

GREENHOUSE GAS EMISSIONS INVENTORY REPORT

DATA YEAR: 2022

**MCLEAN COUNTY,
BLOOMINGTON,
AND NORMAL
ILLINOIS**



ECOLOGY
ACTION CENTER

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Executive Summary:

The Ecology Action Center (EAC) has conducted three greenhouse gas emissions inventories (GHG) of the Bloomington-Normal community over the past decade. The first inventory established a 2008 baseline for community GHG. The second used 2015 data to measure changes from the baseline. This inventory uses 2022 data to compare emissions trends with both the 2008 baseline and the 2015 inventory. The EAC has used ClearPath software for both the 2015 and 2022 inventories. Data from all three years has been entered into ClearPath to ensure greater consistency among inventories. All inventories were completed using the International Local Government GHG Emissions Analysis Protocol (IEAP), developed by Local Governments for Sustainability (ICLEI), an internationally used protocol for measuring and reporting emissions. Adopting this protocol allows us to standardize this data and for McLean County to compare its data with other counties and national data.

While the previous two inventories measured emissions on the Bloomington-Normal area, this new inventory's scale has been increased to measure emissions in Bloomington, Normal, and all of McLean County. This expands the inventory to the entire county, providing a more complete assessment of regional GHG emissions. McLean County is among the first counties outside the Chicago metropolitan area to complete a countywide greenhouse gas inventory using the ICLEI protocol.

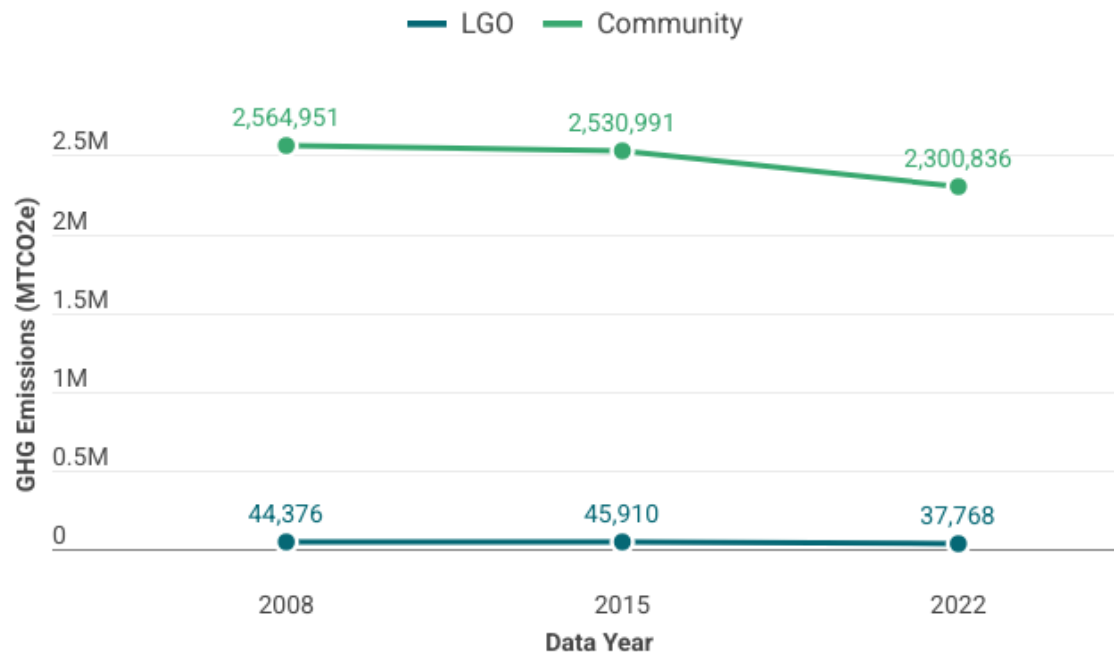
Because previous inventories were completed for Bloomington-Normal only, comparisons with earlier inventories are presented using adjusted Bloomington-Normal values where necessary. Countywide results are presented separately throughout the report.

Like the 2015 inventory, the 2022 inventory reflects two different perspectives:

1. Local Government Operations (LGO) of McLean County, Bloomington, Normal, which includes government buildings, vehicle fleets, public transit, and wastewater treatment operations.
2. Community scale emissions, including all non-governmental sectors of Bloomington-Normal and other McLean County communities, including residential, commercial, and industrial.

The 2015 community scale inventory concluded that, while LGO emissions rose by 11% approximately, community emissions fell by 4% compared to the baseline year of 2008. The 2022 inventory showed that community emissions fell by 9.5%, and LGO emissions fell by 14.9%.

Bloomington-Normal Greenhouse Gas Emissions trends: 2008, 2015, & 2022



Total Local Government Operations (LGO) and Community Scale GHG emissions shown in Metric Tons of Carbon Dioxide Equivalent (MTCO2e). Note, while the 2022 GHG emissions inventory was expanded to include all of McLean County, only emissions data for the Bloomington-Normal area are shown here in order to allow for relative comparison.

Figure 1.1: LGO and Community Scale emissions trends from 2008, 2015, and 2022

Conducting greenhouse gas inventories like these allows the county and its communities to be better informed about their energy-use patterns and the resulting greenhouse gas emissions and associated environmental impacts. Inventories allow the county to monitor and address its contribution to climate change, as well as develop cost-effective strategies to reduce climate impact. The findings from this inventory will serve as a baseline for the McLean County and Bloomington-Normal Community Energy Strategic Plan, a roadmap to achieve both short and long term goals in greenhouse gas emissions reduction and reductions in energy use, scheduled for completion in 2026.

This program is offered in partnership with the Illinois Environmental Protection Agency (Illinois EPA) Office of Energy and supported by funding from the U.S. Department of Energy.

1: Introduction

Earth's ability to regulate its temperature is known as the greenhouse effect, through which gases in the atmosphere trap heat. This effect has allowed life to flourish on our planet, while releasing just enough heat back into space for the planet to remain at a habitable temperature. These gases, such as carbon dioxide (CO₂) and methane (CH₄), are called greenhouse gases, because of their ability to trap heat inside the planet's atmosphere, much like the walls of a greenhouse.

Since the late nineteenth century, Earth's average surface temperature has increased by approximately 1.3–1.5°C relative to the 1850–1900 preindustrial average, primarily due to human emissions of greenhouse gases (IPCC, 2023). While the planet has gone through periods of warming and cooling throughout its history, the speed at which our planet is warming is cause for alarm.

This rise in temperature has already caused drastic change in the planet's climate, with increased drought in some areas, higher rainfall in others, ice sheet loss and sea level rises, and many other natural consequences (IPCC, 2018). Future warming depends on global emissions. Under high-emissions scenarios, global average temperatures could exceed 4°C above preindustrial levels by 2100, while lower-emissions scenarios would substantially reduce future warming (IPCC, 2023). Observed changes in temperature, precipitation, sea level, and the frequency of many extreme weather events demonstrate that climate change is already affecting communities around the world.

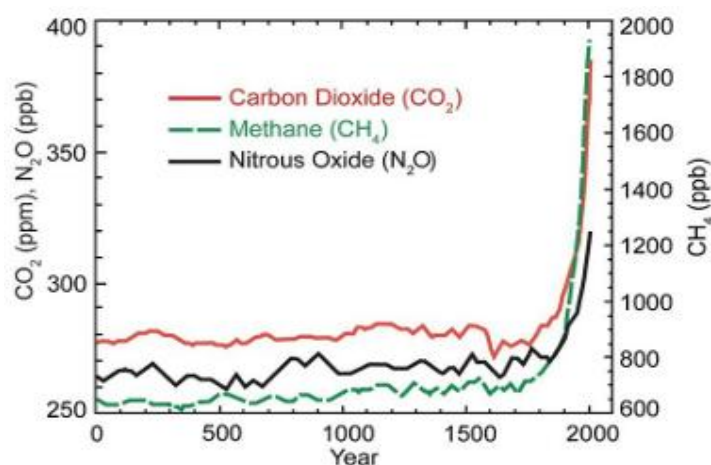


Figure 1.2: Atmospheric Concentration of CO₂ over time; the “hockey stick” graph (U.S. Environmental Protection Agency, 2016)

Currently, the United States is the second largest emitter of greenhouse gases in the world, and the largest historical emitter. Scientists and political leaders have acknowledged the threat of global climate change and the need to take significant actions to reduce emissions immediately. Federal climate policy has changed substantially over the past decade, including changes in international commitments, regulatory priorities, and implementation of climate and energy

legislation. Despite these changes, state and local governments continue to play an important role in greenhouse gas mitigation planning.

Despite the deregulations taking place at the federal level, there is still climate action happening with state and local governments across the country. In addition, markets have also already begun favoring renewable and clean energy (IEA, 2024). In Illinois, numerous climate bills have passed at the state level, such as the Future Energy Jobs Act (FEJA), and CEJA, the Climate Equitable Jobs Act (Illinois General Assembly, 2021). Illinois has established statutory targets for a carbon-free electric sector through the Climate and Equitable Jobs Act (CEJA), with interim milestones through 2045.

Even with its inland location and temperate climate, Illinois, and McLean County, are by no means immune from the adverse effects of climate change. Since the beginning of the 20th century, average Illinois temperatures have risen more than 1°F. The county's dependence on agriculture for its economy means that extreme weather events, which will be supercharged by climate change, can have lasting repercussions for the local agriculture industry, and by extension, the county economy (U.S. Global Change Research Program, 2023). Agriculture is both vulnerable to climate change and a source of GHG through fuel use, fertilizer application, and livestock production.

Climate change is also a public health issue just as much as it is an economic issue. The Bloomington-Normal region is vulnerable to air quality issues related to ground-level ozone pollution (USEPA, 2024).

Warmer temperatures will likely exacerbate this ozone pollution, causing serious public health issues for county residents who are sensitive to bad air quality. Along with ozone, longer pollen seasons, and dust blowing in due to increasing drought, will likely also exacerbate air quality issues for many county residents. Federal air quality standards have been tightened since 2015 for ozone pollution, from 0.075 ppm to 0.07 ppm. McLean County has yet to violate the new standards, and it was historically in compliance with the previous standards. However, had the new standards taken effect earlier, McLean County would have exceeded them five times between 2006 and 2015.

Nonattainment can impose significant economic costs on the local economy, including potential restrictions on certain federally funded transportation projects, additional regulatory planning requirements, and mandatory vehicle emissions testing-measures (Illinois Environmental Protection Agency, 2025a). Tracking community GHG emissions, forming an energy strategic plan, and working to reduce our GHG emissions will also help reduce air pollutants, which will help the county maintain attainment status for the future.

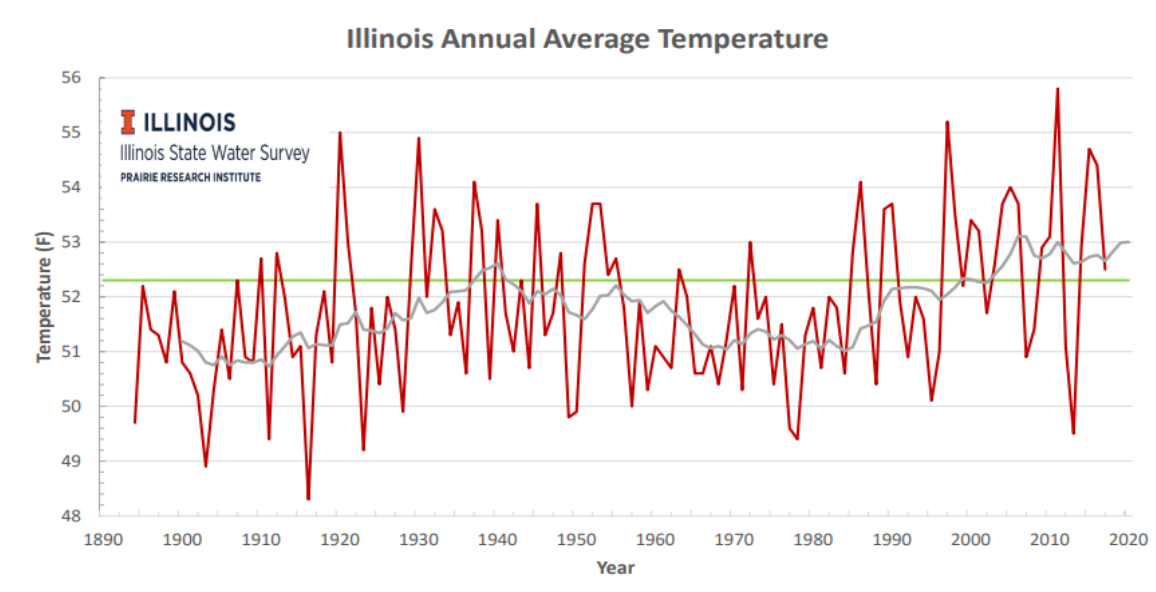


Figure 1.3: Average annual temperature across Illinois from 1900 to 2020 (Illinois State Climatologist, 2019)

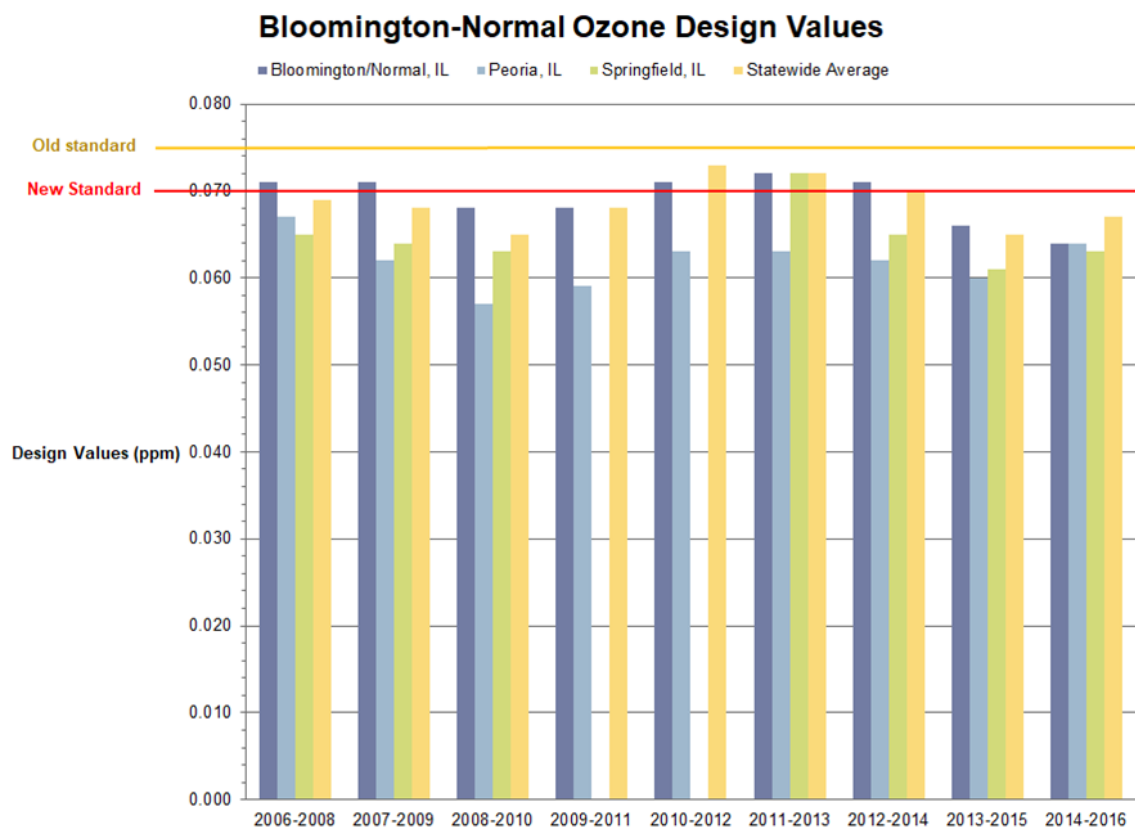


Figure 1.4: Design Value ozone concentrations for Bloomington-Normal. Design values greater than 0.075 ppm (through 2015) and greater than 0.07 (2016 and after) is a violation of the National Ambient Air Quality Standard. This is an EAC graph (EAC, 2023) created using Illinois EPA data (IEPA, 2025b)

Purpose of this report

Urban areas account for approximately 70% of global energy-related CO₂ emissions and use two-thirds of the world's energy (IEA, 2021), so measuring emissions at the city level is an important and necessary first step toward understanding, managing, and reducing GHG emissions. However, increasing the scale of measurement to an entire county can accurately measure a region's total emissions, compared to just its cities. A GHG inventory is a tool that many communities use to quantify their emissions and regularly assess their progress towards meeting federal, state and local emissions goals. The EAC recommends this community reassess its greenhouse gas emissions at regularly planned intervals, ideally no less than every five years. These inventories, as well as other data, community plans, and reports will all help guide the McLean County and Bloomington-Normal Community Energy Strategic Plan. Making choices that improve local air quality and slow climate change positively impacts McLean County and the Bloomington-Normal community.

