Lewisburg Borough Climate Action Strategy

For a Healthy and Sustainable Future

Adopted by the Borough of Lewisburg on June 20th 2023

BOROUGH OF LEWISBURG PENNSYLVANIA

ICLEI Local Governments for Sustainability

Bucknell UNIVERSITY

pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION

LEWISBURG NEIGHBORHOODS CORPORATION

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Message from Mayor Alvarez

The Climate Imperative

Since the Industrial Revolution, humans (largely in the Global North) have burned fossil fuels like coal, methane, and oil to support unprecedented levels of economic and population growth. Burning these fossil fuels has released carbon dioxide, methane, and other pollutants into our atmosphere, slowly warming our planet. The changing climate of our planet has already and will continue to subtly wreak havoc on the delicate ecosystems that sustain human life on this planet. Biodiversity loss, species extinction, and severe hydrological events are just some of the primary ways we experience climate change. The secondary and tertiary effects of climate change are more unpredictable.

Climate change, however, can be an opportunity for communities across the globe to come together and create a better world that is more healthy, equitable, and sustainable – this is the approach that Lewisburg aspires to.

This climate action plan highlights key ways we want our borough to change for the better. We want a borough that is:

- Walkable and bike-able,
- Exceptionally prepared to deal with flooding and other disasters,
- More energy efficient, and
- Robustly green with a large variety of healthy, native street trees.

These are just some of the action items that help us create a better place to call home and adapt to a changing climate.

I look forward to working with borough residents and community partners to implement this vision.

The Honorable Mayor Kendy Alvarez

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Executive Summary

Our changing climate presents Lewisburg with a challenge, but also an opportunity to forge a better quality of life for residents. Doing nothing will ensure things get worse – by working together, we can ensure a thriving Lewisburg for future generations. This plan identifies 13 community-informed strategic objectives with 53 measurable action items in the areas of transportation, energy, buildings, waste, flooding reduction and response, carbon sequestration, and disaster risk reduction. In addition, it includes an inventory of the Borough's greenhouse gas emissions (GHGs) and public opinion on these topics. The intermediate goal is a 50% reduction of greenhouse gas emissions by 2035 and net-zero by 2050. Key takeaways from this climate action planning process found that:

- Transportation poses the most significant source of greenhouse gasses, representing 58.7% of all emissions in the borough.
- Lewisburg's per capita transportation emissions measured in metric ton CO2 equivalent are higher (6.07) than national (5.71), state (4.66), and a comparable town (4.03).
- Community surveying shows broad support for improved active transportation options and infrastructure as essential to the borough's future with 79% stating that it is important for the borough to encourage more walking and biking and 83% reporting that a bikeable community is important for Lewisburg's future.
- In open responses to the question, "What are the most important actions that should be considered?" 77% of responses highlighted actions focused on transportation issues.
- 76% consider flood mitigation to be important in ensuring a future thriving Lewisburg. 70% saw river flooding as a current threat, with 93% considering it a potential future threat.
- Fears don't stop with flooding, respondents are concerned that negative climate change impacts will worsen in the future, particularly in regards to extreme weather and heat waves. Residents have further identified fears of increased mold, insect infestations, and climate migration.
- Residents want to support a more robust ecosystem – a healthy tree canopy was ranked as important for 80%, while 59% supported increasing greenspaces within the borough.
- There is community support for climate action as evidenced by the majority of survey respondents considering the borough's climate action efforts to date unsatisfactory (41%) or neutral (40%). Such perception provides both support for this current climate action plan, and also may indicate a need on the part of the borough to consider how their current and prior climate action and sustainability efforts are communicated.

The Lewisburg Climate Action Plan is designed to respond to the Borough's unique challenges. Recognizing that the climate crisis disproportionately impacts vulnerable communities, this plan seeks to be equitable, people-centered, and responsive to those in need and underserved populations. By having this plan, the Borough prepares itself for future climate effects and will be able to form partnerships and collaborations to address and mitigate these effects.

Introduction

With seasonal variations, disasters (and the secondary and tertiary effects of them) becoming more intense and frequent, climate change threatens the health, safety, and overall well-being of communities across the globe. The Commonwealth of Pennsylvania and the Borough of Lewisburg are no exception as we begin to face the realities of increased rainfall and higher temperatures by mid-century. These changes will mean more challenges with flooding and heat waves in Lewisburg, challenges which impact vulnerable communities more acutely, and ripple outward in unexpected ways.

In Pennsylvania, temperatures have increased by more than 1.8°F since the early 20th century and are expected to increase by an additional 5.9°F by 2050. Annual precipitation in Pennsylvania has increased by approximately 10% since the early 20th century and is expected to increase by another 8% by 2050, with a 14% increase during the winter season (Shortle et al. 2015; ICF 2021). Pennsylvania will experience heat waves and more heat days above 90°F (ICF 2021; See Figure 1). Our changing climate will make our commonwealth more prone to experience more frequent and severe hydrological events. These changing conditions will have unexpected secondary and tertiary effects that will further disrupt society.

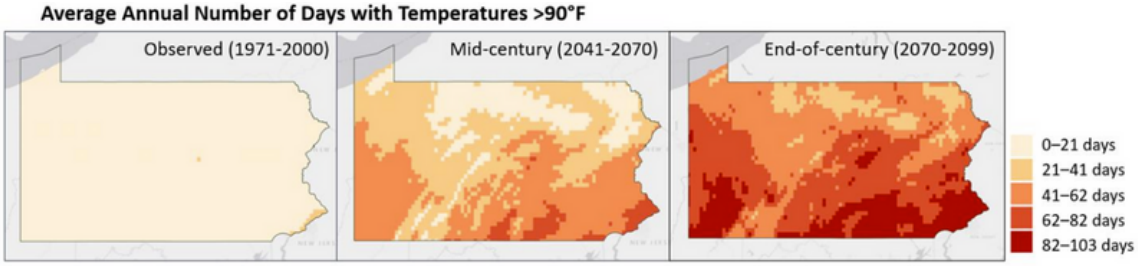

Figure 1: Average Annual Number of Days with Temperatures Greater than 90 degrees Farenheit (Source: ICF 2021)

To plan for and respond to a changing climate, the Pennsylvania Climate Change Act was passed in 2008. This act requires the Department of Environmental Protection (DEP) to: (1) develop an inventory of GHG emissions and update it annually; (2) administer a Climate Change Advisory Committee; (3) set up a voluntary registry of GHG emissions; and (4) prepare a Climate Change Action Plan and Climate Impacts Assessment, both to be updated once every three years. The most recent greenhouse gas inventory was released in 2020 using 2018 data, followed by a new Climate Impacts Assessment in 2021 and the current Climate Action Plan released in 2021. These documents offer information and guidance for local climate action planning in the Commonwealth.

The Climate Impacts Assessment provides a scientific basis for potential statewide impacts of global climate change, which can be used alongside available local data to inform community adaptation efforts. The Pennsylvania Climate Action Plan summarizes statewide greenhouse gas emissions, sets an emissions reduction target, and describes potential mitigation and adaptation actions for residents and businesses, as well as local and state governments. The reduction targets are 26% by 2025 and 80% by 2050 from 2005 levels, consistent with an executive order signed by Governor Wolf in 2019 (PA DEP, 2021). See Appendix A for more information on climate change impacts and the state's climate action plan.

The Borough of Lewisburg recognizes the risks and opportunities that the climate crisis poses to its residents and businesses and is acting now to mitigate growing risks and adapt to reach net-zero emissions by 2050. Working from an emissions inventory of the Borough, this plan presents a locally-created framework of 13 strategic objectives with 53 measurable action items spanning six sectors:

(1)Transportation,
(2) Buildings and Energy,
(3) Waste,
(4) Flooding,
(5) Sequestration, and
(6) Disaster Risk Reduction.

