emissions of 917 MTCO_{2e}. However, the Village uses B20 rated biodiesel throughout the year in all of its diesel vehicles. Although biofuels produce measurable tailpipe emissions the same way that fossil fuel based fuels do, their impact is not the same. Biodiesels are produced using alternative sources, such as plant oils. The carbon in the plants used for biofuels was previously part of the carbon cycle and not buried within Earth’s crust. The emissions from biofuels are considered biogenic emissions and the net addition of carbon from biofuels is less than that of fossil fuels. The value of the Village biogenic emissions was 81 MTCO_{2e}, resulting in net emissions of 835.54 from fleet.

Table 15: 2023 Fuel Usage in Village Fleet

Gasoline	B20 Biodiesel	CNG	Total
52,686 gallons	42,863 gallons	3,340 g.g.e.	98,889 gallons

Public Works and Police consumed a similar amount of fuel and each produced more than 300 MTCO_{2e} in emissions, though their use characteristics are drastically different. The police fleet is made up of passenger and light duty vehicles. The Public Works fleet is more diverse and includes 45 heavy duty vehicles such as snow plows and construction equipment. Police emissions are driven by high vehicle miles traveled (VMT), with some vehicles logging more than 20,000 miles in 2023. Public Works vehicles travel fewer miles but have lower miles per gallon (MPG) ratings. The Village has recently started to procure more hybrid vehicles for the light duty segment of the fleet. The increased MPG ratings for hybrid vehicles will reduce overall emissions in the future for that portion of the Village’s fleet.

Table 16: 2023 Fuel Usage by Department

Department	Fuel Consumed	Net Emissions (MTCO _{2e})
Public Works	4,898	308
Police	4,268	300
Fire	3,589	223
Community Development	83	5

Key Takeaways

- **Buildings.** Buildings are the largest source of GHG emissions for both the Village and community at large. Emissions in buildings come from the burning of fossil fuels, such as the natural gas that is used to heat buildings in the winter (Scope 1), and the sources of electricity to power buildings (Scope 2). About two-thirds of electricity in our region comes from facilities that burn natural gas and coal to produce electricity.
- **Non-Residential Electricity.** The largest source of emissions in the community is from the electricity consumed by non-residential buildings like offices, retail, manufacturing, and government buildings. Reducing emissions in this area will require active participation within the business community and by large property owners/managers.
- **Commuting Patterns.** Solo drivers in passenger vehicles was the second largest source of emissions at a community level. Downers Grove has a larger daytime population due to it being a destination for nearly 50,000 workers. Being an employment center results in higher transportation related emissions, though the data used is from 2019 and working patterns have shifted due to people working from home.
- **Average Emissions.** When comparing the per capita emissions to the US and DuPage County, Downers Grove is average. This is also true for household energy emissions.
- **Street Lights & Parking Deck.** Electricity is the largest source of emissions (57%) for Village operation. When reviewing the consumption of electricity, street lights consume about 37% of the total electricity consumed by the Village. The Curtiss Street parking deck is also a large source of electricity related emissions, which consumed an equivalent amount of electricity as about 106 homes in Downers Grove.
- **Civic Center.** The current Village Hall and Police Department buildings consume a substantial amount of energy. Collectively, they are the largest consumer of natural gas and second largest consumer of electricity for Village operations. Several energy efficiency measures have been designed into the Civic Center, as well as the incorporation of solar panel to offset a portion of electricity consumption at the new facility. This project will be an important component of the Village's future efforts to reduce its overall GHG emissions.
- **Biofuels.** The Village's fleet of more than 160 vehicles consumed almost 100,000 gallons of fuel in 2023 resulting in net emissions of 835.54 MTCO_{2e}. However, the Village's long standing policy of using B20 biodiesel for the heavy-duty portion of the fleet resulted in 81 MTCO_{2e} fewer emissions than if regular diesel was used.