What is a Greenhouse Gas Inventory?

A greenhouse gas inventory identifies and quantifies greenhouse gas pollution from human activities emitted into the atmosphere over a period of one year, and correlates this pollution with the activities that caused the emissions. An emissions inventory also provides background on the methods used to make these calculations. Policy makers use GHG inventories to track emission trends, develop strategies to reduce GHG pollution, and assess progress toward meeting reduction goals. The combustion of fossil fuels such as coal, petroleum, and natural gas for electricity generation and transportation are the primary sources of these emissions. This inventory focuses on the greenhouse gases commonly included in local government inventories (IPCC, 2023).

These three gases are most relevant and practical for most inventories: carbon dioxide, methane, and nitrous oxide. The other three gases, excluded from this inventory, are perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF₆). Accurate local data is not available to measure these three gases, which typically result from industrial processes. Additionally, these gases represent only 3% of the nation's total emissions, so they are a low priority and are not included in this inventory.

This report is instead focused on accurate measurements and calculations of the quantities of carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄) emissions. In accordance with ICLEI ClearPath methodology, these gases were aggregated and reported as carbon dioxide equivalents (CO₂e), a commonly used unit that combines the greenhouse gases, each of which has a different effect on Earth's climate, into one weighted, universal unit. The CO₂e volumes are measured as metric tons (MT) of carbon dioxide equivalents (MTCO₂e), equal to 1,000 kg, or 2,204.6 lbs. This is the internationally accepted unit of measurement for greenhouse gas emissions. The emission quantities were converted into MTCO₂e equivalents using standardized conversions relating to the potency (global warming potential) of these gases relative to carbon dioxide.

While all three of these gases are of concern, carbon dioxide by far is the most significant. Expressing the total volume of all greenhouse gases in one universal unit allows for easy comparisons in terms of a common “currency”; however, it is important to note when an activity’s emissions consist of a higher level of a more potent greenhouse gas. Even though CO₂ represents 82% of total human emissions, the impact of other gases towards climate change can be more significant or severe. For example, while carbon dioxide accounts for the majority of these greenhouse gases, methane has a much greater warming potential (amount of heat a gas is able to trap), and should be accounted for just as much as carbon dioxide is.

This inventory reports carbon dioxide equivalent (CO₂e) emissions using the Global Warming Potential (GWP) values prescribed by the ICLEI ClearPath/U.S. Community Protocol methodology in effect when the inventory was prepared. While newer IPCC assessment reports recommend updated GWP values, this report retains the original values to ensure consistency with the underlying inventory calculations and maintain comparability with prior community greenhouse gas inventories.

Gas	Abbreviation	Global Warming Potential	Percentage of U.S. Emissions
Carbon Dioxide	CO ₂	1	80%
Methane	CH ₄	21	11%
Nitrous Oxide	N ₂ O	310	6%
Hydrofluorocarbons	HFCs	43-11,700	1%
Perfluorocarbons	PFCs	6,500-9,000	1%
Sulfur Hexafluoride	SF ₆	23,900	1%

Figure 1.5: U.S. Greenhouse Gas Emissions Mix (data supplied by U.S. Environmental Protection Agency, 2025a)

Benefits of GHG Emissions Inventories

GHG inventories are invaluable to local governments in many ways. Identifying and quantifying emissions are a main goal, but inventories like these also allow communities to identify the largest sources of emissions and address them accordingly. Multiple inventories over a given time period lets communities track emission trends, and are a good measurement of a community’s progress towards reducing their emissions. Inventories also measure how close a community is towards reaching their emissions reduction goals, and can be used to develop mitigation and adaptation strategies. This information can be shared with stakeholders and policy makers to help further address emissions and protect public health in the community.

Risk Management and Voluntary Action

By measuring total emissions, McLean County, Bloomington, and Normal will have a tool to prepare itself for a carbon-constrained future that will document actions undertaken to reduce GHG emissions, as well as prepare and adapt to any future adverse effects of climate change. Voluntarily reporting and working to reduce emissions can ultimately reduce the need for more severe reduction mandates by higher levels of government.

Identification of Inefficiencies and Cost-Savings Opportunities

Accounting for emissions creates opportunities to identify ways to improve efficiency by reducing materials and energy inputs, waste, and emissions. The benefits of doing so include cost savings, emissions reductions, and future cost control for activities that have high carbon intensity. Using this information, appropriate and actionable goals for reducing emissions can be made, making operations more cost-effective.

Leadership

While many central Illinois communities are working to reduce their carbon footprint, relatively few have completed a baseline GHG emissions inventory. Like many past initiatives, McLean County and Bloomington-Normal will set an example for other central Illinois communities by taking responsibility for its impact on the climate. Sharing the lessons learned through this experience will empower others to follow suit for even greater impact.



Figure 1.6: Twin Groves Wind Farm, one of many examples of McLean County's leadership in renewable and clean energy. (Photo supplied by EAC, 2023)

Mitigation and Adaptation

After completing a baseline inventory quantifying local GHG emissions, McLean County, Bloomington, and Normal can next identify and implement strategies to reduce those emissions. At the same time, the community can begin planning adaptive strategies for a changing environment. Examples might include using water resources more efficiently, adapting building codes to new climate conditions and extreme weather events, and choosing tree species less vulnerable to storms and drought. Greenhouse gas inventories are essential to informing any climate action plan.

2: Methodology

Existing Studies

Bloomington-Normal's first two greenhouse gas inventories were conducted in 2008 and 2015. 2008 was chosen as the baseline inventory, as it was the earliest year that complete data was available. Both it and the 2015 inventory serve as comparison points for the 2022 inventory, as well as all other future inventories and analysis.

Selected Protocols

The 2008, 2015, and 2022 Inventories were conducted in accordance with U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions produced by ICLEI (ICLEI, 2024). ICLEI protocol for all inventories provides standardized principles, approach, methodology, and procedures for reporting GHG emissions inventory as completely, transparently, and accurately as possible. By using ICLEI protocol, the results of McLean County's inventory can be compared with other municipalities both nationally and across the world.

This inventory was completed using ICLEI protocol's five principles. A summary of these principles can be found in the Appendix of this document.

Previous Inventory Adjustments

To ensure consistency across comparisons, the 2015 inventory was adjusted to include the same factor sets as the 2022 inventory. Factor sets are the mathematical factors that ClearPath software uses to calculate emissions equivalents, measured in metric tons of carbon dioxide equivalent (MTCO_{2e}). These sets are provided for different years, and by various sources. The 2022 inventory uses electricity emission factors representing the SERC reliability region, as provided through ICLEI ClearPath. These regional factors more accurately reflect the carbon intensity of electricity supplied to McLean County than the generic national factors used in earlier inventories (NERC, 2024). The 2015 inventory previously used factor sets which were standard estimations by ClearPath. Using localized data from SERC is more accurate than using a standard figure, and updating the factor set ensures some level of consistency between the two inventories. Updating the factor set changes the calculated emissions values but does not materially change the direction or interpretation of long-term emissions trends.

By using these updated factor sets, it was determined that emissions were undercounted in the 2015 inventory and was updated accordingly in ClearPath. These new factor sets were not available for the 2008 inventory, so that year's inventory remains unchanged.

Inventory Comparisons

Due to the change in scale of this inventory to all of McLean County, whereas previous inventories focused on Bloomington & Normal, comparisons across inventories are complicated. Some sectors from all inventories can be compared at the countywide scale, whereas other sectors can only be compared at the Bloomington-Normal level. On-road transportation emissions can be compared at the county scale, since countywide data is easily accessible for all years, in the form of vehicular miles travelled (VMT) sourced from IDOT's *Travel Statistics*. Rail and air travel emissions are also easily comparable; there are only two major rail lines (Union Pacific & Norfolk Southern) and one major airport (Central Illinois Regional Airport) in McLean County. Solid Waste data is also comparable; countywide data was scaled-down to the Bloomington-Normal level for previous inventories, and was thus easily accessible.

Stationary energy, however, was only provided at the Bloomington-Normal level for previous inventories. To ensure accurate comparisons, county-scale stationary energy data for 2022 was scaled down to the Bloomington-Normal level, using a population factor. This population factor is the ratio of Bloomington-Normal's population to McLean County's population. This factor was then applied to the stationary energy data to estimate Bloomington-Normal's proportion of the data.

Although it was also possible to scale the stationary energy data from the previous two inventories up to the county level using the same population factor, the analysis instead scales the 2022 county inventory down to the Bloomington-Normal boundary. This approach minimizes methodological changes to the historical inventories by requiring only one estimated adjustment rather than modifying two separate baseline datasets. Because the earlier inventories were originally developed and validated for Bloomington-Normal, preserving those datasets while adjusting only the new county-scale inventory reduces the cumulative uncertainty introduced through proportional estimation and provides a more consistent basis for comparing trends over time.

This approach assumes that stationary energy use is approximately proportional to population. While this assumption is reasonable for aggregate community comparisons, actual energy use may vary because of differences in industrial activity, commercial development, and land use.

This method has been used in other inventories, such as Bloomington, Indiana's GHG inventory in 2022 (City of Bloomington IN, 2022).

Evaluating by Scope and Sector:

This inventory includes the most important sources of emissions within McLean County's boundaries, both political and organizational. ICLEI protocol calls for reporting these emissions by scope. Scope involves categorizing emissions based on whether their sources are direct or indirect. Direct emissions are directly produced within county boundaries, while indirect emissions are produced elsewhere but contributed to by the county. For example, electricity from coal power plants outside of the county will generate greenhouse gas emissions even though it is

not located here. While the emissions do not directly affect the local community, a portion of those emissions are attributable to electricity consumed within McLean County. Sorting emissions by scope allows local governments to appropriately distinguish direct and indirect emissions and create relevant emissions reduction policies.

Identifying different emission scopes avoids double counting emissions and ensures inclusion of all relevant information. While scopes are a useful way of visualizing emissions from individual organizational entities, such as businesses or local government operations, the Community Scale Protocol does not use scopes as a means of categorizing emissions. This is because the organization-related definitions of scopes don't translate to the wider community scale in a clear and consistent way that is applicable as an accounting framework.

There are three scopes for emissions:

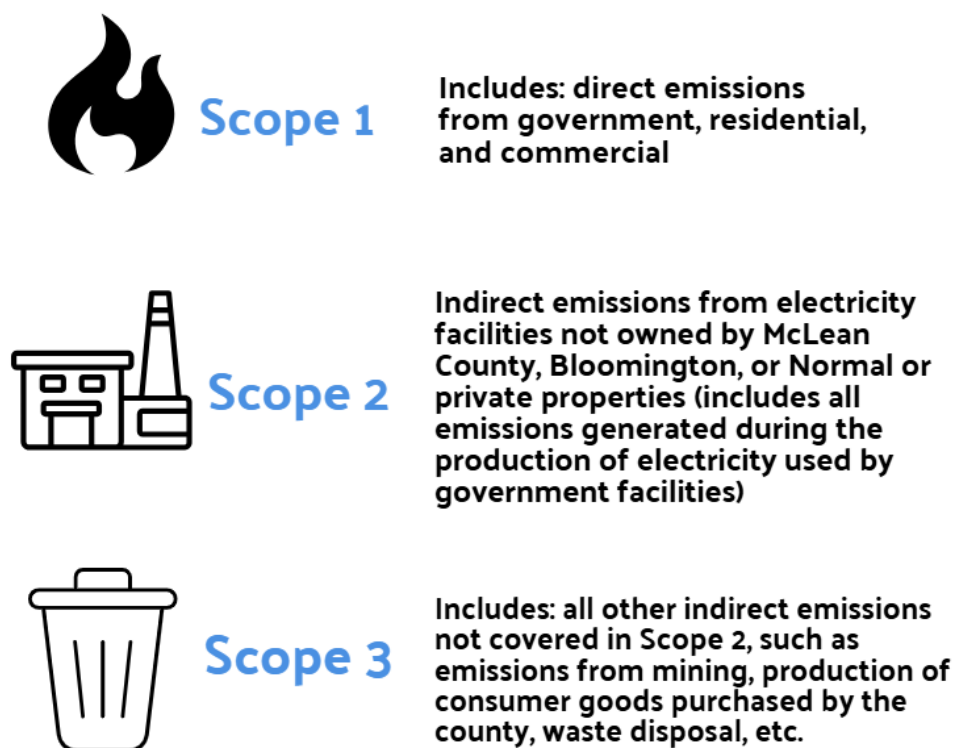


Figure 2.1: Scope inclusions

Sectors refer to the entity that creates emissions. Typical sectors include residential, commercial, industrial, and municipal. Within an LGO Inventory, sectors may be further subdivided.



Scope 1

Sectors in Scope 1 include: LGO Natural Gas, Residential, Industrial, and Commercial Natural Gas, All Transportation, and Wastewater Treatment



Scope 2

Sectors in Scope 2 include: LGO Electricity, Residential, Industrial, and Commercial Electricity



Scope 3

Sectors in Scope 3 include: All Solid Waste

Figure 2.2: Sectors within scopes

Data and Calculations

Direct measurement of community-wide greenhouse gas emissions is generally not practical. Therefore, inventories estimate emissions from measured activity data such as electricity use, fuel consumption, vehicle travel, and waste generation.

Local government staff members, local utilities, and other local organizations provided the data used for both the community and the LGO inventory. This data was in the form of utility bills, electricity and fuel usage reports, fuel bills, mileage reports, and correspondence. The raw figures in this data are sensitive, and thus will not be shared in this report.

For the 2015 and 2022 inventories, the EAC utilized ClearPath software provided by Local Governments for Sustainability (ICLEI USA, 2026). ClearPath is a web-based software designed for tracking and managing energy and emissions, and is designed to help local governments store data, perform calculations, and develop protocol-compliant inventories. The 2008 inventory has also been retroactively entered into ClearPath to ensure consistency in data comparisons across inventories. The EAC used the ClearPath software to calculate greenhouse gas emissions expressed as carbon dioxide equivalents (CO_{2e}) from all of the data provided.

Standard EPA/ICLEI emission factors were applied for direct fuel combustion sources (e.g., natural gas, gasoline, diesel, propane, and fuel oil), while electricity emissions were calculated using regional eGRID emission factors for the SERC reliability region.

Overall, this inventory, like the past two, uses a simplified data collection strategy to encompass a fairly broad scope of emissions. While some omissions are inevitable, this approach allows for a reliable and reproducible process that generates dependable and consistent records of emissions for both community and LGO-scale inventories.

Stationary Energy

Electricity data in the form of energy usage reports and utility bills was provided by Ameren and Corn Belt. Fuel records and gas usage reports were provided by Nicor Gas. These were segregated into the categories of residential, industrial, and commercial, for both energy types.

LGO electricity and natural gas data was provided by county and municipal staff for buildings and facilities.

2022 Ameren usage data for Normal was unavailable, and was replaced with 2023 usage, which were the earliest records Ameren staff had on hand. There was an option to extrapolate 2022 Ameren usage data, using the proportions of total electricity usage between Bloomington and Normal, combined with using the previously mentioned population factor. However, the choice was made to use actual usage data rather than estimations to ensure accuracy. Note that nationwide, from 2022 to 2023, residential and industrial electricity usage dropped, while commercial electricity usage increased (U.S. EIA, 2025). In Illinois, total electricity sales dropped by 5.5%, with all sectors experiencing decreases in usage (Illinois Commerce Commission, 2024). Because statewide electricity consumption declined between 2022 and 2023, use of 2023 data likely results in a conservative estimate of Normal's 2022 electricity emissions.

While Ameren emissions for Normal are likely being undercounted for 2022, the trend of an emissions decrease compared to 2008 and 2015 remains true due to the emissions factor of McLean County's grid decreasing compared to 2008 and 2015; this will be further elaborated in the Community section of this report. This was the only data set that could not be obtained for 2022, all other stationary energy data was obtained without issue.

Public Transit

Public transit data was supplied by Connect Transit in the forms of gallons of fuel used. Diesel, gasoline, propane, and electricity usage were all provided; propane and electricity were not used by Connect Transit in previous inventory years, and thus will not be compared across years. Diesel and gas emissions are consistent across all inventories, and will be compared across all years.

Since Connect Transit is an inter-city agency across Bloomington and Normal, finding the exact proportion of fuel used for each municipality is not possible. As the next most accurate method, fuel was segregated by dividing by the proportion of total route mileage in each municipality. The proportions were previously calculated in the 2015 inventory, and have not been changed for 2022 since Connect Transit routes have experienced few changes during this period. The only

major route change was the cancellation of the Olive Line in north Normal in 2019, but much of this route was absorbed into the Pink Line (Munashe III, 2019), which means any change in Normal mileage is negligible. The Sapphire Route was introduced in October of 2022, with an equivalent mileage between Bloomington and Normal. Any changes to route proportions are minimal, especially with the route only being in operation for 3 months of the inventory year.