This framework, created by a 19-member task force, aims to document, coordinate, and measure efforts within these categories.

Planning Process & Community Feedback

Planning Process

The planning process utilized for the Lewisburg Climate Action Plan was based on the *Five Milestones for Climate Mitigation* framework, developed by the International Council for Local Environmental Initiatives, USA (ICLEI).

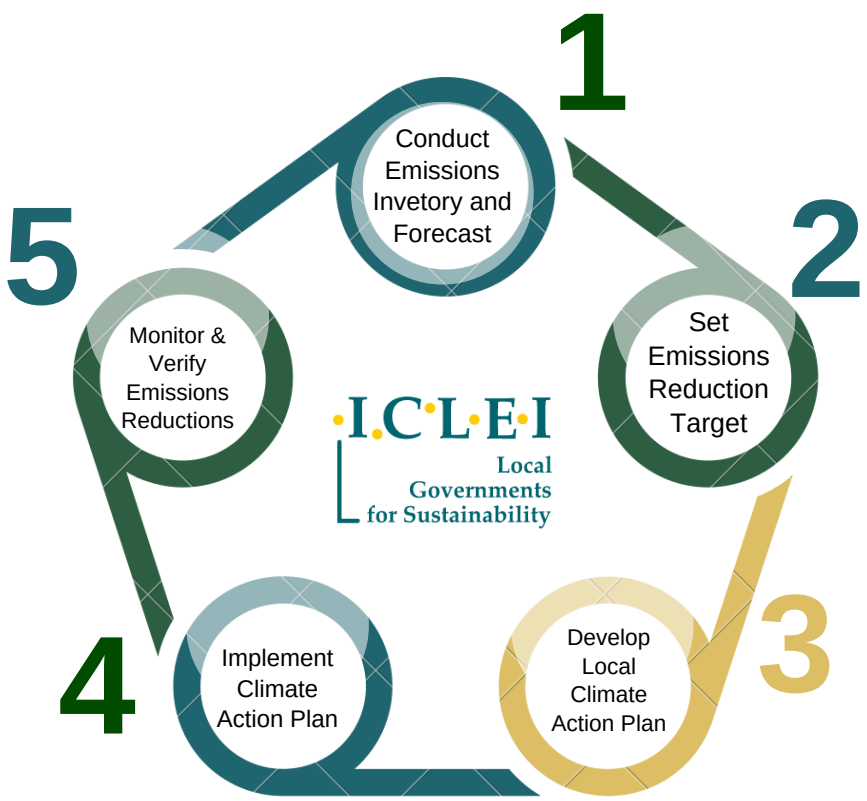

Figure 2: Five Milestones for Climate Mitigation

This cyclical planning framework begins with an emissions inventory and a forecast for the future if no action is taken. Then, realistic emission targets are made for the future. Next, a climate plan responsive to local emissions, needs, and opportunities is developed that consists of a series of objectives and action items. Afterwards, this plan is implemented and monitored, with the plan to follow up with a future emissions inventory. The cycle continues and newer emissions targets are made with corresponding changes to the climate plan responsive to new data.

This Climate Action Plan represents Lewisburg's first planning cycle, including the completion of the first three milestones. In order to achieve this, the following steps were undertaken:

1. Assembling a technical team that guided the process

2.Conducting a borough-wide emissions inventory

3. Creating a vulnerability survey

4. Convening a diverse taskforce

5. Drafting objectives and action items

6. Conducting a community survey on the draft plan

7. Finalizing a draft climate action plan.

The drafting of the Lewisburg Climate Action Plan was aided by two community surveys, the Vulnerability Survey and the Community Survey. The Vulnerability Survey was developed to identify vulnerable populations and unique perceptions of climate change effects in Lewisburg. This survey was distributed at the beginning of the process to aid the task force in constructing equitable and people-centered action items. The Community Survey was distributed towards the end of the planning process to include the draft objectives and gain a better understanding of community response to the plan.

Technical Team

The three-person technical team (Dr. Shaunna Barnhart, Maggie McConnell, and Taylor Lightman) met weekly from August 2021 to May 2022 to conduct the greenhouse gas inventory, plan and lead a 17-person task person, and finalize the climate action plan objectives and action items developed by the task force.

Emissions Inventory

From August to November 2021, the technical team conducted an inventory of greenhouse gas emissions from the Borough of Lewisburg in 2019. This inventory enabled the technical team to benchmark current emissions and better understand what drives greenhouse gas emissions within the Borough. The greenhouse gas inventory is disaggregated by both sectors (commercial, residential, industrial, and transportation) and by energy source (Electricity, Natural Gas, Gasoline, and Diesel).

This process (the United States Community Protocol (USCP) DASH method) used data from UGI Utilities for Natural Gas usage, Citizens' Electric for electricity usage, and Google Maps EIE data for transportation data. The Google EIE transportation, importantly, only includes emissions from trips that start or end within the Borough of Lewisburg – it does not include the emissions from through-traffic. Data Reports from UGI and Citizens' Electric, as well as assumptions underlying the emissions inventory, can be found in Appendix B. The data was then input into the Clearpath emissions calculator designed by the International Council for Local Environmental Initiatives (ICLEI), which allowed us to calculate the emissions and future projections. There are several limitations of this methodology – we missed emissions generated by heating fuels (oil, coal, or wood-fired furnaces), solid waste, water, and sewage treatment, and we did not calculate emissions sequestered by trees and other plant life within the borough.

The emissions generated by electricity production were calculated based on regional PJM data which displays the source and composition of our electricity.

In addition to this borough-wide emissions inventory, this section includes data obtained by a 2020 Bucknell course that conducted a utility audit of the Borough of Lewisburg's operations. Their research compiled the energy used in both 2018 and 2019 by collecting the electric, gasoline, diesel, and natural gas utility bills. CO2 emissions were calculated using the EPA's Greenhouse Gas Equivalencies Calculator.

Task Force

The task force included representatives from local and county government, elected officials, local residents, environment and community non-profit representatives, and landscape architects. Recognizing that climate-related decisions today impact the opportunities and quality of life for generations to come, and yet also benefit from a range of professional expertise, the task force was composed of an inter-generational group with members ranging from teenage years to more than 70 years old. This group developed objectives, action items, and measurable outcomes responsive to the emissions inventory, local needs, and opportunities.

Creating Objectives and Action Items

The task force met monthly virtually using the Zoom platform from December 2021 to April 2022 with the option of additional subcommittee meetings to refine the ideas generated into distinct objectives and action items (see Table 1). Each group meeting was centered around different sectors with discussions in breakout groups captured through the use of Jamboard. This platform allowed the technical team to propose potential objectives and the task force to respond by revising objectives and offering suggested action items in real-time (see Figure 3 for an example). As action items were consolidated and refined, task force members were included in feedback via Google Forms to create the final product. The objectives and action items were then brought to the community at large for feedback through a community-wide survey.