ISSUES AND OPPORTUNITIES

After spending time with various key stakeholders, Village staff, and Council Members to gather insights and aspirations, the following issues and opportunities are provided as themes that were brought up for consideration as the Environmental Sustainability Plan is developed.

Natural Resources

Throughout each type of community engagement activity, residents and stakeholders repeatedly identified natural resources (i.e., air, water, natural areas) as a priority. Natural resources, especially ecosystem services, play a critical role in climate resilience. Nature based solutions are an effective means of reducing heat islands, flood mitigation, and improving water and air quality. Protecting natural resources within the community, and reducing our collective impact on the environment is a central theme that carries through the report.

Open Spaces and Natural Areas

The community continuously stated that current open spaces are an asset, but desires to see enhancements. More green space, especially in downtown and other commercial areas were identified as desirable features. Connectivity between open spaces and natural areas was also identified as a current issue, presenting an opportunity to investigate the incorporation of natural areas into plans to improve bike and pedestrian connectivity in the community. The Village owns and operates open space including many miles of parkways, stormwater retention areas, and other public spaces including a one-third ownership interest in Lyman Woods. In addition, the Village maintains relationships with other large open space owners within the Village such as the Park District and School Districts.

Private Property

The built-out nature of the community means that the addition of new open space and natural areas would be extremely difficult. Enhancing the amount of “natural areas” in the community will require active participation from residents and businesses to engage in more environmentally friendly landscaping design and maintenance. Native landscaping can improve biodiversity, reduce stormwater runoff, improve air and water quality, and improve natural corridors for migratory species throughout the community.

Enhancing Resilience and Preparedness

Emergency management, especially as it relates to preparing for and responding to natural hazards, was identified as one of the Village’s current strengths. Future projections for the effects of climate change in Downers Grove anticipate higher risks for severe weather, flooding, and extreme heat. Leaning into this strength to continually prepare and reduce the risk to life and property will be necessary as the threat of inclement weather, extreme heat, and flooding increases.

Energy Efficiency and Energy Sources

Buildings are the community’s and Village’s largest source of GHG emissions. Emerging technologies, declining costs, and external funding sources present an opportunity to investigate different strategies to promote building retrofits and the development of programs to enhance access to renewable energy. Although building retrofit strategies present the greatest opportunity for reducing the community and Village’s carbon footprint, these were not considered a top priority by community survey respondents.

Contracted Services

The Village serves the community through contracts for services such as electricity, waste collection, and maintenance/improvement of municipal infrastructure (streets, sidewalks, stormwater, etc.). Procurement for both Village operations and community services can have a dramatic impact on emissions and the overall impact on the environment.

Outreach and Public Engagement

The Village has conducted outreach and public engagement in the area of environmental sustainability through events and publications, including information sharing on the Village website, newsletters, and social media. External collaboration and public relations was identified as the Village function with the most actions that align with the GRC report. Despite these efforts, sustainability was identified as a weakness in the community survey and environmental groups identified a lack of culture around sustainability as a major issue. The Village can greatly benefit from having a green brand/reputation to drive community participation and economic development strategies. There are existing community organizations that are well suited as strategic partners to drive a grassroots movement and branding initiative.

Consumption and Waste Reduction

Garbage, poor recycling habits, accessibility to recycling resources, and composting were all discussed as a challenge in stakeholder interviews and school workshops. Solid waste disposal will continue to become more difficult and come at a higher cost as regional landfills close. The Village has an opportunity to improve access to recycling and composting services, but a collective culture of conscious consumption and waste reduction must also be achieved.

Reduce Light Pollution and Emissions

Street lights were identified as a top source of GHG emissions in Village operations. Reducing emissions related to streetlights also serves as an opportunity to reduce a substantial portion of the community's light pollution through conscious lighting design. The Village also has the authority to influence lighting design and lighting standards on private property through various portions of the Municipal Code. Reducing light pollution has both ecological and public health benefits.