Municipality	Proportion of Total Route Miles
Bloomington	65.70%
Normal	34.30%

Figure 2.3: Public transit mileage distribution

Wastewater Treatment

The Bloomington-Normal Water Reclamation District provided wastewater treatment data in the form of electricity and gas usage. Process emissions were calculated using pre-existing factor sets in ClearPath. This includes a universal Industrial Commercial Discharge Multiplier (defined within the ICLEI ClearPath methodology).

Vehicle Fleet

Local government staff provided segregated fuel usage data (diesel and gasoline) for their on-road and off-road fleets in the form of fuel bills, fuel records, and correspondence. Emissions from diesel and gasoline were calculated separately.

Vehicular Miles Traveled (VMT)

Average annual VMT for all inventory years was published in the Illinois Department of Transportation's (IDOT) annual "Travel Statistics". IDOT publishes these statistics based on county, which means data includes the entirety of McLean County, rather than solely the Bloomington-Normal area. Because local vehicle fleet composition data were unavailable, the inventory used the default vehicle class and fuel-type distribution provided by ICLEI ClearPath, consistent with the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (Transportation Appendix, Table TR.1.3).

- 60.6% gas passenger vehicles
- 32.4% gas light trucks
- 0.45% gas heavy trucks
- 0.71% motorcycles
- 5.4% diesel heavy trucks
- 1.3% diesel light trucks
- 0.3% diesel passenger vehicles

Year	VMT McLean County (On-Road Vehicles Only)
2008	1,787,939,145
2015	1,802,585,342
2022	1,719,997,592

Figure 2.4: VMT mileage comparison

Solid Waste

The EAC is the solid waste agency for McLean County, and calculates annual community-wide waste and recycling rates by surveying local waste haulers, recyclers, municipalities, businesses, and other entities in McLean County. Breakdown of this waste into separate sectors (residential, industrial, commercial) is not possible due to collection practices by waste haulers. This includes emissions generated from landfill waste, as well as emissions associated with landfill management equipment. Any stationary energy or transportation emissions associated with the landfill facility are captured in those respective sections.

Year	Tons of MSW (Landfilled)	Percent Change
2008	163,202	0%
2015	159,989	-2%
2022	112,264	-30%

Figure 2.5: Municipal Solid Waste landfilled comparison

Note that the drop in landfilled waste from 2015 to 2022 correlates with the total amount of recycled waste increasing. The EAC calculates the county recycling rate annually, and the rate has increased by 9.27 percentage points since the baseline year of 2008.

Year	Recycle Rate
2008	37.58%
2015	34.36%
2022	46.85%

Figure 2.6: Recycling rate comparison

Process and Fugitive Emissions

New to this inventory is the inclusion of process and fugitive emissions. These included refrigerants, aerosols, hydrofluorocarbons, and other solvents. These were calculated using ICLEI's Fluorinated Gases Inventory Tool (ICLEI USA, 2026), which used the total electricity used in the county, segregated by sector, to calculate the total MTCO_{2e} of each fugitive emission

category. This tool estimates countywide emissions from fluorinated gases using electricity consumption as a proxy for economic activity and equipment usage.

Rail Emissions

Freight and passenger rail emissions were previously calculated using fuel usage from Amtrak and a study done by the McLean County Regional Planning Commission. Neither option was available for this inventory, so rail emissions were instead calculated using ICLEI's Rail Transportation Calculator to estimate fuel usage.

Air Emissions

Airport data was provided by Central Illinois Regional Airport staff in the form of fuel usage records.

Inventory Limitations

This inventory only reports on four of the six total greenhouse gases. CO₂, CH₄, N₂O are directly inventoried, while fluorinated gases are estimated separately.

Process and fugitive emissions are exclusive to the 2022 inventory, which may affect comparisons between inventories. However, it should be noted that process emissions only make up a small portion of the total inventory, at 3% of total emissions, so any effect in comparison across inventories should be minimal.

A portion of Normal's electricity data was supplied from 2023 rather than 2022 to avoid estimations.

Emissions from agriculture were not included in this inventory. While some emissions may have been captured in the community inventory (for some stationary energy and VMT), carbon dioxide emissions from fuel usage and methane emissions from livestock were not included in this inventory. Agriculture emissions were not previously calculated in the 2008 or 2015 GHG reports, due to previous inventories measuring only emissions from the urban area of Bloomington and Normal. However, given the scale change of this inventory to the county, along with agriculture's importance to McLean County's economy (as previously mentioned in Chapter 1), it's important to mention the lack of inclusion of agricultural emissions. It is unknown how much the inclusion of agricultural emissions would affect the total emissions count for 2022.

Results should be interpreted as planning-level estimates rather than direct measurements of emissions. All greenhouse gas inventories contain uncertainty resulting from activity data, emission factors, and methodological assumptions.



Figure 2.7: Amtrak's *Lincoln Service* arriving at Uptown Station, Illinois' second busiest train station with 178,018 riders in 2022 (Amtrak, 2022), demonstrating the region's leadership in sustainable transportation. Photo supplied by EAC (2024)

3: LGO Summary of Results

The LGO inventory measures GHG emissions associated with McLean County, the Town of Normal and the City of Bloomington. The total emissions for all LGOs in this inventory include emissions from energy and fuel used by municipal buildings and facilities, vehicle fleets, public transit, and wastewater treatment. Data on electricity and natural gas usage, fuel usage, and wastewater emissions were provided by government staff, mainly in the form of utility bills from all LGOs. Protocol-compliant emissions inventory software converts these activity data into greenhouse gas emissions expressed as carbon dioxide equivalents (CO₂e).

Public transit and wastewater treatment are operated by independent governmental entities (Connect Transit and the Bloomington-Normal Water Reclamation District). Their emissions are therefore calculated separately before being incorporated into the overall Local Government Operations inventory.

Energy usage for streetlights, traffic signals, and water distribution was included under building and facilities energy totals. Energy emissions are segregated to measure the County, Town and City's individual emissions.

Facilities data from smaller municipalities in McLean County are not separately represented in the LGO inventory because facility-level energy data were unavailable. Their associated energy use is expected to be reflected within the community-wide stationary energy inventory. This LGO analysis only includes facilities and fleets owned by McLean County, the City of Bloomington, Town of Normal, and transit and wastewater treatment services for these areas.

The LGO inventory emissions at the Bloomington and Normal scale were reduced compared to 2015 and to 2008. The biggest decrease was made in buildings and facilities emissions for Bloomington. County government facilities are included for the first time in this inventory. Consequently, 2022 serves as the baseline year for future comparisons of McLean County government operations.

Public Transit

For 2022, transit emissions were segregated based on fuel type. Connect Transit, McLean County's main transit agency, provided fuel usage data for gasoline, diesel, propane, and purchased electricity for battery buses.¹ This is more information than was previously measured in 2015, which only measured diesel; electric buses were first put into use by Connect Transit in 2019. The provided fuel usage was not segregated by community (Bloomington & Normal), as determining the exact proportion of fuel to each municipality is not practical, due to Connect Transit being an inter-city agency. As explained in the methodology section, the total fuel amount was divided proportionally by the total transit route mileage in each municipality which was first done in 2008. The same route proportions were used in 2015, and were used again for

¹ Note that Connect Transit has also used solar to generate electricity for battery buses; quantitative generation data for the on-site solar system were unavailable and therefore could not be incorporated into the emissions calculations.

2022. Charts below show Connect Transit’s total emissions in 2022. Since diesel fuel is the only data consistent across all inventories, only diesel emission trends will be compared with previous years.

Although Connect Transit began electrifying its fleet in 2019, operational challenges following Proterra’s bankruptcy have affected continued deployment of battery-electric buses (Proterra Inc, 2023). As a result, the agency has expanded use of hybrid vehicles while long-term fleet replacement strategies continue to evolve.

Municipality	Proportion of Total Route Miles
Bloomington	65.70%
Normal	34.30%

Figure 3.1: Public transit mileage distribution

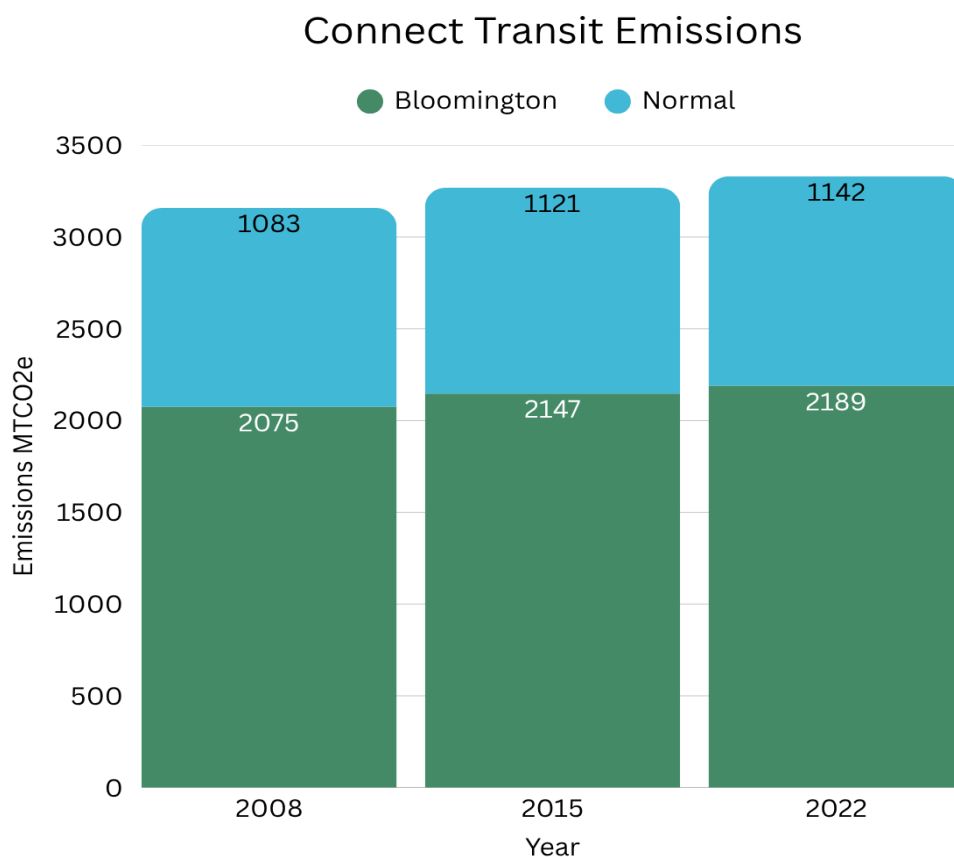


Figure 3.2: Transit Emissions Segregated by Municipality

Year	Total Diesel/Gas Emissions
2008	3,158 MTCO ₂ e
2015	3,267 MTCO ₂ e
2022	3,331 MTCO ₂ e

Figure 3.3: Total Diesel and Gas Emissions by Year

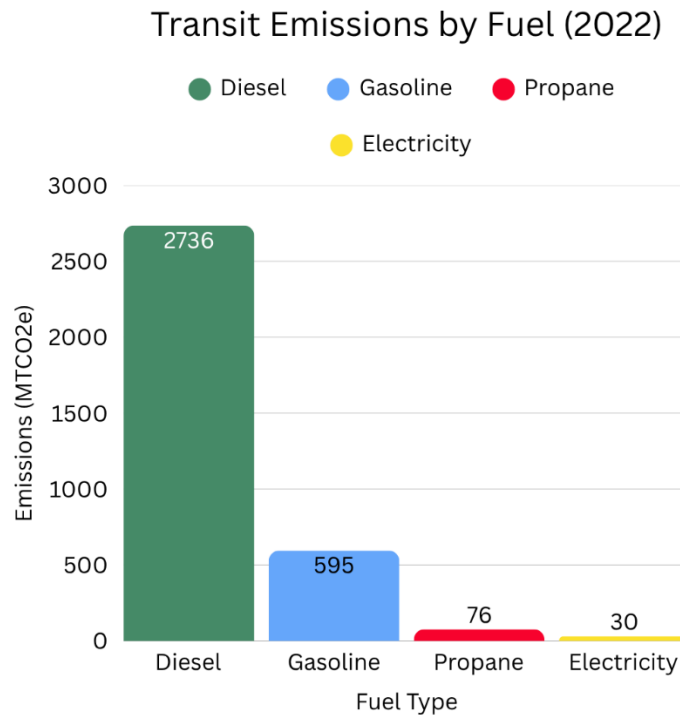


Figure 3.4: Emissions segregated by fuel type; note that propane and electricity emissions were not used by Connect Transit until 2016, and therefore are not compared across years.



Transit Emissions: +2%

Buildings and facilities

Buildings and facilities included buildings for the operations of the Town of Normal and City of Bloomington. New for this inventory are buildings/facilities for McLean County. This includes

electricity and natural gas usage, which was provided by local government staff. Comparing LGO energy usage to previous inventories is difficult because of the addition of county facilities.

Some government buildings are jointly occupied by multiple governmental entities. An example would be Government Center in downtown Bloomington, which houses the County Administration and many other county offices, as well as the City of Bloomington Administration, Public Works, and other City offices. Energy consumption for each entity was reported separately by the respective agencies and therefore was not double counted.

Data was separated into emissions for Normal, Bloomington, and McLean County facilities. It should be noted that Town of Normal emissions have decreased, as have City of Bloomington emissions. Future inventories will establish long-term trends for County government operations.