Table 1: Task Force Meeting Dates and Topics

Date of Meeting	Objective Topic
December 8, 2021	Initial meeting; review of task force goals; review of Lewisburg greenhouse gas emissions
January 12, 2022	Transportation
February 9, 2022	Buildings, Energy, and Waste
March 9, 2022	Flooding, Sequestration, and Disaster Risk Reduction
April 13, 2022	Break-out groups review action items developed in each of the objective categories

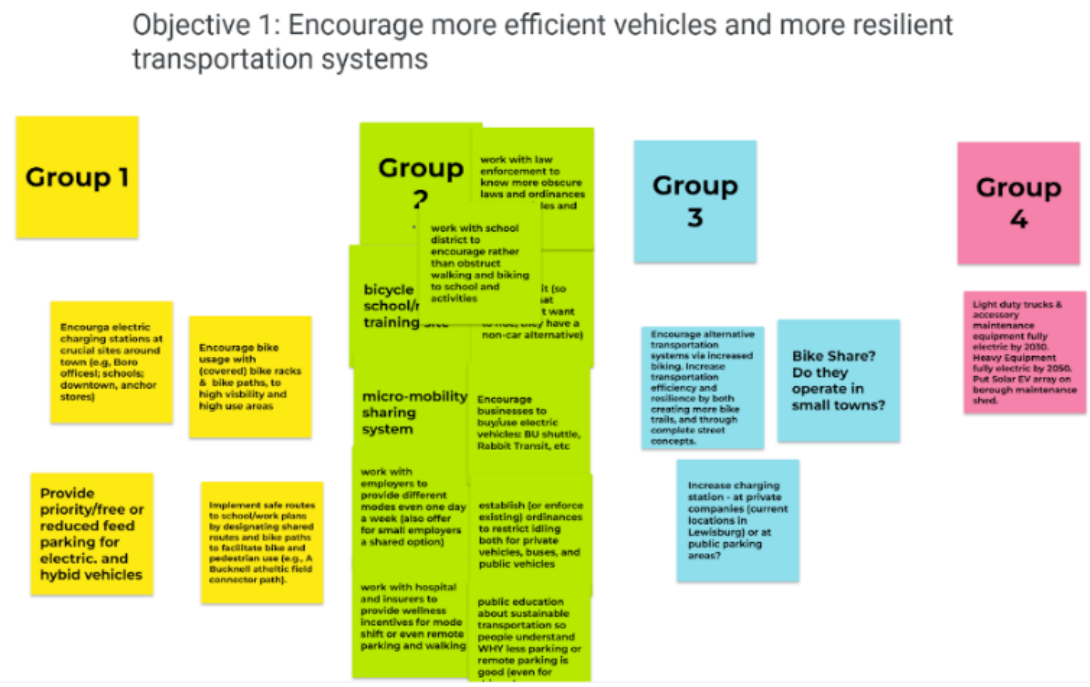

Figure 3: Sample Jamboard of developing action items in a task force meeting. Each Group number and color refers to different break-out teams developing recommendations.

Vulnerability Survey

An online survey comprised of ranked-choice, Likert Scale, short answer, and multiple choice was released to gather public feedback (see Appendix C for the complete survey). The survey was open from early December 2021 to early February 2022. The objective of this survey was to gain insight into the perceptions of how climate change will affect the Borough of Lewisburg. Specifically, this survey asked residents about their perceptions of flooding, forest fires, droughts, heatwaves, climate migration, loss of biodiversity, food insecurity, and extreme weather events. The results of the survey were used to inform the technical teams' Disaster Risk Reduction objectives. The technical team sought responses by soliciting feedback via the Lewisburg Neighborhoods email list (on January 4th, 2022) and a post on the Lewisburg Neighborhoods Facebook (on January 14th, 2022). Together these efforts garnered 35 responses. The survey analysis only includes the 27 responses from people who work, live, or work and live in the Borough as this climate action plan is for the borough government and community planning.

Community Survey

After the draft objectives were finalized in April 2022, an online survey comprised of a Likert scale and open-response questions was released to gather public feedback (see Appendix D for the complete survey). The survey was open from late April to early September 2022. The objective of this survey was to better understand what community members desire from a climate action plan and how they perceive current local borough-led environmental actions and proposed future objectives. The results of the survey were used to revise wording in the plan and alter it to better reflect community feedback. The technical team sought responses by soliciting feedback via: the Lewisburg Neighborhoods email list (twice), the CommUnity Zone email list, a post on the Lewisburg Neighborhoods Facebook (which was supplemented with $15 ad boost), and one post on the Lewisburg Neighborhoods Instagram. Together these efforts garnered 153 responses. The survey analysis only includes the 90 responses from people who work, live, or work and live in the Borough as this climate action plan is for borough government and community planning.

Project Scopes and Objectives

A community survey served to identify public perceptions of existing borough climate action efforts, determine language that resonates with residents to describe Lewisburg's aspirational future, and to gather feedback on the proposed objectives (see Appendix D for full results). This feedback informed the final mission and vision statements and priority setting with objectives and associated action items. It also provides support for developing the present climate action plan. Respondents were asked if climate action to date in Lewisburg has been satisfactory, finding that the majority considered efforts to date unsatisfactory (41%) or neutral (40%). Such perception provides both support for this current climate action plan, and also may indicate a need on the part of the borough to consider how their current and prior climate action and sustainability efforts are communicated.

With a clear understanding of Lewisburg's specific greenhouse gas emissions sources, the task force drafted a mission and vision statement to guide the plan. The language in these statements were informed by the community survey, which assessed what key terms resonated with the public when thinking about how they would like to describe the future of Lewisburg. The terms "healthy" and "equitable" were the top two resonating with more than 80% of respondents, followed by the terms "sustainable," "adaptable," "prosperous," "resilient," "green," and "efficient," receiving support from 72-77% of respondents.

The Vision Statement is centered around the plan objectives. The community survey informs and supports these priorities. When asked to indicate level of satisfaction with current conditions of a variety of possible climate related actions in Lewisburg, the top three with the most dissatisfaction were access to public transportation (85%), use of fossil fuels (65%), and use of renewable energy (64%). When asked to indicate the importance of each of the plan's objectives, all objectives garnered more than 50% support with flood resilience, ecosystems, transportation issues, and energy resilience having more than 75% support. Given the opportunity in an open response to identify which action items are a priority, the top two concerns were transportation and ecosystems. This aligns with the responses to the question about what objectives are important for Lewisburg's future with walkable community (85%), bikeable community (83%) and access to the river (80%) garnering the most agreement.

Mission Statement

The Lewisburg Climate Action Plan is designed to respond to the Borough of Lewisburg's unique challenges, with particular attention to flooding, brought about by the global climate crisis. The overarching goal is to achieve net-zero carbon emissions by 2050. The intermediate goal is a 50% reduction of greenhouse gas emissions from 2019 levels by 2035. Recognizing the differential impacts of the climate crisis, this plan seeks to be equitable, people-centered, and responsive to those in need and underserved populations.

Our changing climate presents our community with a challenge but also an opportunity to forge a better quality of life for residents. Doing nothing will ensure things get worse – by working together, we can ensure a thriving Lewisburg for future generations.

Vision Statement

Improve the health and quality of life for everyone in the Borough by forging a net-zero, environmentally and economically resilient community that:

- Ensures that benefits are equitably distributed by empowering and including historically underserved and vulnerable populations.
- Strengthens ecosystem health through biodiversity enhancement and improvements to community green spaces.
- Ensures robust flood mitigation and disaster risk reduction by increasing the capacity of green and gray infrastructure and by strengthening institutions.
- Builds and retrofits more energy-efficient buildings and infrastructure.
- Transitions to alternative energy production while supporting energy efficiency measures.

Equity Considerations

This plan was developed with considerations for equity. Communities of color and low-income populations have historically been under-served by programs and investments and under-represented in decision-making, including for the development and implementation of climate policy. These exclusionary processes maintain or exacerbate disparities in public health; food, energy, and housing security; air and water quality; economic prosperity, and overall quality of life. These inequities primarily stem from ongoing institutional racial bias and historical discriminatory practices that have resulted in the inequitable distribution of resources and limited access to opportunities. Climate equity ensures the just distribution of the benefits of climate protection efforts and alleviates unequal burdens created by climate change. Implementation of this concept requires intentional policies and projects that simultaneously address the effects of and the systems that perpetuate both climate change and inequity. Lower-income neighborhoods, communities of color, immigrants, unhoused, outdoor workers, the very young, and the elderly will disproportionately bear the burdens of climate change impacts such as flooding and heat waves. In addition, the many economic and health benefits of carbon reduction investments are not shared equitably, especially among people of color and low-income communities. This Plan was developed with consideration of these concerns and responded to them by creating a task force with a broad range of perspectives, life experiences, and backgrounds.

Lewisburg Borough's Greenhouse Gas Emissions

Lewisburg Community-Wide GHG Emissions

The 2019 community-wide greenhouse gas (GHG) emissions inventory measured the greenhouse gasses produced by all community sectors. There are many different gasses with different potencies that can contribute to the greenhouse effect – the unit used here is CO2 EQ, or the equivalent of 1 ton of CO2.

The inventory is disaggregated by both sectors (commercial, residential, industrial, and transportation) and by energy source (Electricity, Natural Gas, Gasoline, and Diesel). Overall, the Borough of Lewisburg generated 59,217 CO2 Equivalents (CO2 EQ) in 2019 or 10.35 CO2 EQ per person based on US Census projections from 2019 (5722 people). For assumptions underlying the emissions estimates, see Appendix B.

Table 2: Breakdown of community-wide emissions in Lewisburg by sector

Sector	Percentage of Total	Per Capita	CO2 EQ
Transportation	58.7%	6.07 CO2 EQ	34,740 CO2 EQ
Commercial	16.5%	1.7 CO2 EQ	9,777 CO2 EQ
Residential	13%	1.34 CO2 EQ	7,704 CO2 EQ
Industrial	11.8%	1.22 CO2 EQ	6,996 CO2 EQ
TOTAL	**100%**	**10.35 CO2 EQ**	**59,217 CO2 EQ**

Table 3: Breakdown of community-wide emissions in Lewisburg by energy source

Energy Source	Percentage of Total	CO2 EQs
Gasoline	42.6%	25,217 CO2 EQ
Natural Gas	23.6%	13,986 CO2 EQ
Electricity	17.7%	10,491 CO2 EQ
Diesel	16.1%	9,523 CO2 EQ
TOTAL	**100%**	**59,217 CO2 EQ**

The emissions generated from the transportation sector constituted the majority (58.7%) of all emissions (112% more emissions than the Commercial sector which had the second largest percentage of emissions). Further, emissions generated by gasoline-powered internal combustion engine vehicles constituted the plurality of emissions (42.6%). For comparison, Lewisburg Borough's per capita emissions rate of 10.35 CO2 EQ is less than the Commonwealth of PA's per capita emissions (18.64 C02 EQ) and the US's as a whole (20.02 C02 EQ). Nationally, our per capita emissions rate is comparable to the US State of Washington's (10.528 C02 EQ) and, internationally, it is comparable to the Czech Republic's (10.4 CO2 Eq).

When comparing Lewisburg's per capita emissions with Pennsylvania, USA, and our peer municipality (that used the same methodology to calculate emissions) Millersville, it is clear that our transportation emissions are not just our largest emitting sector, but are also comparatively large. Both towns are also home to a university. Bucknell University's campus is partially in Lewisburg borough, and partially in East Buffalo Township. In 2010, Bucknell released a climate action plan for the campus and is actively working towards emissions reduction and supporting sustainability. See Appendix E for a summary.

Table 4: Comparative emissions per capita

2019 Per Capita MT CO2 EQ	Lewisburg	Millersville, PA	Pennsylvania	USA
Transportation	6.07	4.03	4.66	5.71
Commercial	1.7	2.4	0.93	1.37
Residential	1.34	2.08	1.53	1.17
Industrial	1.22	0.27	6.74	4.63
TOTAL	**10.35**	**8.79**	**18.64**	**20.02**

Lewisburg Borough's Operational GHG Emissions

In 2020, Maria Catanese, Elijah Farrell, and Muxi You conducted a utility bill audit for the Lewisburg Borough's operations as a project for a senior Environmental Studies course at Bucknell University. Their research compiled the energy used in both 2018 and 2019 by the various Borough buildings and warehouses, fleet vehicles, outdoor lights, traffic lights, and tri-globe boulevard lights. Table 5 provides a summary of the group's findings on 2019 emissions.

Table 5: Lewisburg Borough's Operational GHG Emissions (2019)

	Electricity	Natural Gas	Gasoline	Diesel	TOTAL
2019 Total	302,826 kWh	1,600 Ccf	925 Gallons	9,075 Gallons	
CO2 EQ	215 CO2 EQ	9 CO2 EQ	8 CO2 EQ	93 CO2 EQ	325 CO2 EQ
% of Total	66%	2.7%	2.4%	28%	

Electricity usage constituted the majority of emissions (66%) for borough operations. To better understand where electricity usage was coming from, the team compiled the below pie chart in Figure 4 of all the sources of electricity usage (sectors accounting for 1% of total electricity or lower are not labeled).

2018-19 Municipal Total Electricity kWh by Sectors

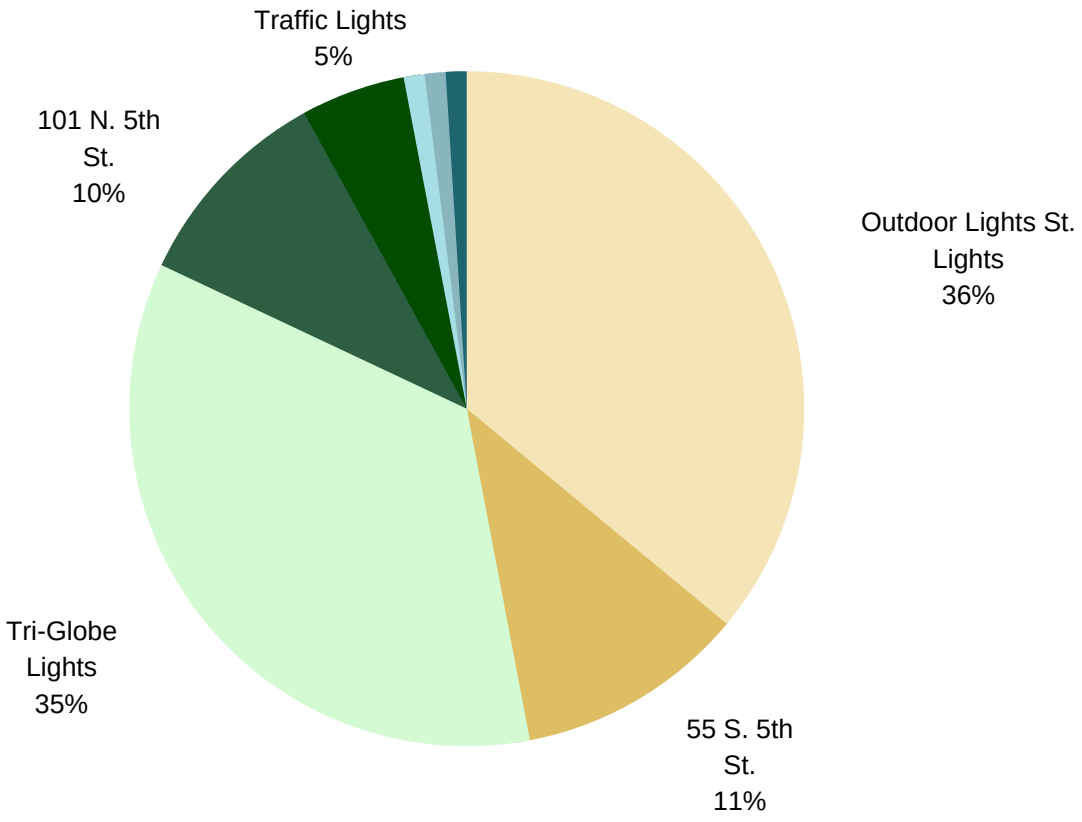

Figure 4: Electricity usage in Lewisburg (2019)

A limitation of these calculations is that the forecast of gasoline emissions based on the number of gallons used is based on its usage in internal combustion engines (ICE). While the Borough does operate one ICE vehicle, most of the gasoline used by Borough operations is for two-stroke engines which power string-trimmers and leaf-blowers. These two-stroke engines are far less efficient than ones in vehicles.