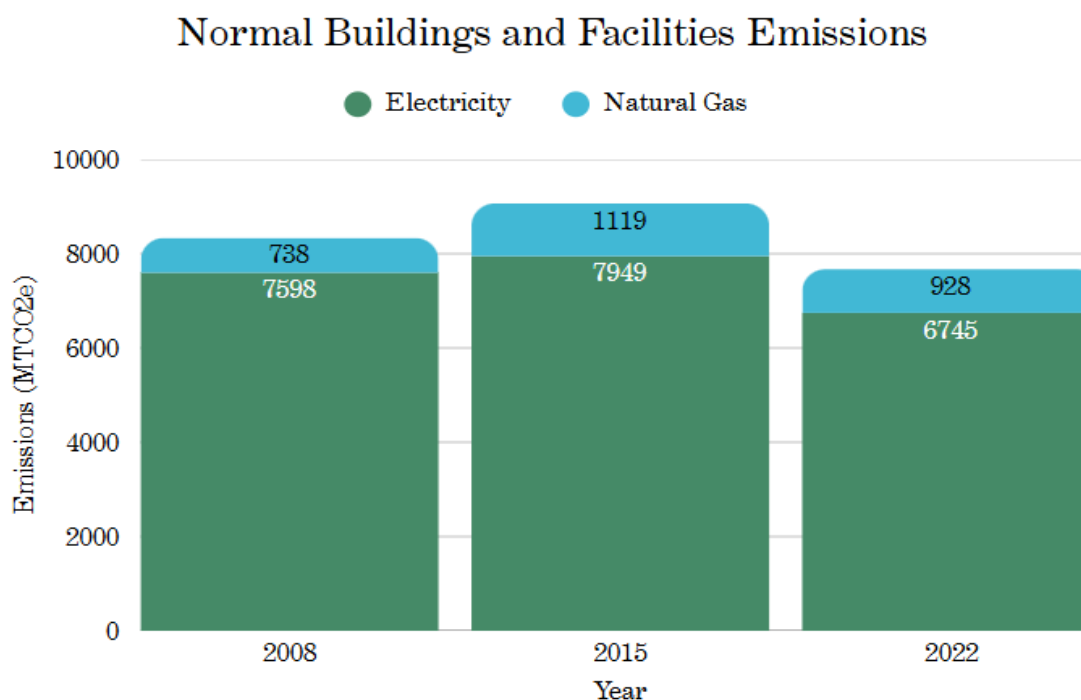


Figure 3.5: Normal Stationary Energy Emissions by Year

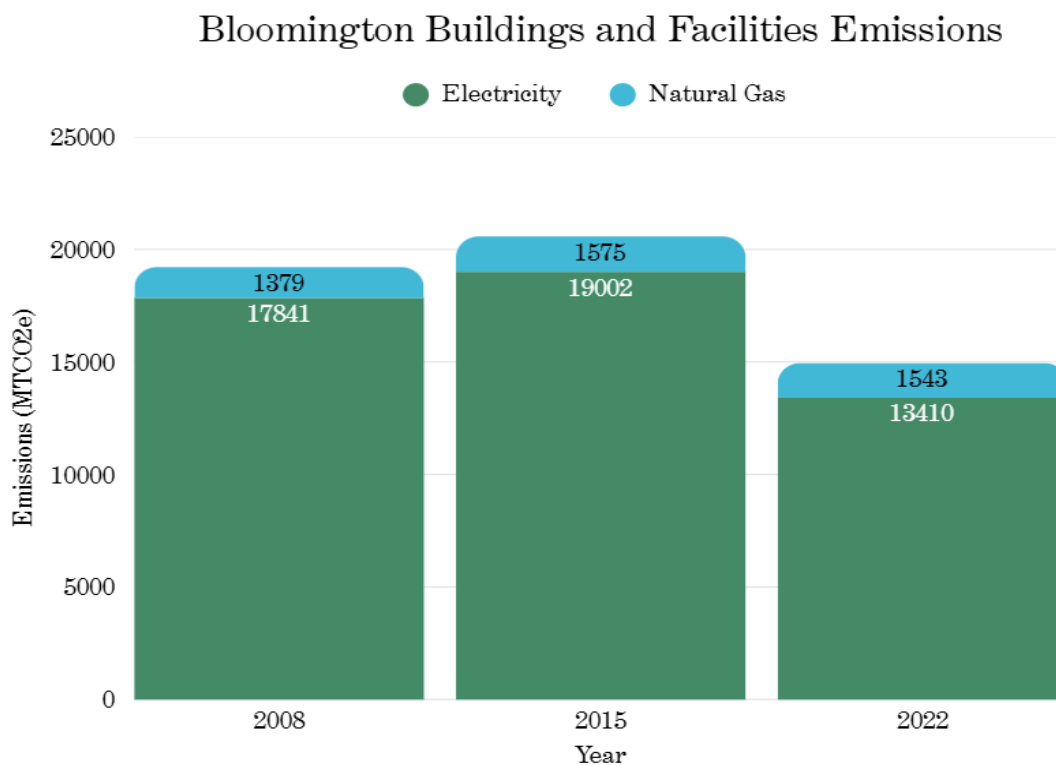


Figure 3.6: Bloomington Stationary Energy Emissions by Year



Bloomington Buildings & Facilities Emissions

-22%



Normal Buildings & Facilities Emissions

-6.4%

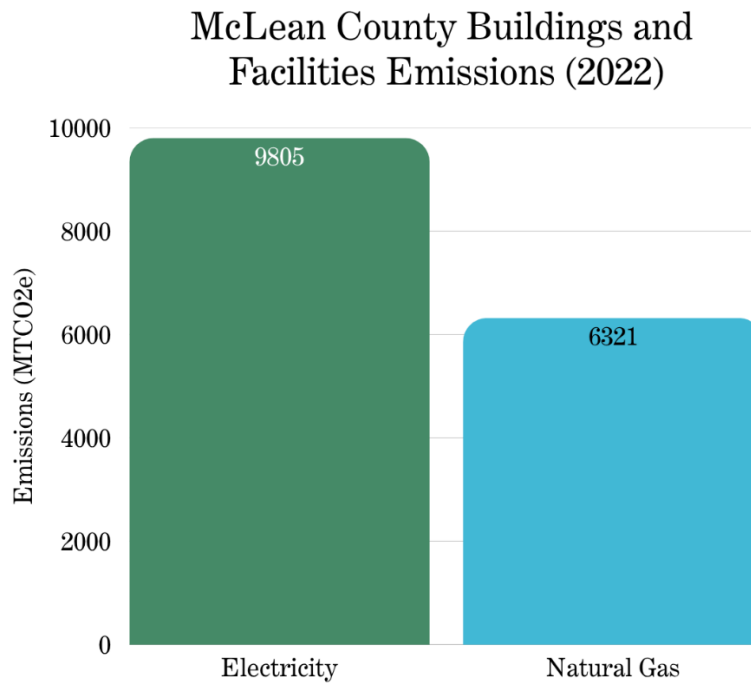


Figure 3.7: McLean County government buildings and facilities greenhouse gas emissions by energy source (2022)

Year	Total LGO Buildings and Facilities Emissions
2022	38,752 MTCO ₂ e

Figure 3.8 Total LBO Buildings and Facilities Emissions

Wastewater and Treatment

Wastewater and treatment are handled by the Bloomington Normal Water Reclamation District (BNWRD), who provided data in the form of electricity and natural gas usage. Process emissions from treatment and effluent discharge were calculated within ClearPath. These also include methane and nitrous oxide emissions, measured in CO₂e. Fleet fuel use was not available from BNWRD and therefore is not included in this section. To the extent such vehicle activity occurs on public roadways, it is expected to be represented within the community transportation inventory.

BNWRD provides centralized wastewater treatment for Bloomington and Normal. They use anaerobic digestion and nitrification, and do not use a lagoon system. These treatment processes influence methane (CH₄) and nitrous oxide (N₂O) emissions, which are estimated using the ICLEI ClearPath methodology.

Other McLean County communities have their own treatment plants, or have septic systems for individual residences. While emissions from these treatment plants were not able to be measured, their combined emissions are expected to represent only a small fraction of countywide wastewater treatment emissions. Given the smaller size of these communities compared to Bloomington and Normal, any increase in emissions from including these wastewater facilities is assumed to be negligible.

Total wastewater emissions have decreased since 2008. This decrease is the largest total change for the LGO Inventory.

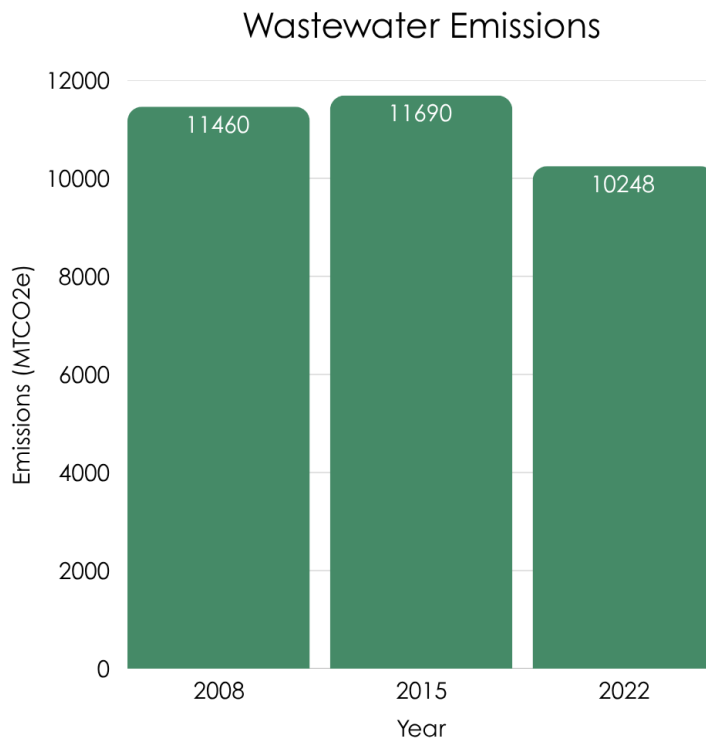


Figure 3.9: Wastewater emissions



Wastewater Emissions: -10.6%

Results

2022 Buildings and Facilities Emissions by Local Government (MTCO₂e)

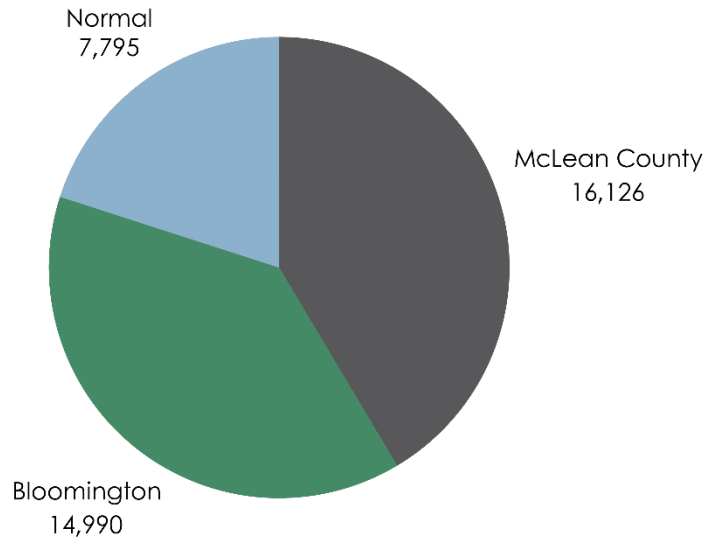


Figure 3.10: Distribution of buildings & facilities emissions by local government for 2022

LGO Emissions by Sector (2022)

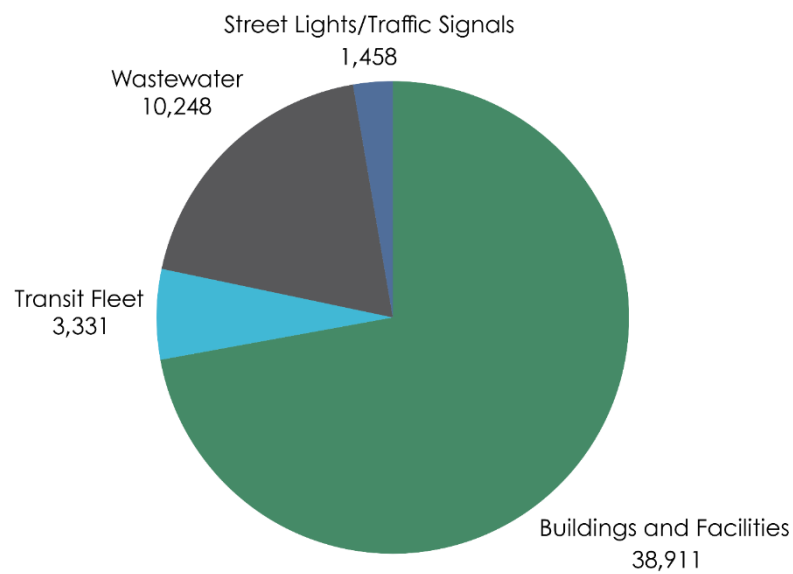


Figure 3.11: 2022 LGO emissions by sector

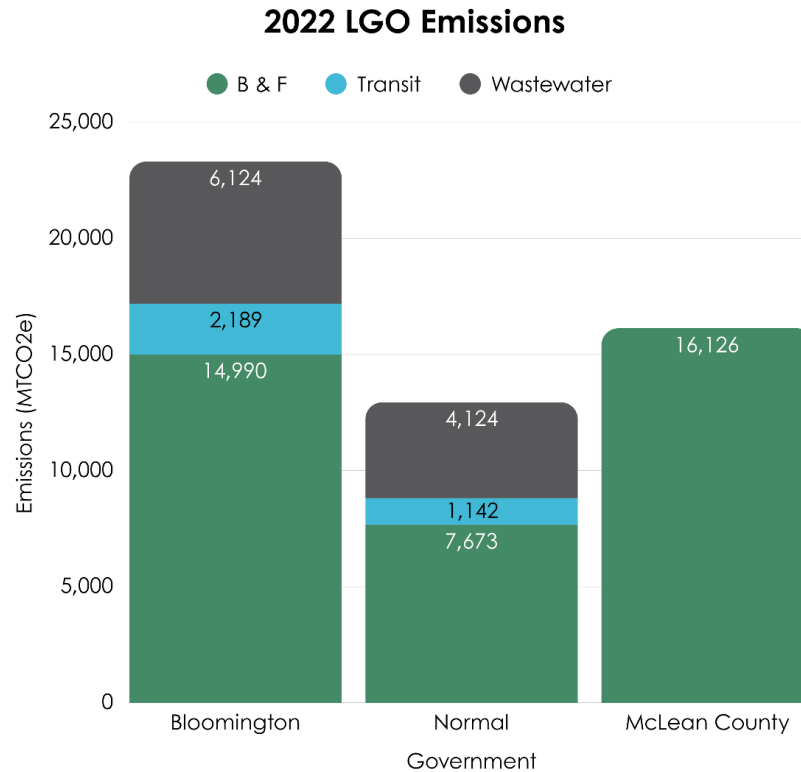


Figure 3.12: LGO emissions by local government

Inventory Year	Combined LGO Emissions (McLean County, Bloomington, and Normal)
2022	53,894 MTCO ₂ e

Figure 3.13: Combined LGO emissions 2022

Inventory Year	Bloomington-Normal LGO Emissions
2008	44,376 MTCO ₂ e
2015	45,910 MTCO ₂ e
2022	37,768 MTCO ₂ e

Figure 3.14: Bloomington-Normal LGO comparative



LGO Emissions: -14.9%

4: Community Inventory/Summary of Results

The community inventory measures GHG emissions for all non-governmental sectors, which includes stationary energy, transportation, and solid waste. Process and fugitive emissions measuring ozone-depleting substances were also newly included in this inventory. Stationary energy includes electricity and natural gas usage, and is segregated into two sectors: residential and commercial/industrial.

The community inventory is county-scale, and comparisons will take place at this scale, with the exception of stationary energy. As explained in the methodology, county-scale data for sectors such as transportation and solid waste was readily available for 2008 and 2015. This was not the case for stationary energy data, however, and scaling up previous data involves extrapolations and estimations across multiple inventories that would not be fully accurate. As such, stationary energy data was compared at the Bloomington-Normal level, with some 2022 data being scaled down to that level. 2022 will serve as the baseline year for county-scale data going forward.

Like the previous two inventories, stationary energy was the largest contributor to GHG emissions, followed by transportation and solid waste.

Stationary Energy

As mentioned previously, stationary energy includes all electricity and natural gas usage in the community from homes and businesses. Ameren and Corn Belt supplied data for electricity usage for the Bloomington-Normal community and other McLean County communities, which also includes energy from alternative energy suppliers. Natural gas data was provided by Nicor Gas. Natural gas and electricity were segregated by sector. Across all sectors, stationary energy emissions decreased compared to 2015 with the biggest decrease in commercial energy. Note that trends with emissions don't necessarily line up with trends in usage; while commercial/industrial electricity usage has dropped 23% since 2008, residential usage increased by 9.7%.

The increase in residential electricity use is likely attributable to continued population growth, increased electrification of household appliances, and changing residential energy consumption patterns, while commercial and industrial electricity use has declined because of improvements in efficiency, changes in economic activity, and a less carbon-intensive electric grid.

Primary reasons for this drop in emissions include a drop in the emissions factor electricity emission factor (MTCO_{2e} per kWh) of the regional grid in McLean County, which is in subregion SRMW of the EPA's Emissions and Generation Resource Integrated Database (eGRID) map. Since 2008, emissions per kWh have decreased 19.7% in the SRMW grid region. Note that this decrease is true across Ameren and Corn Belt territory. This is supported by a significant drop in the carbon intensity of Ameren's generation sources since 2015. The year prior, 76% of Ameren's generation was supplied by coal (EIA/Ameren, 2015); in 2022 only 34% was supplied by coal, as show in figure 4.1. While coal generation has declined substantially, natural gas and renewable generation have increased; 15% of energy in Ameren territory was

supplied by renewables in 2022. Illinois has also seen growth in solar generation since 2015; total solar capacity was 5,330 MWAC of installed solar generating capacity in 2022, with 288 MWAC being installed in that year alone. (Illinois Power Agency, 2025) ²

Over the past decade, the U.S. electric power sector has experienced a significant transition from coal-fired generation to natural gas, driven primarily by the economic advantages of low-cost natural gas, the high efficiency of combined-cycle generating technology, and the retirement of aging coal-fired power plants. In 2022, natural gas provided approximately 39.8% of U.S. electricity generation, compared with 19.5% from coal (Ameren Illinois Company, 2023).

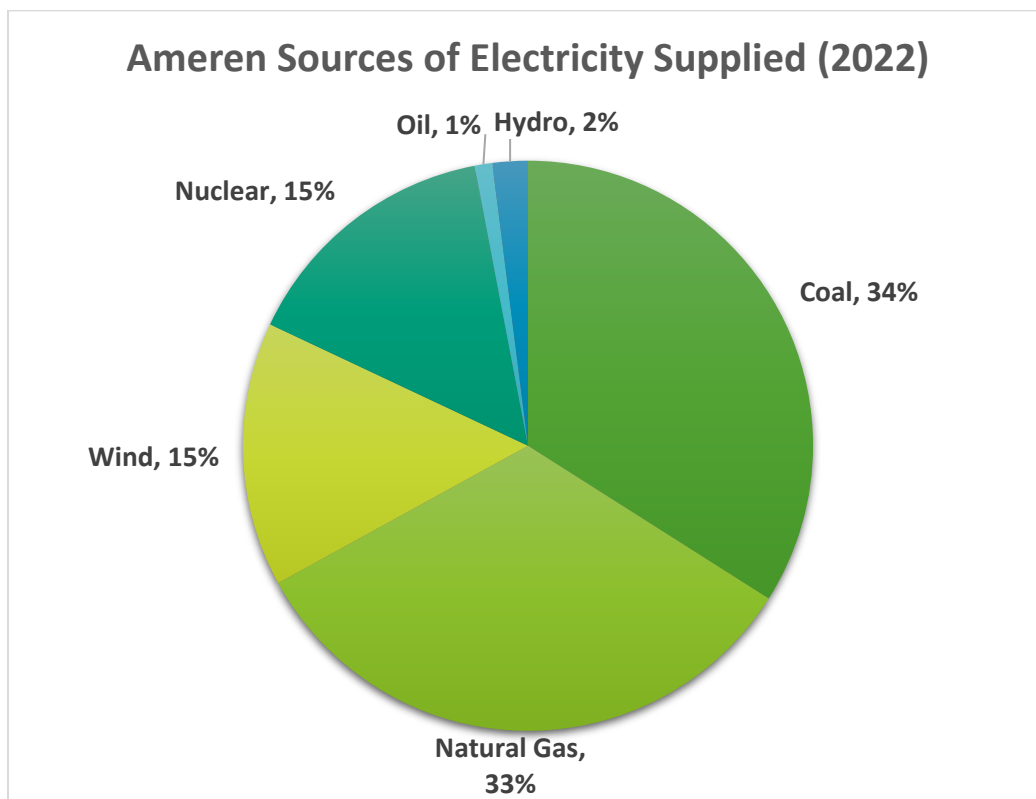


Figure 4.1: Ameren Sources of Electricity Supplied 2022. Data supplied from Ameren Environmental Disclosure Report (Ameren 2023)

² (2025 solar capacity was 6,187 MW; 2022 capacity was calculated by subtracting the solar additions in 2024 and 2023 from this figure)

SRMW-Bloomington and Normal Emissions Factor by Year

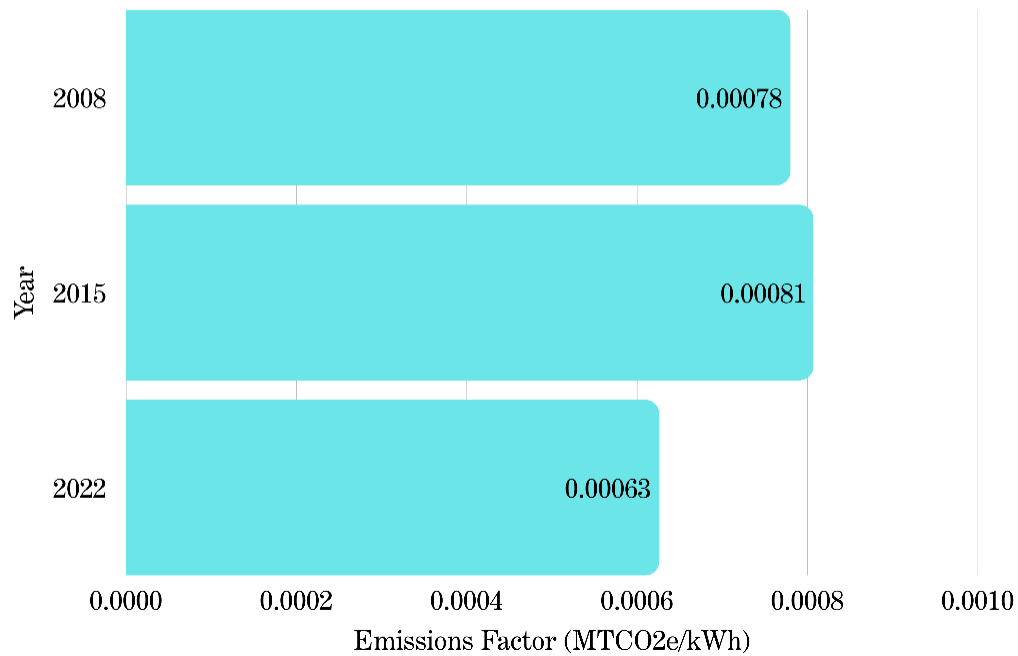


Figure 4.2: SRMW Grid Emissions Factor by Year (in MTCO₂e/kWh). This was calculated using the community electricity usage across all sectors from 2008 and 2015, and dividing it by the emissions count from both years

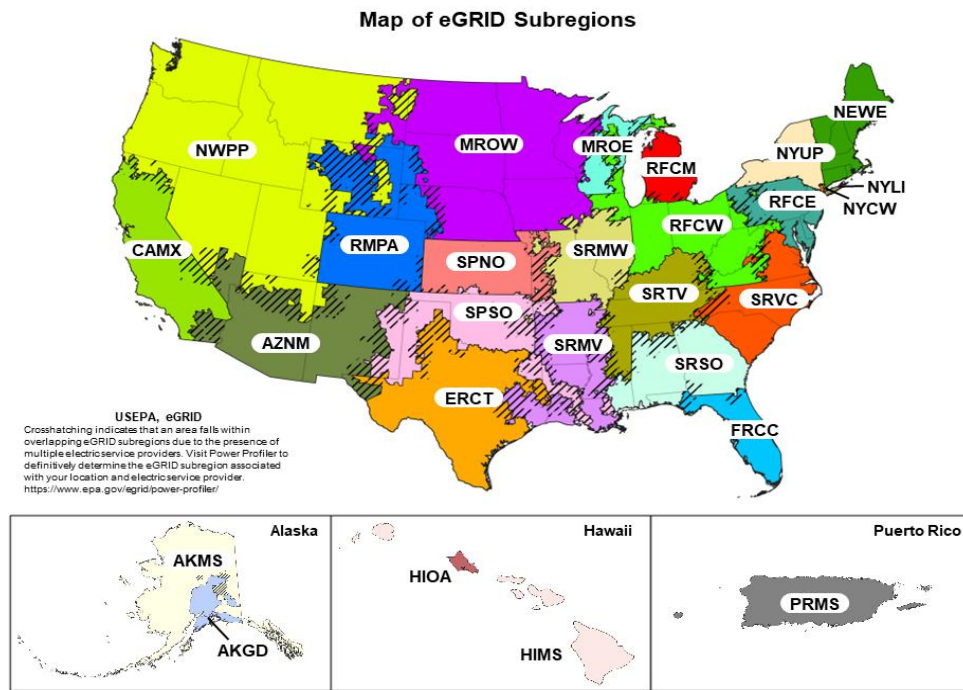


Figure 4.3: US EPA eGrid Map 2024. McLean County is in region SRMW (USEPA 2024)

U.S. utility-scale electricity generation by source, amount, and share of total in 2022¹
Data as of February 2023

Energy source	Billion kWh	Share of total
Total - all sources	4,243	
Fossil fuels (total)	2,554	60.2%
Natural gas	1,689	39.8%
Coal	828	19.5%
Petroleum (total)	23	0.6%
Petroleum liquids	16	0.4%
Petroleum coke	7	0.2%
Other gases ³	12	0.3%
Nuclear	772	18.2%
Renewables (total)	913	21.5%
Wind	435	10.2%
Hydropower	262	6.2%
Solar (total)	146	3.4%
Photovoltaic	143	3.4%
Solar thermal	3	0.1%
Biomass (total)	53	1.3%
Wood	37	0.9%
Landfill gas	9	0.2%
Municipal solid waste (biogenic)	6	0.1%
Other biomass waste	2	0.1%
Geothermal	17	0.4%
Pumped storage hydropower⁴	-6	-0.1%
Other sources⁵	11	0.3%

¹ Utility-scale electricity generation is electricity generation from power plants with at least one megawatt (or 1,000 kilowatts) of total electricity generating capacity. Data are for [net electricity generation](#).

² Small-scale solar photovoltaic (PV) systems are electricity generators with less than one megawatt (MW) of electricity generating capacity, which are not connected at a power plant that has a combined capacity of one MW or larger. Most small-scale PV systems are at or near the location where the electricity is consumed and many are [net metered systems](#). The smaller ones are usually installed on building rooftops.

³ Other gases includes blast furnace gas and other manufactured and waste gases derived from fossil fuels.

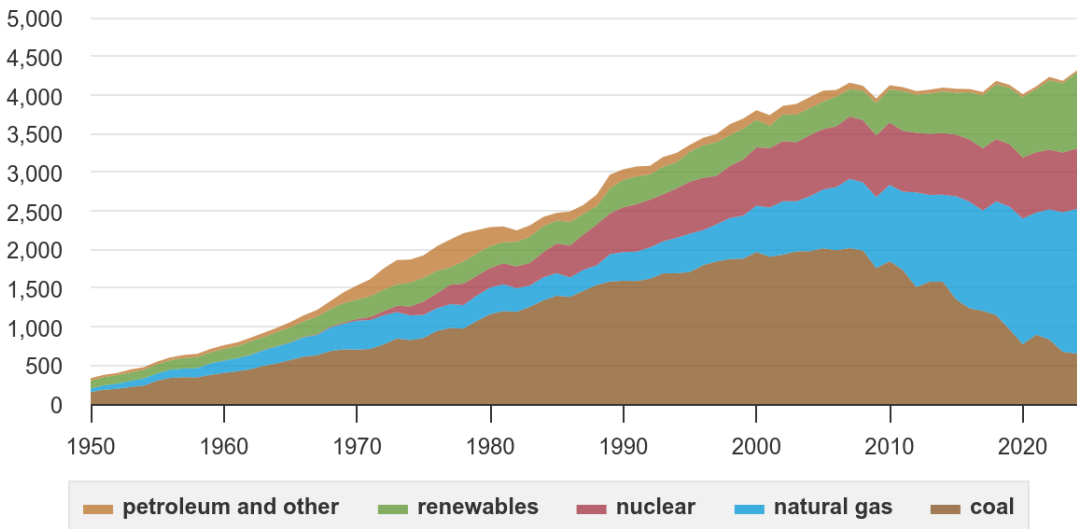
⁴ [Pumped storage hydroelectricity](#) generation is negative because most pumped storage electricity generation facilities use more electricity than they produce on an annual basis. Most pumped storage systems use fossil fuels or nuclear energy for pumping water to the storage component of the system.

⁵ Other (utility-scale) sources includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.

Figure 4.4: Utility scale generation by source (U.S. EIA, 2024)

U.S. electricity generation by major energy source, 1950-2025

billion kilowatthours



Data source: U.S. Energy Information Administration, *Monthly Energy Review*, March 2026, and *Electric Power Monthly*, January 2026, preliminary data for 2025
 Note: Includes generation from power plants with at least 1 megawatt electric generation capacity.

Figure 4.5: Electricity by major energy source (U.S. EIA, 2026)

Stationary Energy Emissions-County Scale (2022)

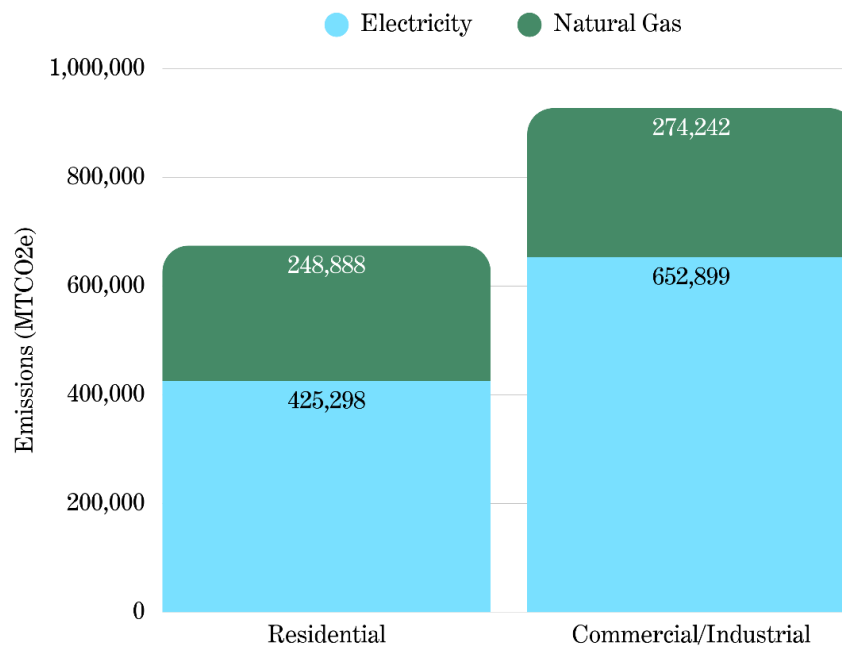


Figure 4.6: Total McLean County Stationary Energy Emissions

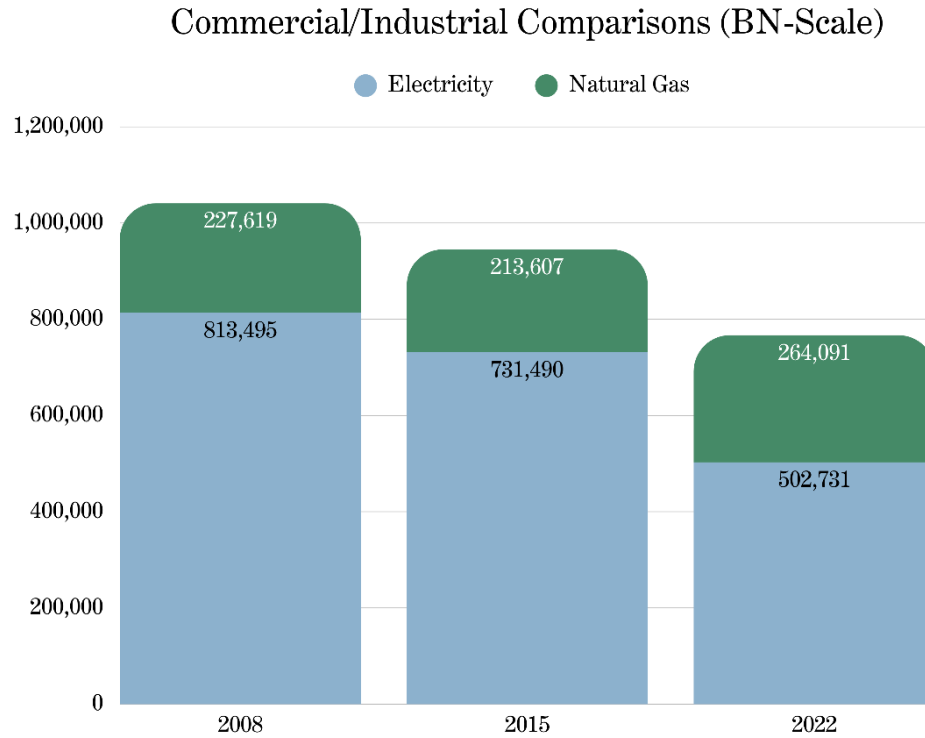


Figure 4.7: Commercial/Industrial Comparisons across years (BN-Scale)

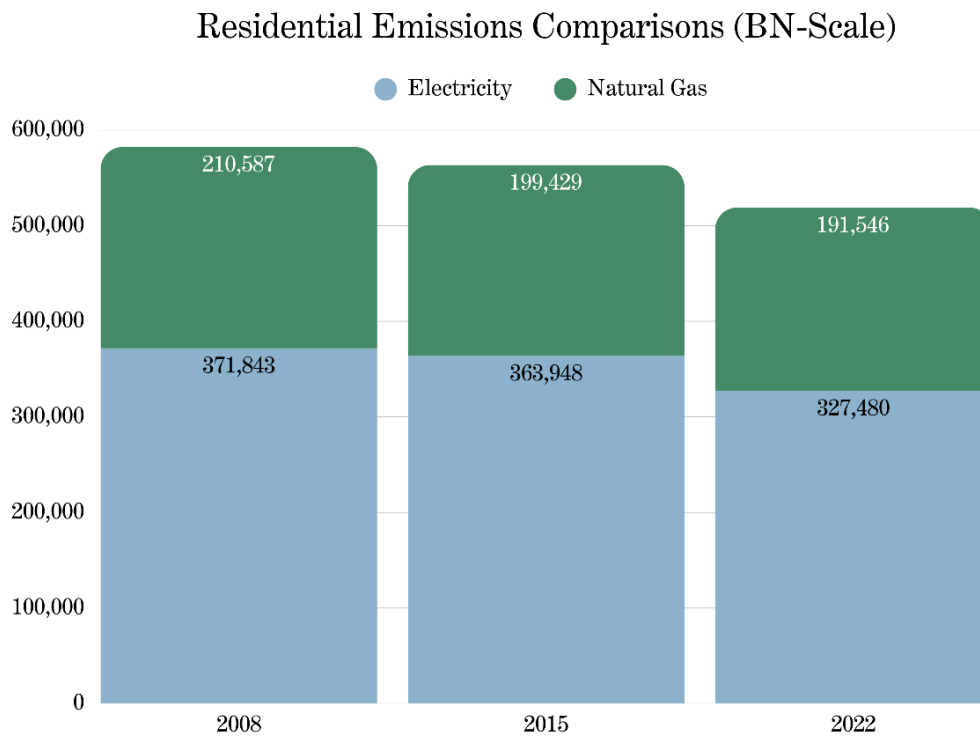


Figure 4.8: Residential Emissions Comparisons (BN-Scale)

Total Stationary Energy Emissions (County-Scale):	1,601,327 MTCO ₂ e
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Stationary Energy Emissions: -21%

Note on Municipal Aggregation and Renewable Energy Credits (RECs)

The City of Bloomington and Town of Normal participate in municipal electricity aggregation, where the communities secure an alternate energy supplier for all Ameren customers. The chosen supplier will sometimes offer to purchase renewable energy credits (RECs) on participants' behalf in relation to the amount of energy the resident consumes. RECs are delivered from an eligible renewable energy source across the country. Since these RECs are not typically generated in Illinois or directly used by customers in McLean County, purchasing unbundled RECs does not directly reduce greenhouse gas emissions physically occurring within McLean County and therefore is not reflected as an emissions reduction under the Community Protocol.