Overall, emissions from borough operations are .5% of total borough-wide emissions. The research team recommended that the Borough of Lewisburg develop an energy descent strategy with a long-term goal of becoming carbon neutral by 2050. In particular, they suggested investigating energy efficiency initiatives for the borough's boulevard and outdoor lights and improving the efficiency of the borough's buildings at 55 South 5th St. and 101 N. 5th St. through insulation and utility upgrades.

Forecasting Lewisburg's GHG Emissions and Reduction Goals

Lewisburg Borough has completed an emissions forecast based on projections of current data and expected future trends. This emissions forecast is the 'business as usual', a scenario estimating future emissions levels if no further local, state, or federal action (i.e. projects within this Climate Action Plan) were to take place (please note that this forecast was conducted prior to President Biden's Inflation Reduction Act, which funds the implementation of several initiatives that are projected to lower GHG emissions). This emissions forecast is evidence that emission reduction efforts are essential to reach reduction goals. These forecasts project that for the year 2030 and with the current trajectory of population growth, urbanization, and reliance on personal vehicles, emissions will only continue to rise.

The Borough of Lewisburg has set the goal to decrease emissions with a 50% reduction by 2035, reaching 29,609 CO2 E, and net-zero, reaching 11,843 CO2 E, by 2050. A net-zero goal recognizes that there will still be emissions but that these emissions are offset by carbon sequestration strategies. To reflect this, the 2050 net-zero goal shows an 80% reduction in emissions.

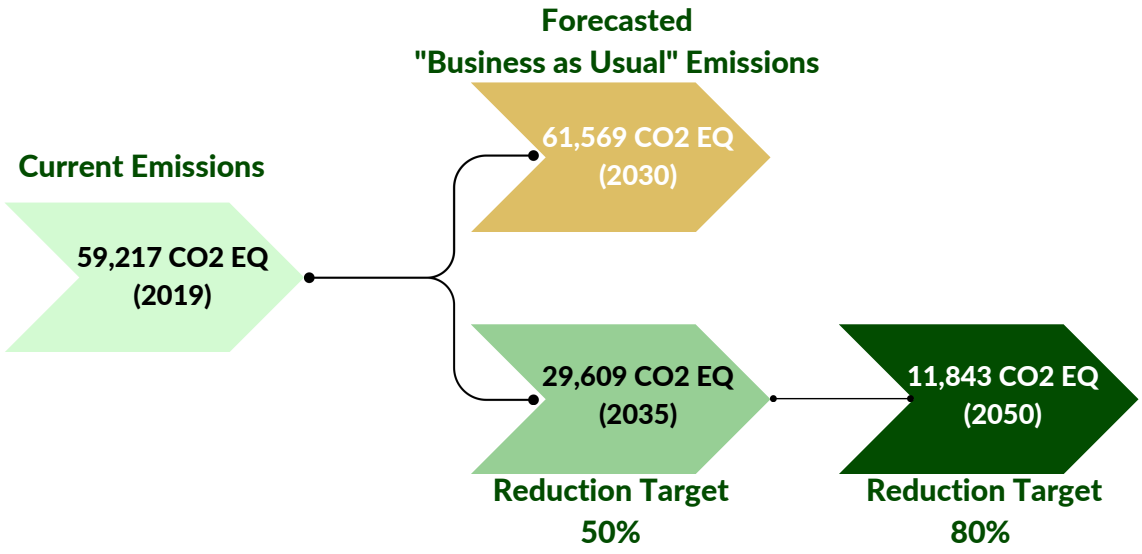

Figure 5: Lewisburg Emissions Timeline Overview

The biggest opportunity for reaching these reduction targets is through reducing emissions from the transportation sector, which is both the largest contributor of emissions and a sector that is larger compared to other governmental entities.

Taking Action

Sectors for Action

The summary table below identifies the sectors within the Lewisburg Borough Climate Action Plan and the number of objectives and actions within each sector. Each sector has a dedicated section within this document where objectives and specific actions (both new and existing efforts, which are identified in the tables) are described. The action items are consistent with the Commonwealth of Pennsylvania's 2018 Climate Action Plan, which includes many actions that are meant to be implemented by local governments. This Climate Action Plan incorporates those actions as possible and appropriate, in addition to new locally-specific actions. The tables in the following chapters will indicate whether an action is adapted from the statewide plan.

While the local government cannot address climate change by itself, government policies and practices can dramatically reduce greenhouse gas emissions from a range of sources and help prepare Lewisburg for the anticipated impacts of climate change. In addition, the Lewisburg Borough can assist residents and businesses in their endeavors to reduce emissions through programs explained in this Plan. By working together, Lewisburg can not only do its part toward achieving a stable climate - we can reap the benefits of healthier air, lower costs for utilities and services, improved transportation and accessibility, a more vibrant local economy, and many other positive side effects of reducing our carbon footprint.

Table 6: Sector summaries for Lewisburg Climate Action Strategy

Sector	13 Objecives	Number of Distinct Actions
Transportation	5	17
Energy and Buildings	3	15
Waste	1	6
Flooding	1	6
Sequesration	1	4
Disaster Risk Reduction	2	6

In the following chapters, a series of objectives with supporting actions are explored for each emissions sector. An “Objective” is a goal, end result, or target, and an “Action” is a means of realizing the objective. Each sector draws on the actions of the local government, residents, and businesses, although some areas may be largely one or the other. Each action item is partnered with a ‘Lead Organization or Actor’ in the community to help lighten the burden on the Borough of Lewisburg. This plan is a collaborative process with lead actors having flexibility and independence to carry out the actions and achieve the overall objectives and reduction goals. The plan will be revisited in the future to assess productivity and if any revisions are needed.

Emissions Reduction Potential

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

Symbol	GHG Reduction
	**Small Impact Range**
	**Moderate Impact Range**
	**Significant Impact Range**

Figure 5: Symbols to denote emission reduction potential

Co-benefits of Climate Action

Taking climate action does more than curb greenhouse gas emissions and create climate resilience - it also produces a variety of social and economic “co-benefits” that result in a more prosperous and resilient community. Such co-benefits include supporting jobs and economic prosperity, advancing social equity, improving public health, fostering resource security, and improving local environmental quality, each of which are denoted through corresponding symbols in the action item tables.

Supports Jobs and Economic Prosperity

Many of the measures in this plan pay for themselves quickly by reducing direct costs, such as fuel or energy used, and also indirect costs such as maintenance. Encouraging energy efficiency, public transit use, building improvements, and other measures will also result in lower energy and water bills for residents and employers as well. Acting now will also save on runaway costs on climate change, especially in the longer term. These costs range from infrastructure damage in extreme storms and pest control to industry losses, particularly for industries that depend on environmental conditions. In addition to reducing financial risk, measures such as those in this plan can support job creation. Renewable energy, energy efficiency, and electric and hybrid vehicles are growing sectors (DOE 2022). Climate protection measures can spur business and job growth during the design, manufacture, and installation of energy efficient technologies, which presents an opportunity to reinvest in the local economy and generate green jobs within Lewisburg.

Advances Social Equity

Social equity and justice are major concerns for addressing climate change, and must be considered as integral to climate planning. Climate actions are effective when equity and justice are incorporated as key principles. This means ensuring equitable access to the programs and benefits of climate action, fair treatment and meaningful involvement in the development of laws, policies and regulations, and the identification of issues impacting vulnerable communities. Climate action can both address climate change and ensure a better quality of life for communities of color and low-income communities.

Improves Public Health

Climate change mitigation activities, particularly those related to transportation, help to clean the air by reducing vehicle emissions and therefore improve public health. Enhanced transportation choice combined with transit-oriented development practices make for a more vibrant, livable community with shorter commute times and more opportunities for active transport creating more connected and resilient neighborhoods.

Fosters Resource Security

Helping Lewisburg’s government, businesses, and residents to adapt to a changing climate will also enhance resource security. A key strategic side benefit of climate change mitigation activities is enhanced energy security through reduction in total demand. This allows for both improved energy reliability during peak periods and less strain on the energy system overall. Similarly, climate actions can secure food and water sources and prevent damage and service disruptions to these systems.

Improves Local Environmental Quality

Adapting to a changing climate can positively impact local environmental quality. Nature-based adaptations can increase water purification, flood control, and biodiversity enhancements. Actions focused on densifying development into walkable neighborhoods preserve natural spaces and support wildlife and ecosystem conservation. Local sequestration efforts also improve local environmental quality, such as through the tending of shade trees which also provide wildlife habitat.

Figure 6: Symbols to denote co-benefits for each action item

Supports jobs and economic prosperity

Advances social equity

Improves public health

Fosters resource security

Improves local environmental quality

Transportation

When asked about current borough-led climate policies in the community survey, residents were least satisfied with 'Access to Public Transportation.' Active transportation is one alternative to public transportation which the borough can support. While 47% of respondents were unsatisfied with biking safety, this did not deter respondents from ranking biking as a priority with 79% stating that it is important for the borough to encourage more walking and biking. When asked what is important for Lewisburg's future, a bikeable community garnered 83% support (See Appendix D). Many residents also highlighted the intersection of the Buffalo Valley Rail Trail with Route 15 as a key barrier to Lewisburg's walkability and bike-ability because they perceive this intersection to be dangerous and that there are currently no other safe crossings of Route 15. A follow-up survey conducted in fall 2022 specific to bike-ability in the area supports these findings, concluding that "more people want to bike to more places around Lewisburg and they want to bike more frequently in Lewisburg. A perceived lack of safety and access to safe networked routes prevents them from doing this" (Powell, Barnhart, and Lightman 2023).

There is a history of active groups working towards a more walkable and bikeable Lewisburg Borough and cultivating a culture of biking. First, in the form of the Borough Traffic Advisory Committee (formed in 2003 and dissolved in 2015), and then in Lewisburg Neighborhood's Walk It! Bike It! The committee was formed in 2015. During the COVID-19 pandemic, Walk It! Bike It! ceased to regularly meet, however, its programming and advocacy efforts continue. These efforts include: deploying "Yield To Pedestrian" Signs on main streets, hosting bi-annual road holidays, hosting bike parking at major festivals and events Downtown, and organizing community bike rides. The Lewisburg Borough benefits from the construction of a 10.3-mile rail trail that connects downtown Lewisburg to downtown Mifflinburg and from hosting the unPAved gravel bike race every fall.

This work of programming and infrastructure may be yielding results as biking in the borough has increased. Despite the COVID disruption, bicycling as a mode of transportation is growing within the Borough. According to the 5-year estimates from the American Communities Survey, bicycling represented 2.8% of commutes in 2011. Ten years later, in 2021, the share of bicyclists more than doubled to 6.9% of commuters.

Building on these current successes, and desired future changes evident from both the community survey conducted as part of this plan's development as well as the followup fall 2022 bike-ability report, the task force created five transportation objectives with 16 specific action items that, overall, aim to reduce car trips and encourage active transportation.

Objective	Supporting Actions	Co-Benefits	Reduction Potential
1. Encourage more efficient vehicles and resilient transportation systems	T1, T2		
2. Encourage active transportation	T3, T4, T5, T6		
3. Reduce vehicle miles traveled (VMT) by 50% by 2050	T7, T8, T9, T10		
4. Align land use and housing policy with transportation infrastructure to increase access to walking, biking, and public transit	T11, T12, T13, T14		
5. Create a culture of alternative transportation	T15, T16		

Objective 1:

Encourage More Efficient Vehicles and Resilient Transportation Systems

Action	New or Existing	Potential Lead Actor	Metric
T1 - Encourage residential electric vehicle use through providing incentives through access to parking and electric charging stations	New	Lewisburg Borough	Charging Stations and Parking Spots
T2 - Electrify Borough Vehicle Fleet	New	Lewisburg Borough	Electric Vehicles

Objective 2:

Encourage active transportation

Action	New or Existing	Potential Lead Actor	Metric
T3 - Provide bike services: covered bike racks, bike sharing networks, bike repair stations	Existing	Walk it, Bike it	Amount Bike Services
T4 - Increase miles of walking and biking paths	Existing	Lewisburg Borough, Union County Trail Authority	Miles
T5 - Create a complete streets policy and begin implementation by 2030	New	Lewisburg Borough	Creation and Implementation
T6 - Create and implement an educational system about sustainable transportation	New	Lewisburg Neighborhoods	Number of people reached

Objective 3:

Reduce vehicle miles traveled (VMT) by 50% by 2050

Action	New or Existing	Potential Lead Actor	Metric
T7 - Establish employer partnerships to incentivize sustainable commutes and remote work options	New		Employer Partnerships, amount sustainable commutes
T8 - Explore strategies of micro-mobility sharing systems and micro transit	New	SEDA COG Trail Authority	Systems/Programs in Place
T9 - Coordinate with existing transit to ensure accessibility and affordability	New	SEDA COG	Amount people using transit
T10 - Explore strategies to provide efficient transportation to central locations, ie. airport, train station	New	Lewisburg Neighborhoods	Transportation Systems

Objective 4:

Align land use and housing policy with transportation infrastructure to increase access to walking, biking, and public transit

Action	New or Existing	Potential Lead Actor	Metric
T11 - Create a sidewalk construction and maintenance fund	New	Lewisburg Borough	Creation fund, amount use
T12 - Enhance recreation uses of river by linking to bike and pedestrian walkways	Existing	Lewisburg Borough; Lewisburg Neighborhoods, Union County Trail Authority	Systems/ Programs in Place
T13 - Modify Land Development Ordinance to ensure pedestrian and bike infrastructure	Existing	Lewisburg Borough	If modified
T14 - Increase housing density + transit access throughout core development area	New	Lewisburg Borough	Amount density increased

Objective 5:

Create a culture of alternative transportation

Action	New or Existing	Potential Lead Actor	Metric
T15 - Encourage bike, pedestrian, (and sustainable transit) friendly culture	Existing	Lewisburg Borough	
T16 - Formalize active transportation plan for Borough	New	Lewisburg Borough	Formulation of Plan

Energy and Buildings

This section aims to reduce emissions from Industrial Energy (11.8% of borough emissions), Residential Energy (13% of borough emissions), and Commercial Energy (16.5% of borough emissions). Opportunities to decrease this energy consumption can come through increasing the energy efficiency of buildings and increasing renewable energy production. The community survey registered dissatisfaction with the current use of fossil fuels (65%) and renewables (64%). This indicates a desire for an energy transition. When asked about types of potential actions related to energy, improving energy resiliency and efficiency for existing and new buildings rated highest with 79% agreeing, followed by increasing energy efficiency at 69%, and carbonizing energy sources by transitioning from heating fuels (gas, oil, and coal) to alternative energy systems at 66%. When asked what is important for Lewisburg's future, we see a similar breakdown with energy efficiency at 74% agreement, access to renewables at 72%, and reducing fossil fuels at 66%. Respondents were also asked what they would like to learn about, with 55% expressing interest in learning more about home renewables, and 39% interested in weatherization (see Appendix D).

Many organizations like SEDA-COG and the Union County Planning and Economic Development Department are already working in these areas to support weatherization and other energy efficiency programming, as such, many of these action items listed are already underway or are not new ideas. Including them in a climate action plan allows us to support and track their impacts as part of emissions reduction tactics.