RECs are more useful as a transition mechanism to increase renewable energy adoption across the country. Energy supply options that include and invest in renewable options for the local grid will have a more profound impact on local emissions. Solar development is increasing throughout Bloomington-Normal and McLean County, in the form of distributed solar options on homes and businesses, and community solar subscriptions to arrays in Ameren territory. These solar options will continue to help decrease emissions in the county.

On-Road Transportation Emissions

On-road vehicular transport emissions were calculated based on total Vehicle Miles Traveled (VMT) for all sectors in McLean County. The total VMT was provided by IDOT in the 2022 version of their travel statistics. A standardized vehicle mix was used, utilizing ClearPath's default proportions of passenger cars and trucks, which it sources from the EPA's Motor Vehicle Emission Simulator (MOVES3) model (USEPA, 2021). Segregation was done by fuel, with gasoline VMT and diesel VMT being separate entries. These numbers give the best possible illustration of the impact of on-road vehicles on local emissions.

Conducting a detailed analysis of on-road transportation emissions is difficult and complex because it needs to account for all vehicle emissions within McLean County boundaries, as well as vehicles entering and exiting county boundaries. The inventory estimates emissions associated with vehicle travel occurring within McLean County boundaries, regardless of vehicle ownership. There was initially a large increase in transportation emissions resulting from the inclusion of countywide data instead of city and town level. This can also be explained from including county residents who commute into and out of Bloomington-Normal, who were previously not included in past inventories. McLean County is home to three interstate highways

(I-39, I-55, and I-74). Through traffic entering and leaving McLean County is difficult to allocate under community inventory protocols and is therefore excluded. Although this omission introduces some uncertainty, local travel remains the dominant source of on-road transportation emissions represented in this inventory.

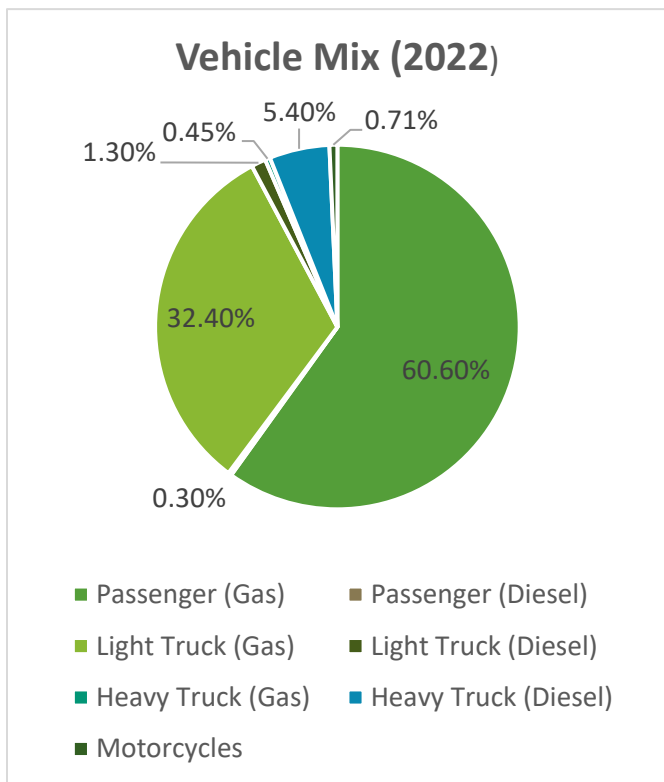


Figure 4.9

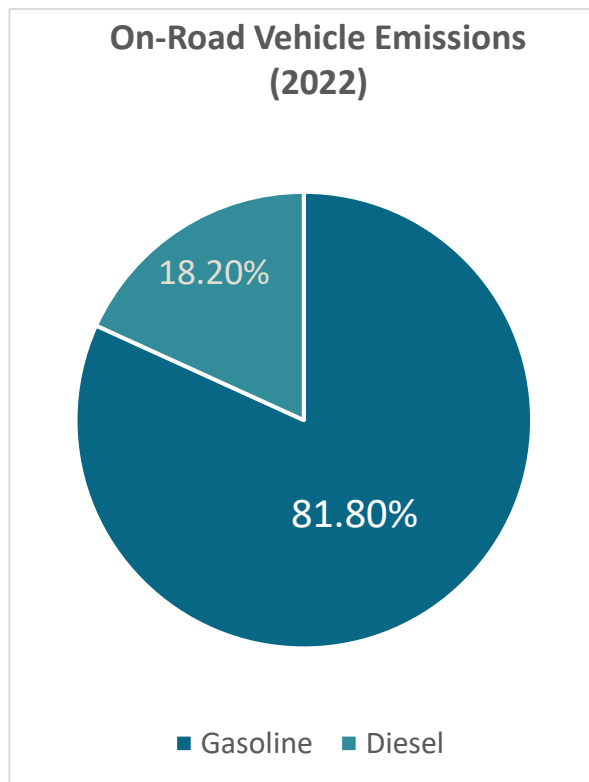


Figure 4.10

Data for Figure 4.9 was supplied by IDOT's Travel Statistics for the year 2022; IDOT publishes Travel Statistics annually (IDOT, 2022).

VMT Emissions by Year (County-Scale)

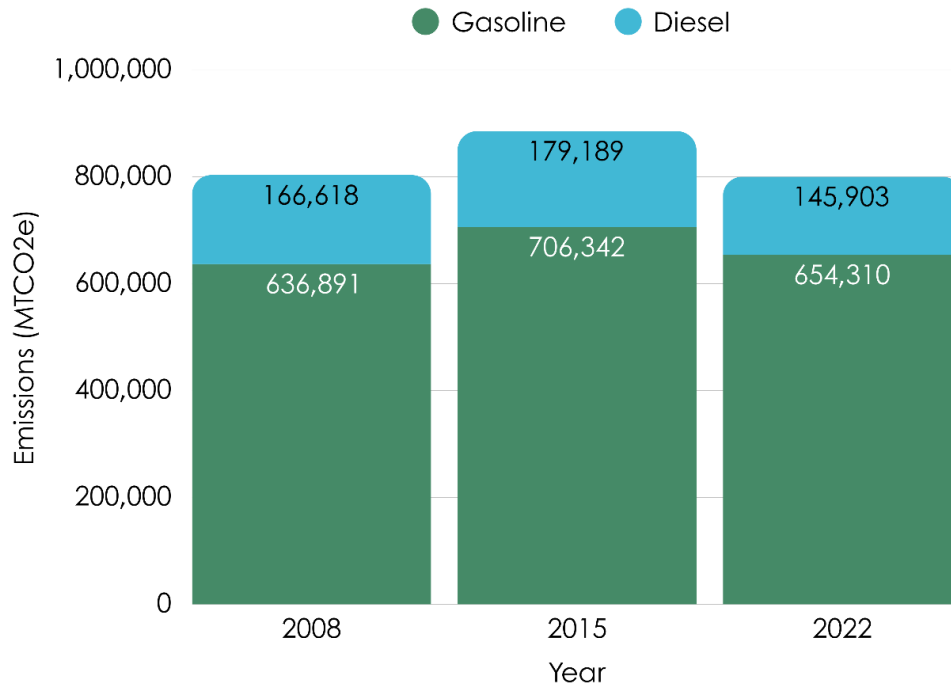


Figure 4.11: VMT emissions by year



Vehicle Emissions: **-0.41%**

Overall, 2022 vehicle emissions are consistent with emissions in 2008. It should be noted that nationwide, while total VMT emissions are increasing, total CO₂/mile is decreasing. (USEPA, 2024). This illustrates that improvements in vehicle efficiency are partially offsetting continued growth in vehicle travel.

Rail Travel Emissions

Rail travel emissions are difficult to estimate and largely out of the control of local governments, since all rail lines are part of long-distance and regional networks. However, rail travel emissions account for only 0.33% of all community emissions for 2022, making them a less significant source of emissions. Amtrak, the only passenger rail line serving the area, has kept the same service frequency since 2015, with 10 trains running daily through county boundaries.

A FOIA Request was made to Amtrak to request fuel usage for these train routes, but was unable to be fulfilled. As an alternative, ICLEI's Rail Transportation Calculator was used to estimate

rail emissions for passenger and freight rail emissions. Direct comparison with previous inventories would not be methodologically valid because of the substantially different calculation methods.. Note that from 2008 to 2015, rail emissions saw no change due to fuel usage and route frequency remaining the same for both years. While route frequency remained the same for 2022, for the 8 *Lincoln Service* trains, Amtrak switched to Siemens Chargers locomotives in 2021, which are diesel electric and more efficient than the previous GE Genesis locomotives (Amtrak, 2019). Without fuel usage data from Amtrak, we cannot assess what emissions changes may have occurred.

Two major commercial freight lines, Norfolk Southern and Union Pacific, run through the county. Union Pacific also owns the tracks Amtrak runs on. Smaller class 3 railroads also run throughout the county. These emissions were calculated using ICLEI's Rail Transportation Calculator for Class I/II/III Freight and passenger locomotives. As such, like with passenger rail, emissions will not be compared to 2015, which was calculated using studies from the McLean County Regional Planning Commission (note that the baseline year for freight rail emissions is 2015). Regardless, rail emissions make up only a small amount of transportation emissions, as shown in the emissions charts below.

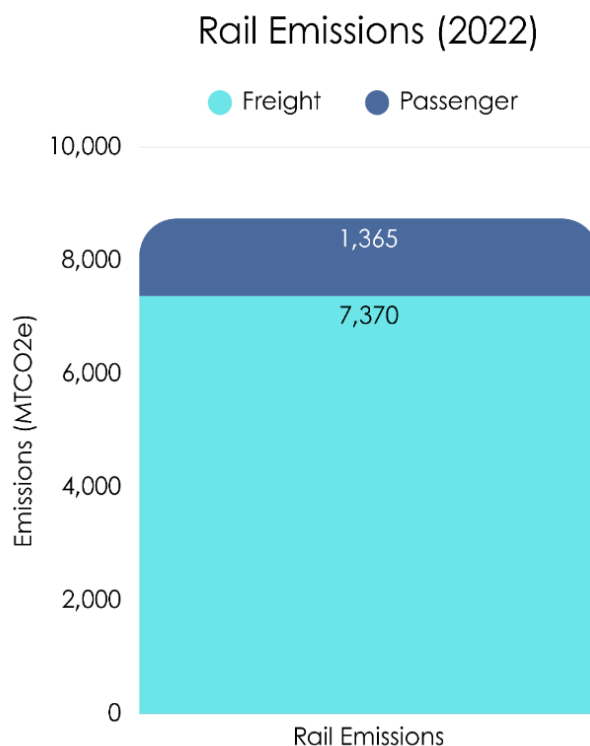


Figure 4.12: Rail emissions

Air Travel Emissions

Community air emissions were calculated using fuel data for jet fuel and av-gas, supplied by Central Illinois Regional Airport (CIRA). Methods for calculating total cargo tonnage was unavailable. Cargo operations contribute additional aircraft fuel consumption that could not be separately quantified. Total emissions increased compared to 2015. Air travel data was unavailable for 2008.

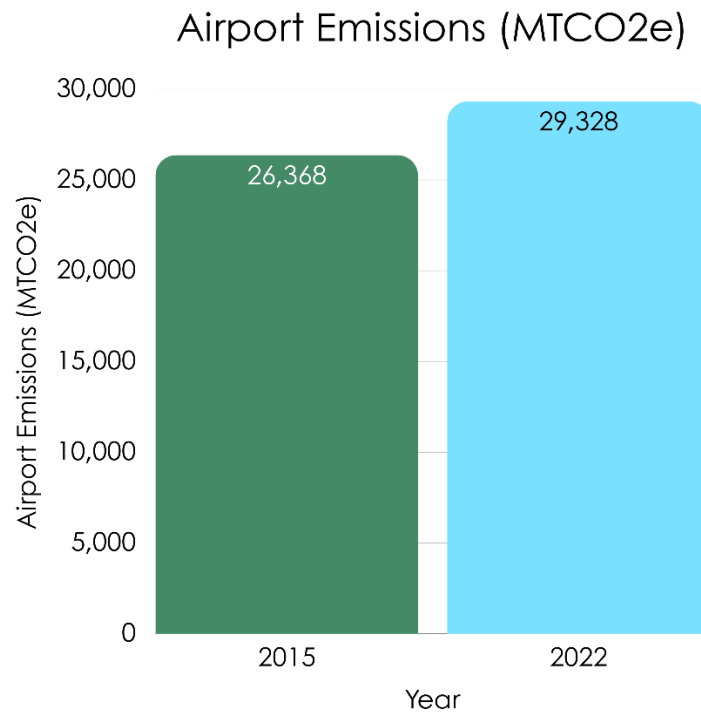
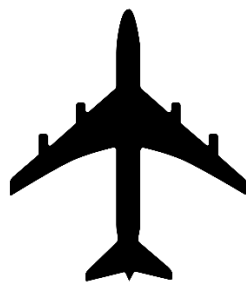


Figure 4.13: Air travel emissions



Airport Emissions: +11.3%

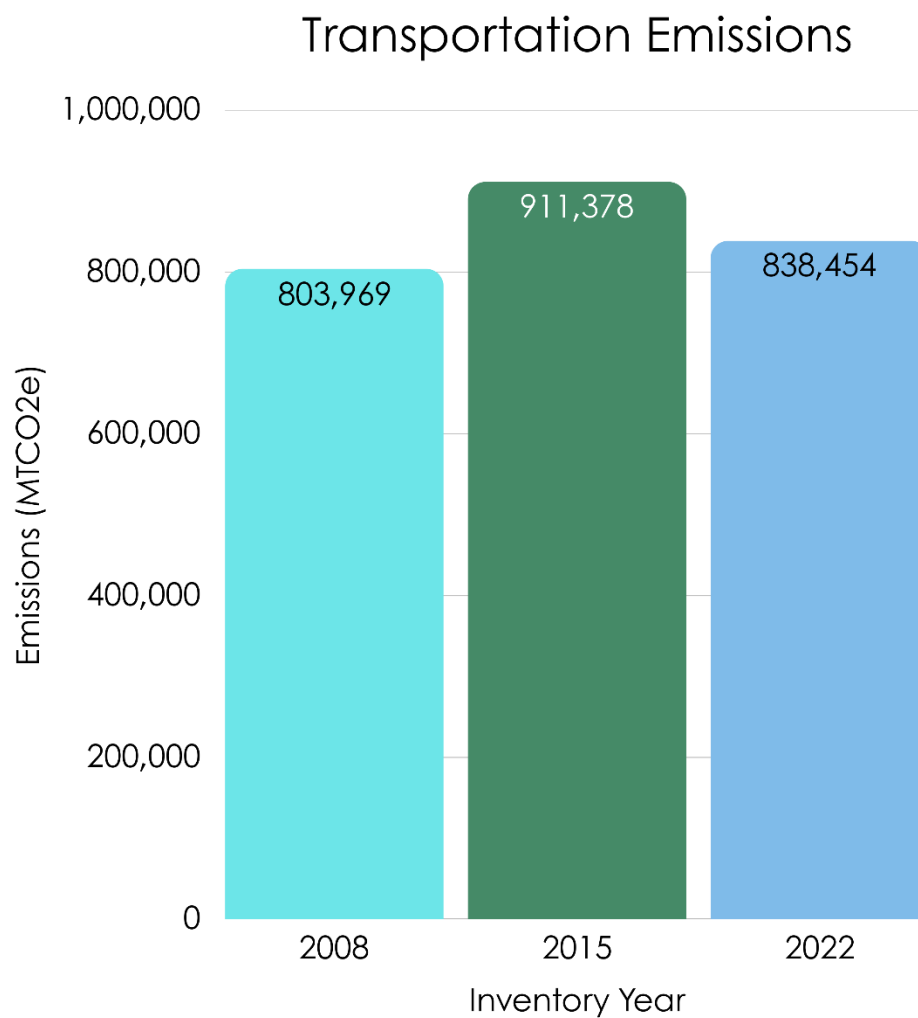
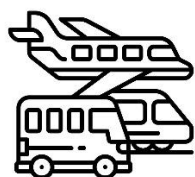


Figure 4.14: Total Transportation Emissions by Year³



Transportation Emissions: +4.3%

³ In 2015, there is a spike in transportation emissions caused by a spike in vehicle miles traveled compared to 2008.

Transportation Emissions Mix (2022)

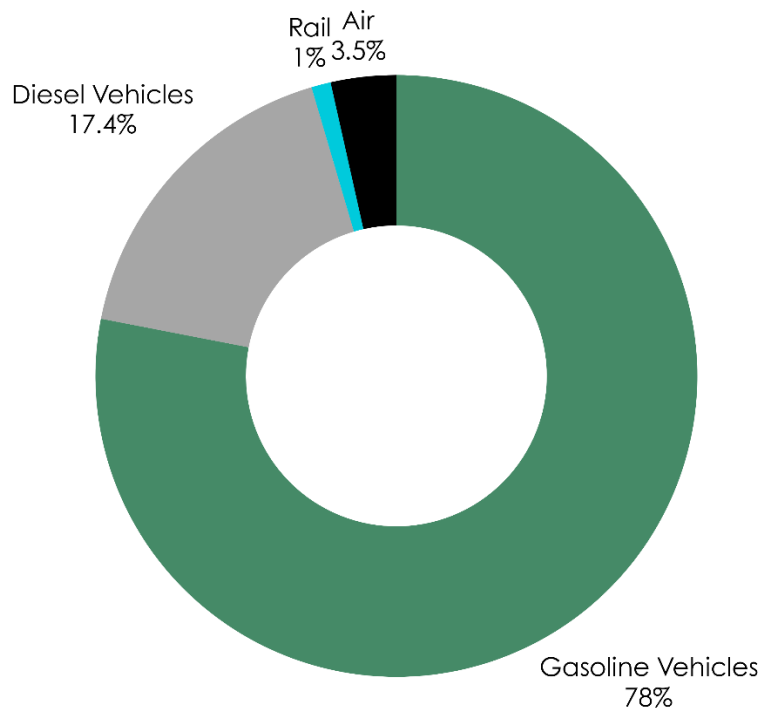


Figure 4.15: Transportation emissions by type

Solid Waste Emissions

Per ICLEI protocols, communities report on the emissions of solid waste generated by the community even if the landfill/waste disposal site is not located within community boundaries. This data includes emissions from decaying organic material in landfills, which release emissions including CO₂, Methane (CH₄), and nitrous oxide (N₂O). Recall that CH₄ and N₂O have nearly 21 and 310 times more global warming potential than CO₂, demonstrating the importance of including landfill emissions.⁴ Process emissions are included in the stationary energy and transportation inventory.

Previous inventories solely measured emissions from landfilled waste, which was scaled down from county level to local (Bloomington-Normal) level. In this inventory, solid waste data includes emissions from landfilled waste, incinerated waste, organic waste, and emissions from closed landfills. The inclusion of more emissions data for 2022 makes comparisons across years difficult. As such, landfilled waste (scaled up to the county level) is the only solid waste data compared across years, while total solid waste emissions for 2022 include all new emissions

⁴ Global warming potentials shown are those used by the ICLEI/ClearPath methodology to maintain consistency among inventories.

data. The total landfilled waste (TLW) is measured in tons. Note that the McLean County landfill reached capacity and was closed in 2018 (Ecology Action Center, 2019), and currently all landfilled waste is transported out of McLean County.

Year	Emissions (County-Scale)	Percent Change
2008	61,690 MTCO ₂ e	0%
2015	60,476 MTCO ₂ e	-2%
2022	42,436 MTCO ₂ e	-30%

Figure 4.16, comparing landfilled waste emissions across year (not including new emissions data exclusive to 2022)

Total Solid Waste Emissions:	100,024 MTCO₂e
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Process and Fugitive Emissions

This inventory newly includes process and fugitive (P&F) emissions. ClearPath offers different categories for process and fugitive emissions, but the most relevant category for McLean County is hydrofluorocarbon (HFC) and refrigerant emissions. These include refrigerant gases, foams, aerosols, solvents, and fire extinguishing HFCs. These emissions were calculated using ICLEI's Fluorinated Gas Inventory Tool, which uses EPA state data along with user-entered population data. This a new tool, that was not previously available for 2008 and 2015. Because historical activity data were unavailable, the 2022 process and fugitive emissions estimate was applied to the 2008 and 2015 inventories as a methodological approximation to facilitate comparison across inventory years. This approximation is intended solely to maintain methodological consistency and should not be interpreted as evidence that actual emissions remained constant over time.

This category does not include any emissions related to fossil fuel extraction processes, since McLean County is not home to any major fossil fuel extraction industry.

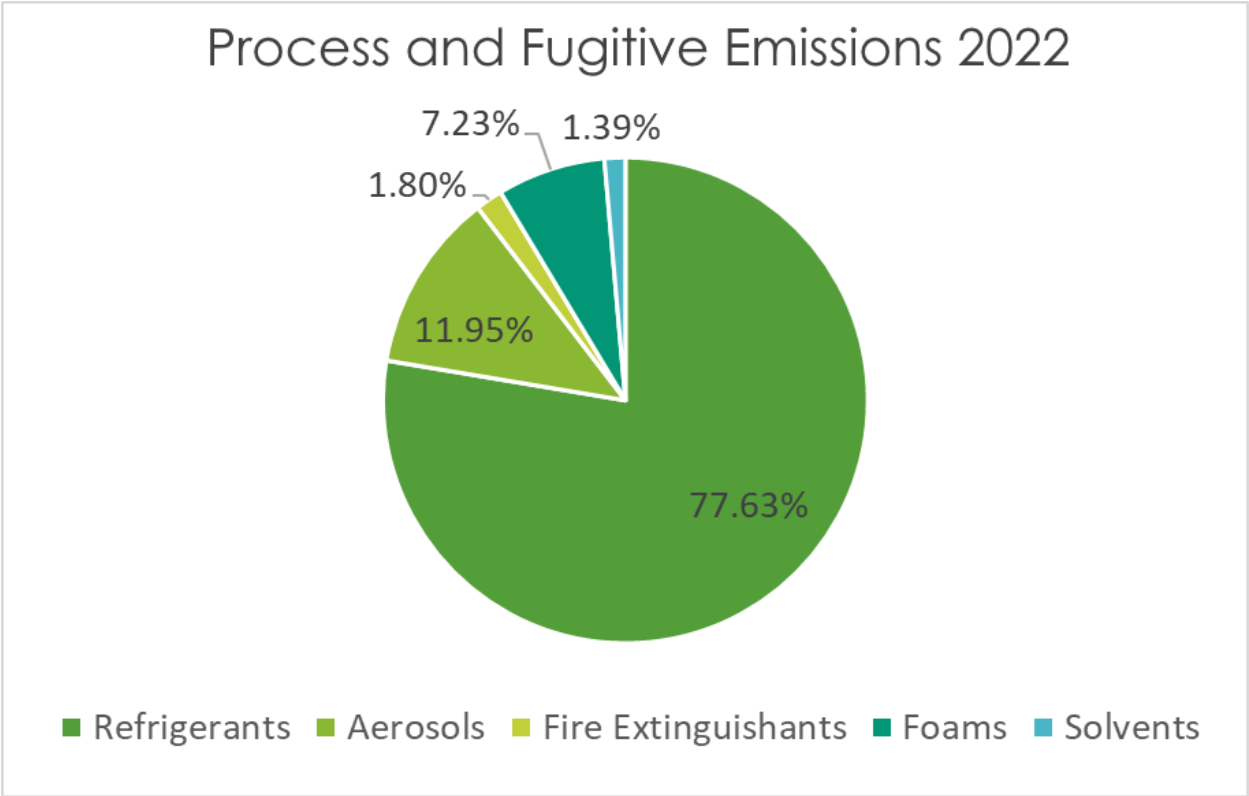


Figure 4.17: Process and fugitive emissions

Total Process & Fugitive Emissions	76,510 MTCO ₂ e
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Results

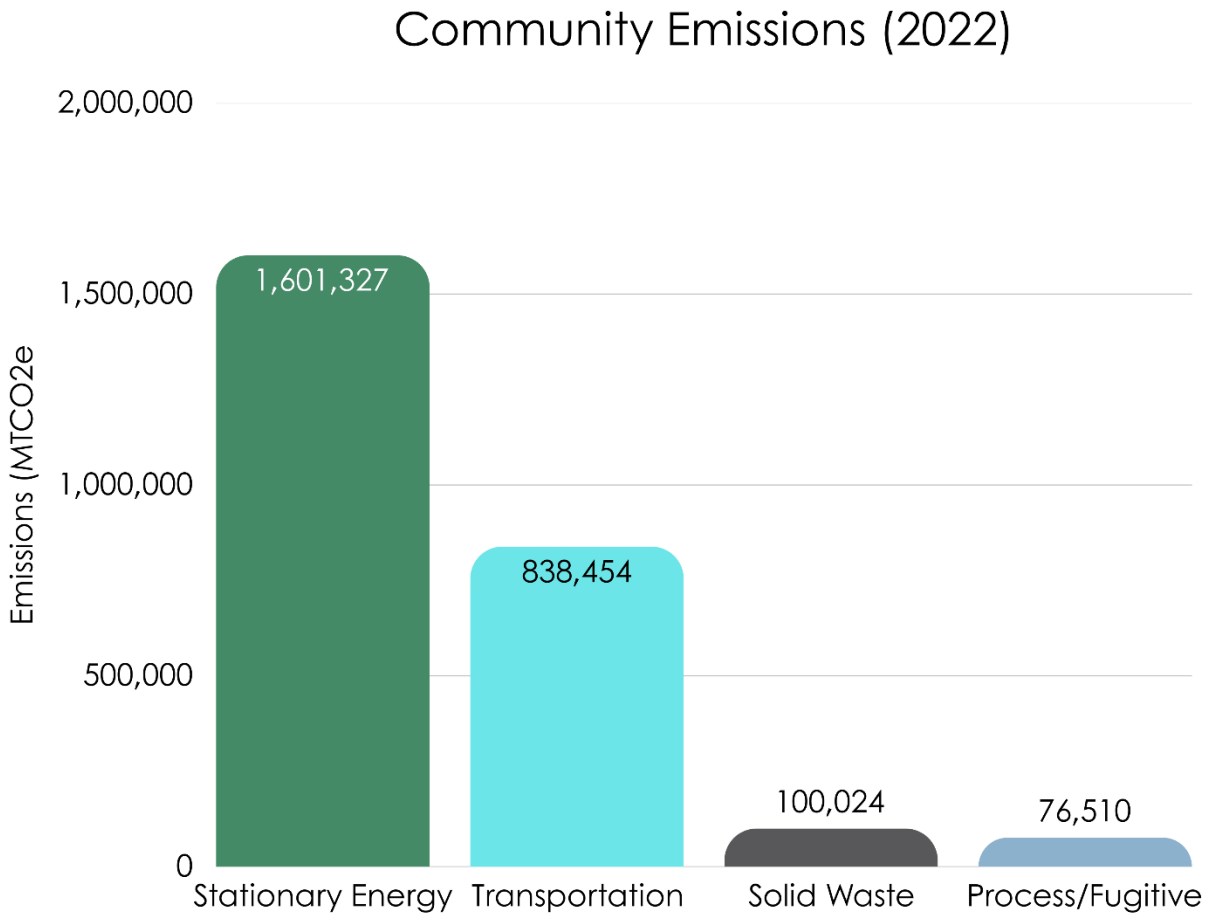


Figure 4.18: 2022 Community Emissions

Total Inventoried Community Emissions (2022)	2,616,315 MTCO ₂ e
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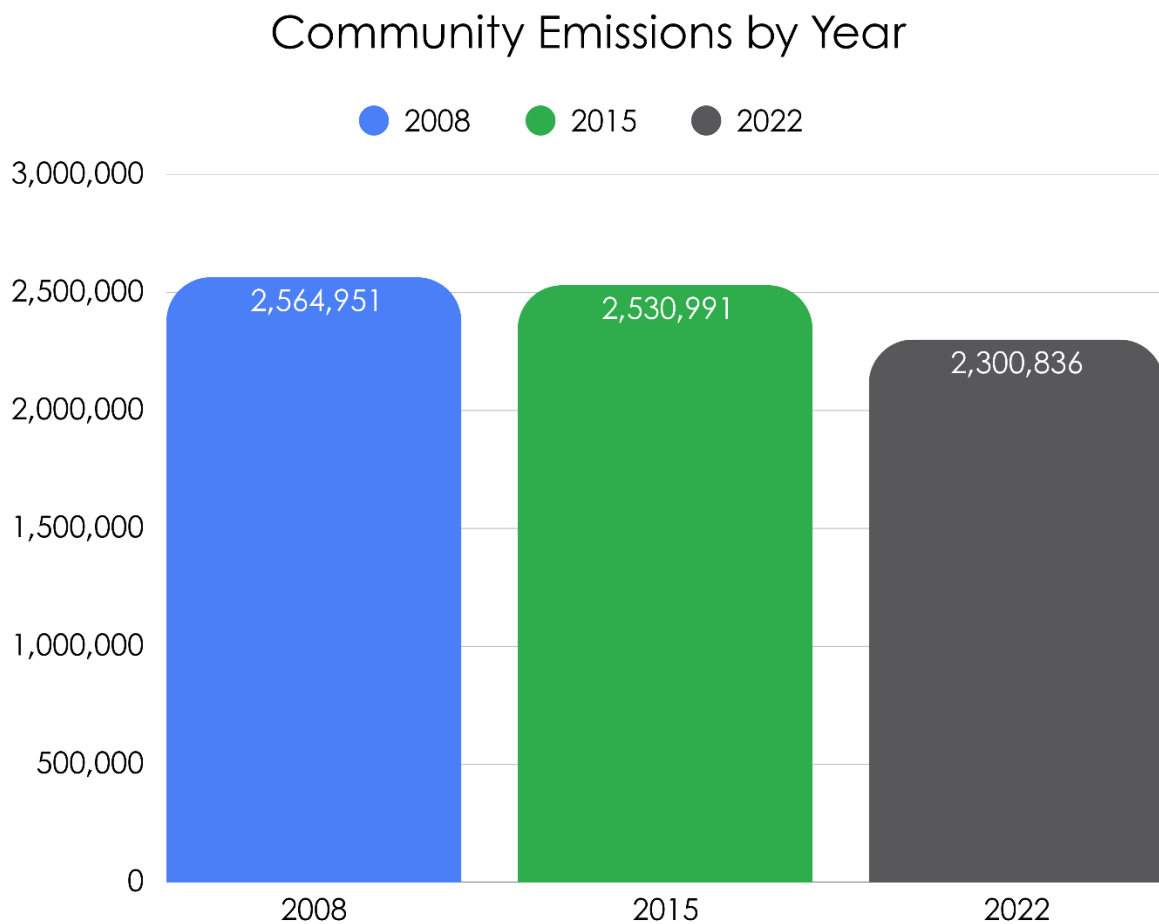


Figure 4.19: Community Emissions across inventory years. Note that these figures are the total emissions that are comparable across years. The 2022 figure leaves out sectors such as Air, Rail, and some Solid Waste sectors, since these are not comparable across years; these sectors were also removed from the 2008 & 2015 figures to ensure consistency. Comparable inventory totals are presented separately from total inventoried emissions to distinguish methodological changes from actual emissions trends. The total inventoried community emissions for 2022 are listed above.



Total Community Emissions: -9.4%

5: Conclusion

Summary of Results:

In 2022, the countywide greenhouse gas inventory totaled 2,670,209 MTCO₂e, consisting of 2,616,315 MTCO₂e from the community inventory and 53,894 MTCO₂e from Local Government Operations. For historical comparisons with the 2008 and 2015 inventories, adjusted Bloomington-Normal values are presented separately because previous inventories did not include the remainder of McLean County.

When adjusting this inventory to match the Bloomington-Normal scale, emissions fell 10.7% from 2008 levels. All community emissions decreased compared to 2008, with the exception of transportation. LGO emissions at the Bloomington-Normal level also decreased compared to 2008 emissions, mainly due to decreased energy usage at LGO facilities, as well as a drop in the emissions factor for the regional SRMW grid, which is explained below.

Consistent with national emissions inventories, stationary energy remained the largest source of community greenhouse gas emissions, followed by transportation (USEPA, 2022). Despite this, stationary energy also saw the biggest drop in emissions, falling by 21% compared to 2008 levels; the biggest drop being in the commercial energy sector. Two factors explain this drop: decreased energy usage, and decreased carbon intensity for McLean County's grid. According to data from the U.S. Energy Information Administration, energy usage across Illinois decreased compared to 2015 (U.S. EIA, 2026), coinciding with the nationwide drop in energy usage due to the pandemic two years earlier (U.S. EIA, 2021). Across all sectors, while natural gas usage increased by 4%, electricity usage dropped by 12.8% compared to 2008. Meanwhile, the emissions factor for grid region SRMW has decreased by 19.7% since 2008. Future inventories will determine whether these observed decreases represent sustained long-term trends or temporary changes associated with energy markets, economic activity, and utility generation mixes. Although VMT declined by approximately 4% since 2008, transportation emissions remained relatively stable because changes in travel activity, fleet composition, and vehicle efficiency partially offset one another.

Scope 2 and Scope 3 emissions declined substantially because of lower electricity emission factors and reduced landfill emissions, more than offsetting a modest increase in Scope 1 emissions.