Objective	Supporting Actions	Co-Benefits	Reduction Potential
6. Improve energy resiliency and efficiency for existing and new buildings	E1, E2, E3, E4, E6, E7, E8, E9, E10		
7. Increase industrial energy efficiency	E11, E12		
8. Improve resiliency of energy production and distribution systems	E13, E14, E15		

Objective 6:

Improve energy resilience and efficiency for existing and new buildings

Action	New or Existing	Potential Lead Actor	Metric
E1 - Advance policies to provide incentives for energy efficiency	New	Lewisburg Borough	Policies
E2 - Design and implement education program to increase public knowledge on energy efficiency	New	Community Zone, Lewisburg Downtown Partnership, Lewisburg Neighborhoods	Education program and people reached
E3 - Strive to make Borough buildings LEED certified or net zero	New	Lewisburg Borough	Number of buildings
E4 - Work with existing energy providers to give an option for renewable energy	New	Union County Planning and Economic Development	Existence of option
E5 - Increase public awareness on existing weatherization assistance programs and home weatherization strategies	Existing	SEDA-COG	Amount of homes weatherized

E6 - Create and implement Borough's own weatherization assistance program	New	Lewisburg Neighborhoods, LDP	Creation of program and homes weatherized
E7 - Increase opportunities for multi-family housing	Existing	Lewisburg Borough	Updated Zoning laws
E8 - Increase public awareness and information on available home solar and encourage solar cooperative and leasing programs to reduce costs	New	Union County Planning and Economic Development	Awareness program and number of residential solar
E9 - Explore opportunities to support community solar options	New	Lewisburg Neighborhoods	
E10 - Provide incentives for landlords to modernize properties and establish a system for identifying green properties	New	Lewisburg Borough	Number of green properties, number of modernized properties

Objective 7:

Increase Industrial Energy Efficiency

Action	New or Existing	Potential Lead Actor	Metric
E11 - Introduce incentives of energy efficiency and carbon sequestration technology to the industrial energy sectors	New	Union County Planning and Economic Development	Number of upgrades
E12 - Design and implement education program to increase public knowledge on energy efficiency	New	Union County Planning and Economic Development	Number of upgrades

Objective 8:

Improve resiliency of energy production and distribution system

Action	New or Existing	Potential Lead Actor	Metric
E13 - Explore local energy production possibilities: Power purchase agreement, microturbine in creeks, borough geo-thermal site, mechanical battery storage, alternattive Borough provided solar energy sites	New	Lewisburg Neighborhoods	Number of strategies implemented
E14 - Secure back-up emergency solar power and battery bank for Borough Emergency Operation Center	Existing	Lewisburg Borough	Secured
E15 - Implement sustainable housing tour + meet & greet with contractors	New	Community Zone, Lewisburg Downtown Partnership, Lewisburg Neighborhoods	Creation of tour and continued involvement

Waste

When solid waste is deposited in a landfill, it gradually generates methane gas, a greenhouse gas that is more potent than carbon dioxide. Just how potent depends on the timespan being analyzed, with 28-32 times more potent being expected on a 100 year timeline, and 84-86 times more potent on a 20 year schedule (UNECE 2023). While the emissions from our solid waste were not included in the greenhouse gas emissions, the action items aimed at reducing solid waste will improve the overall health and wellbeing of our community and reduce our methane emissions. The strategies pursued in the Waste sector aim to reduce all waste that will end its life in a landfill by focusing on the five Rs of the Zero Waste Movement: Refuse, Reduce, Reuse, Recycle, Rot. Promoting low waste lifestyles creates alternatives to single-use items, promotes unique strategies to repurpose, and increases recycling and composting. The community survey yielded support for these actions, with 73% rating reducing solid waste a priority action. When asked about Lewisburg's future, 78% agreed that recycling programs are important and 74% considered compost programs important (see Appendix D).

The Borough of Lewisburg's residential solid waste is currently collected by the Lewisburg Borough Refuse Crew and deposited in the Lycoming County landfill north of Allenwood. The Borough operates a recycling center open two days a week. Additionally, the Borough collects and processes brush and tree trimmings – the byproduct of this is used as mulch around the borough.

Objective	Supporting Actions	Co-Benefits	Reduction Potential
9. Reduce Solid Waste	W1, W2, W3, W4, W5, W6		

Objective 9

Reduce Solid Waste

Action	New or Existing	Potential Lead Actor	Metric
W1 - Implement municipal compost program that partners with farming community	New	Lewisburg Borough	
W2 - Provide incentives to reduce trash per household	New	Lewisburg Borough	
W3 - Creative and implement comprehensive recycling and food waste educational campaign	New	Community Zone, Lewisburg Downtown Partnership, Lewisburg Neighborhoods	
W4 - Enforce all existing recycling ordinances	New	Lewisburg Borough	
W5 - Implement Borough provided single stream recycling	Existing	Lewisburg Borough	
W6 - Implement program to incentivize circular disposal: Reduce, Reuse, Recycle, Renew, Repair	New	Community Zone, Lewisburg Downtown Partnership, Lewisburg Neighborhoods	

Flooding

Located on the West Branch of the Susquehanna River, Lewisburg is historically subject to flooding from Limestone (Bull) Run, Buffalo Creek, and Miller Run, as well as the Susquehanna River. According to Risk Factor, Lewisburg has severe Residential Flood Risk with 868 properties with over 26% chance of being severely affected by flooding over the next 30 years. Of all hazards, flooding events cost the most in Pennsylvania.

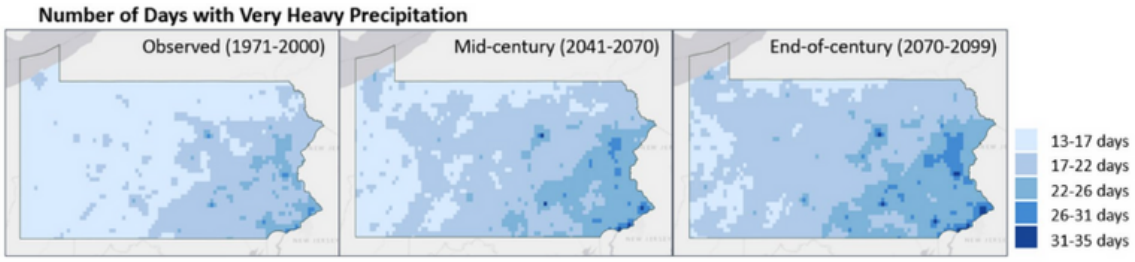

Figure 7: Number of Days with Very Heavy Precipitation in Pennsylvania.

For Lewisburg Borough, a particularly impactful component of our changing climate is the increasing severity and likelihood of catastrophic hydrological events, leading to flooding. Lewisburg Borough is vulnerable to flooding from the Susquehanna River, Buffalo Creek, Limestone (Bull) Run, and Miller Run. Our current DFIRM flood map (Figure 8) showing our 100-year and 500-year flood levels demonstrates how these four watersheds contribute to our large floodplain.