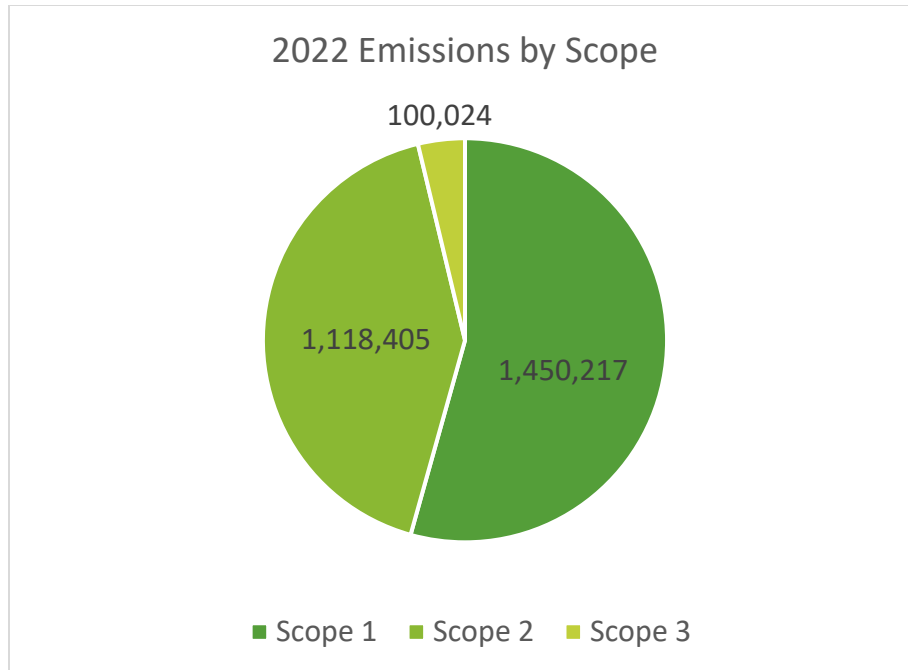


Figure 5.1: Segregated emissions by scope

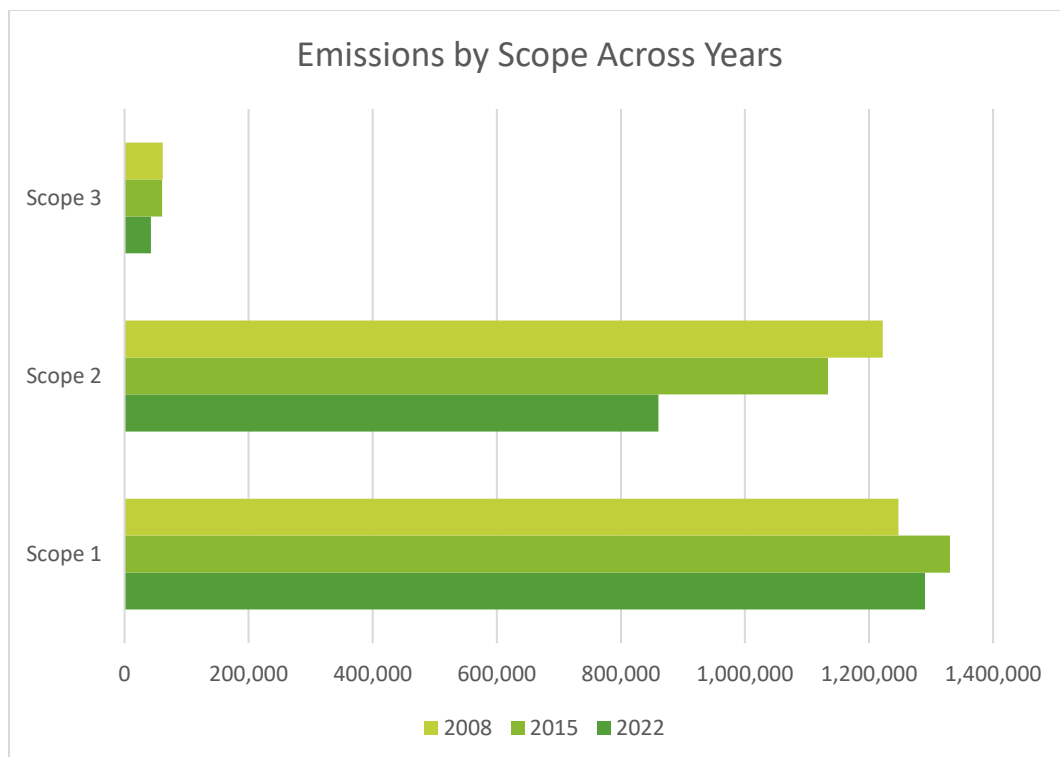


Figure 5.2: Comparing emissions by scope across years. Scope 2 represents indirect emissions associated with purchased electricity and therefore declined primarily because of reductions in the carbon intensity of the regional electric grid.

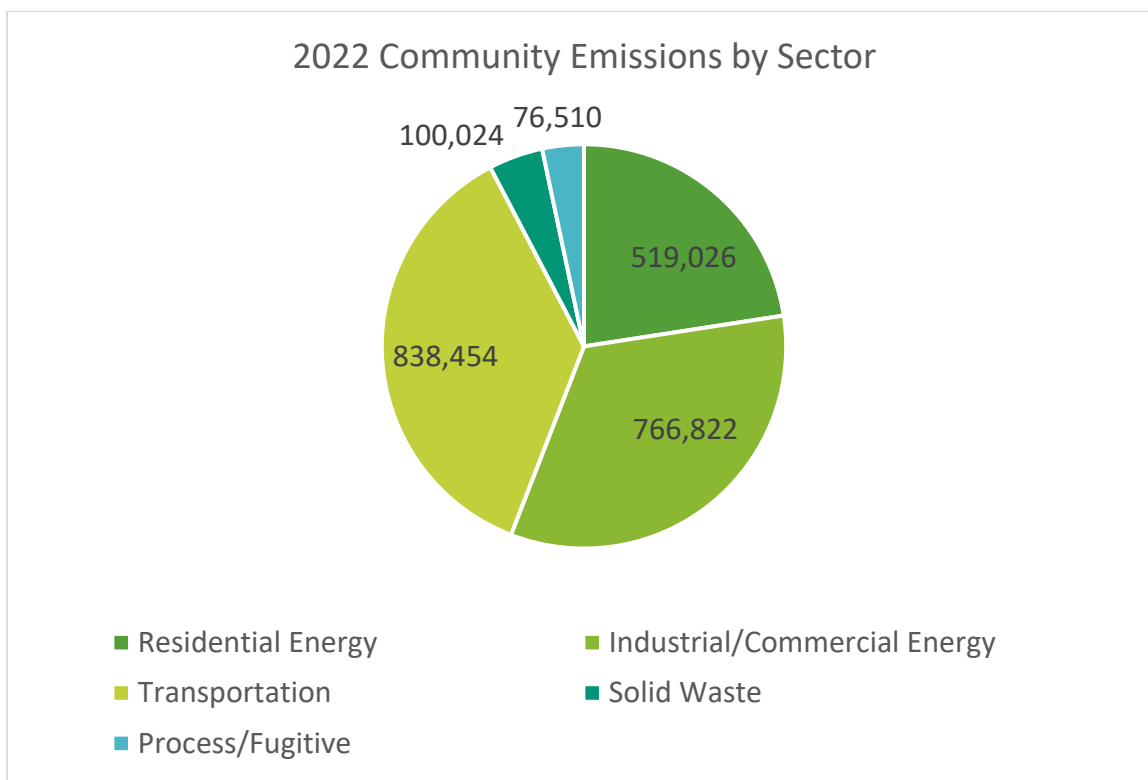


Figure 5.3: Community Inventory Emissions by Sector (McLean County, 2022)

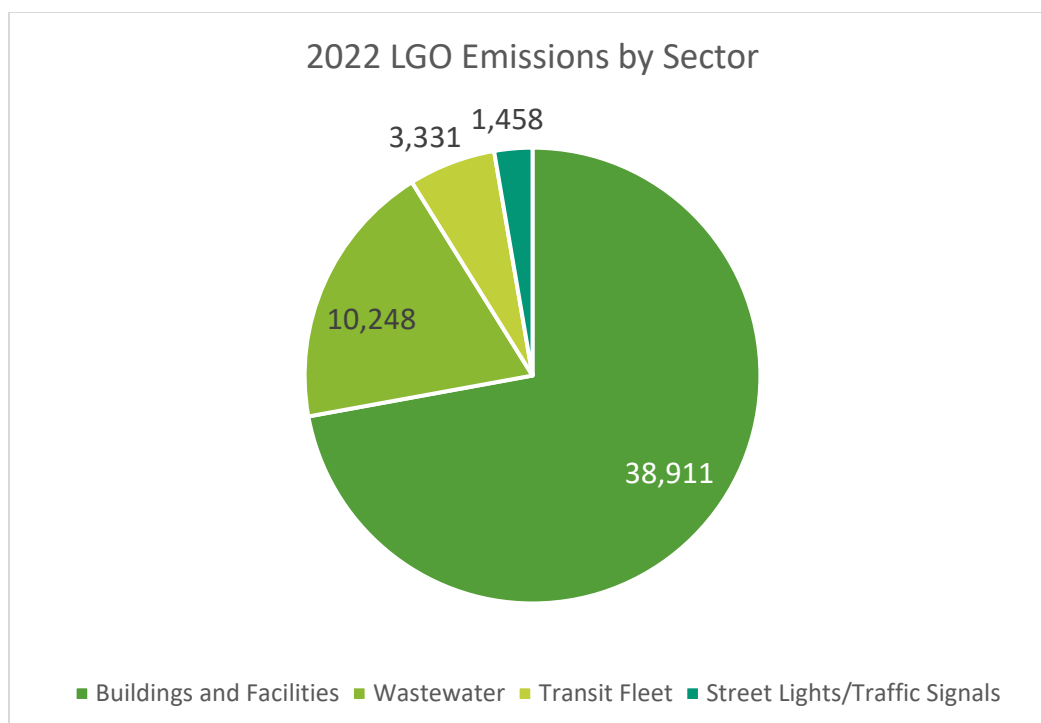


Figure 5.4: LGO Inventory Emissions by Sector (McLean County, Bloomington, and Normal, 2022)

Bloomington-Normal Inventory Comparisons by Year

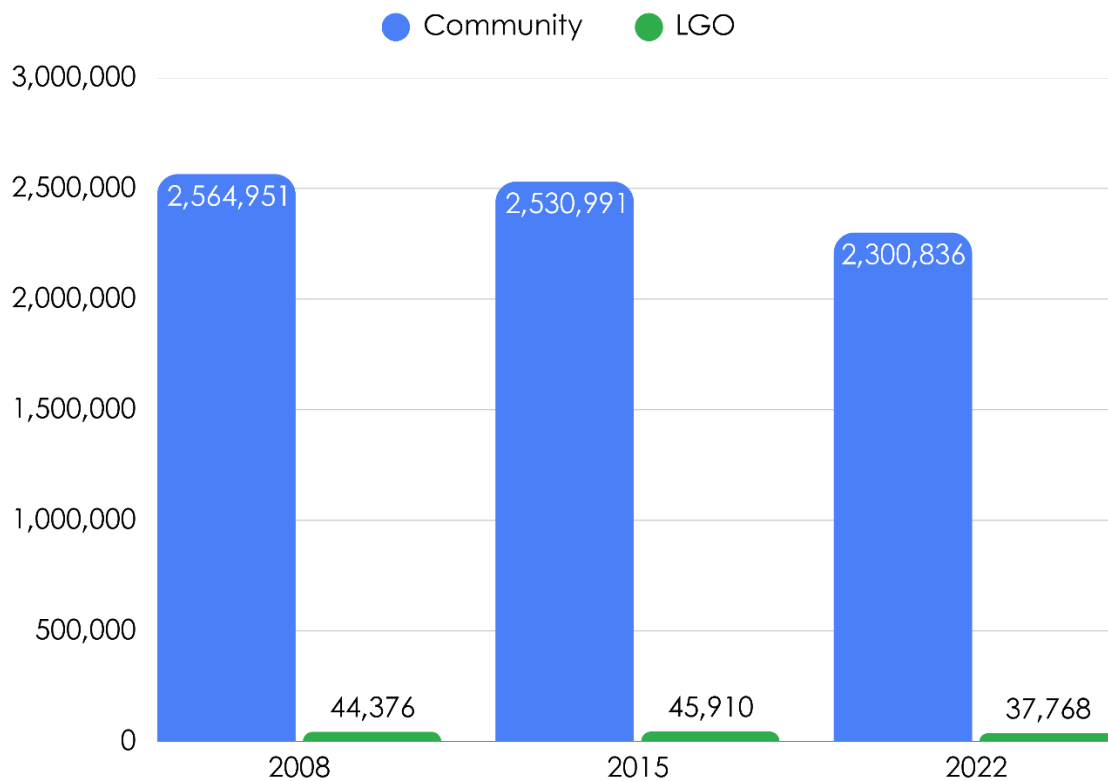


Figure 5.5: Inventory Comparison to Previous Years;

City/Region	Year	Population	Community-Scale Emissions	Emissions per capita
McLean County, IL	2022	170,178	2,616,315	15.4
Madison, WI	2022	277,414	4,075,568	14.7
Bloomington, IN	2022	79,168	1,283,331	16.2
Skokie, IL	2022	65,355	733,591	11.2
Columbia, MO	2022	128,392	2,310,000	18
Dubuque, IA	2022	58,877	744,112	12.6

Figure 5.6: Comparisons to other Midwest cities. Per-capita comparisons should be interpreted cautiously because inventories vary in methodology, inventory boundaries, treatment of industrial emissions, and inclusion of process or fugitive emissions.

Next Steps

The 2022 inventory provides an update to 2015 and to the baseline year of 2008. This inventory also sets a baseline for measuring emissions countywide, as well as previously unaccounted for emissions such as process and fugitive emissions. These inventories, along with future inventories, allow McLean County, Bloomington, and Normal to better understand their energy footprint, track emission trends, and track progress towards meeting emission reduction targets. While some communities conduct greenhouse gas inventories every two years, a five-year update interval provides a practical balance between analytical value, staff resources, and data availability.

The findings shown in this 2022 inventory will be used by the Ecology Action Center to develop the McLean County, Bloomington and Normal Community Energy Strategic Plan, or CESP. This CESP will establish specific goals and strategies for reducing emissions and energy usage across all sectors and categories. Emissions and energy usage reductions will facilitate local cost savings, increase local livability, improve local air quality, help defer or reduce the need for future energy infrastructure expansion, as well as encourage local job creation for fields in renewable energy. The CESP will be most effective with broad community participation in its implementation.

APPENDIX

ICLEI PROTOCOL INVENTORY PRINCIPLES

The ICLEI Protocol identifies five general principles to aid in conducting a GHG inventory.

- **Relevance:** The greenhouse gas inventory shall appropriately reflect the GHG emissions of the local government or the community within the local government area and should be organized to reflect the areas over which local governments exert control and hold responsibility in order to serve the decision-making needs of users.
- **Completeness:** All greenhouse gas emission sources and activities within the chosen inventory boundary shall be accounted for. Any specific exclusion should be disclosed.
- **Consistency:** Consistent methodologies to allow for meaningful comparisons of emissions over time shall be used. Any changes to the data, inventory boundary, methods, or any relevant factors in the time series, shall be disclosed.
- **Transparency:** All relevant issues shall be addressed in a factual and coherent manner to provide a clear audit trail, should auditing be required. Any relevant assumptions shall be disclosed and include appropriate references to the accounting calculation methodologies and data sources used, which may include this Protocol and any relevant Supplements.
- **Accuracy:** The quantification of greenhouse gas emissions should not be systematically over or under the actual emissions. The degree of accuracy should be sufficient to enable users to make decisions with reasonable assurance as to the integrity of the reported information.

Other Local and State Initiatives

Local

- A one-mile extension of Constitution Trail was completed along Gregory Street in Normal; an \$800,000 state grant will help expand Constitution Trail south through Bloomington (Hughes, 2025), along with a \$1 million federal grant to expand the trail west through Normal
- The Route 66 Trail is being expanded to connect McLean and Funk's Grove (Holden & Warnecke, 2025).
- Connect Transit was awarded a \$9 million grant to expand service in downtown Bloomington and add an additional 90 bus stops (Hoban, 2025)
- The Ecology Action Center, in partnership with StraightUp Solar and the Midwest Renewable Energy Association, launched the Grow Solar BN group solar program to discount the cost of rooftop solar for homeowners
- The Ecology Action Center, in partnership with PureSky Energy, launched a community solar program to provide clean energy and discounts on energy bills to Bloomington-Normal residents

- Illinois State University drafted a Sustainability Strategic Plan in 2023

State

- In 2024, the Residential and Commercial Stretch Code was adopted, increasing energy efficiency standards for new construction
- Illinois passed a law tasking state public schools to teach the impacts and solutions to climate change, either through new classes or as lessons in existing classes in 2024
- \$70 million was invested for electric vehicle charging
- As of 2024, Illinois received 14.7% of its electricity from renewables, with a capacity of 16,513 MW for wind and solar in the first quarter of 2025

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“Twin Groves Wind Farm”: Photo supplied by EAC Staff, 2023

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