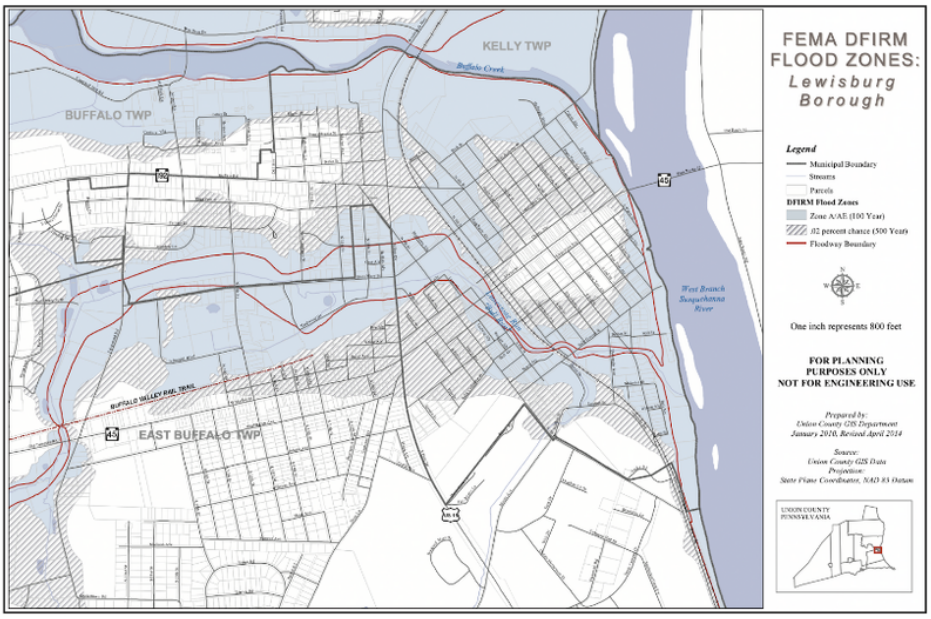

Figure 8: FEMA DFIRM Flood Zones for Lewisburg Borough

This reality was reflected in both the community and vulnerability survey. In the vulnerability survey, 70% saw river flooding as a current threat, with 93% considering a potential future threat. This indicates that respondents are concerned with impacts of changing climate (see Appendix C). In the community survey, 84% consider flood resilience to be an important focal point. When it come to the future of Lewisburg, 76% consider flood mitigation to be important to ensuring a future thriving Lewisburg. However, the river is also seen as an asset with 80% seeing access to the river as important for the borough's future (see Appendix D).

Seeking to both offer adaptation as well mitigation frameworks, this plan outlines strategies to increase our flood resilience while maintaining and enhancing the borough's connection to nature and wildlife.

Objective	Supporting Actions	Co-Benefits	Reduction Potential
10. Improve resilience to flooding by restoring, protecting, and conserving community water resources	F1, F2, F3, F5, F6		

Objective 10

Improve resilience to flooding by restoring, protecting, and conserving community water resources

Action	New or Existing	Potential Lead Actor	Metric
F1- Incentivize pervious surfaces and cleverly designed water retention and flood pathways into Borough design	New	Lewisburg Borough	Amount implementation
F2 - Explore a storm water fee	New	Lewisburg Borough	Existence of fee
F3 - Implement general riparian plan	New	Lewisburg Borough	Implementation
F4 - Review and implement recommendations from Bull Run watershed plan	Existing	Lewisburg Borough	Refer to plan
F5 - Strengthen floodplain management outside of 100 year flood lines	Existing	SEDA-COG	Management
F6 - Explore better stormwater management throughout Borough	Existing	Lewisburg Borough	Management strategies

Sequestration

Many strategies laid out in the plan so far have been aiming at reducing greenhouse gas emissions. This is extremely important but needs to be coupled with increased pathways of sequestration. When we create energy through burning fossil fuels, natural gas, and coal we create carbon emissions through the production process. This carbon however can be recaptured into the earth through sequestration and this happens largely through plants. Carbon is sequestered or captured by the plants through photosynthesis and then stored in vegetation and soil.

While plants provide this sequestration benefit, they provide other benefits as well such as beautification, shade, and ecosystem health. Such concerns were evident in the vulnerability and community surveys. In the vulnerability survey, 44% are concerned about current biodiversity loss, asked to project to the future, and this concern increased to 67% of respondents (see Appendix C). In the community survey, there appears to be general satisfaction with shade tree cover - only 26% were dissatisfied. A healthy tree canopy was ranked as important for 80%. When asked about Lewisburg's future, 59% supported increasing greenspaces. Additionally, this is a topic people want to learn more about - 64% expressed interest in learning more about pollinators and 63% expressed interest in learning about native species. This indicates community support for biodiversity initiatives (see Appendix D).

This section of the plan is focused on sequestration strategies through increasing natural green spaces which will further promote clean air and water and a connection between the community to nature. Google Environmental Insights Explorer lists Lewisburg's 2023 tree canopy cover at 32%, which indicates tree canopy cover can be expanded.

Objective	Supporting Actions	Co-Benefits	Reduction Potential
11. Grow and maintain a healthy tree canopy and diverse ecosystems	S1, S2, S3, S4		

Objective 11

Grow and maintain a healthy tree canopy and diverse ecosystems

Action	New or Existing	Potential Lead Actor	Metric
S1 - Increase Borough tree canopy	New	Shade Tree Commission, Lewisburg Neighborhoods	Tree canopy increases to 40%
S2 - Support educational efforts already happening in community on tree education, native species and free trees	Existing		Amount of people reached
S3 - Upgrade code to allow for maintained meadow, edible yards, green roofs and pollinator gardens	New	Lewisburg Borough	Upgraded codes, amount green strategies
S4 - Encourage more healthy green spaces through wildlife corridors, invasive species removal, gardens	Existing	Shade Tree Commission, Lewisburg Neighborhoods	Amount implemented projects

Disaster Risk Reduction

As temperatures rise and climate change effects come to be, there is the increased risk of disaster. This plan allows Lewisburg to be proactive and ready for these geographically unique challenges. The biggest challenges to Lewisburg will be flooding and increased heat. These are two futures that Lewisburg must be prepared for to reduce the strain on residents and infrastructure and to protect vulnerable populations.

As seen in the vulnerability survey, concern for nearly all climate effects increased between current impacts and potential future impacts. Concern about vulnerability to extreme weather increased from 63% to 85% of respondents. For heatwaves, this shifted from 30% to 59%. Drought was less of a concern, but still increased from 19% to 30% when comparing current hazard to potential future hazard. Although 7% believed that there are currently no impacts being seen to climate vulnerabilities, when asked about the future, this was 0% meaning that all respondents see future climate-related vulnerabilities. Residents have further identified fears of increased mold, insect infestations, and climate migration (See Appendix C). In the community survey, there is overall satisfaction with current disaster preparedness, with only 24% being dissatisfied. However, when asked about the importance for both the borough and the general community to have the ability to withstand and recover from disruptions, both categories yield 62% agreement. This indicates equal importance in government and household preparedness. One resiliency strategy was offered in the option of topics respondents would like to learn more about - rain barrels - which yielded interest from 46% of respondents. This indicates an interest in household level resilience strategies (see Appendix D).

This section represents a two-fold strategy for disaster preparedness. One from the responsibility of the Borough to increase infrastructure resilience and one from the community to promote positive relationships.

Objective	Supporting Actions	Co-Benefits	Reduction Potential
12.Enhance the Borough's operational capacity to withstand and recover from disruptions	D1, D2, D3		
13. Enhance the community's capacity to withstand and recover from disruptions	D4, D5, D6		

Objective 12

Enhance the Borough's Operational Capacity to withstand and recover from disruptions

Action	New or Existing	Potential Lead Actor	Metric
D1 - Designate high water meeting spot and emergency operation center	New	Lewisburg Borough	Designation of areas
D2 - Support system of public notifications and feedback for use during emergencies.	Existing	Lewisburg Borough	Use of system
D3 - Establish emergency heating, cooling, and power center	New	Lewisburg Borough, William Cameron Engine Company	Establishment of system

Objective 13

Enhance the community's capacity to withstand and recover from disruptions

Action	New or Existing	Potential Lead Actor	Metric
D4 - Create and implement comprehensive educational program on climate disaster response	New	Lewisburg Borough	# individuals reached
D5 - Expand the "Enlightener" for all residents	New	Lewisburg Borough	# Residents reached
D6 - Stimulate community building and connection through expanding on current events and establish local block parties	Existing	Community Zone, Lewisburg Downtown Partnership, Lewisburg Neighborhood	# of events and people attended

Monitoring Plan

After adoption by borough council, plan implementation partners will engage with necessary stakeholders to implement action items within this plan. Lewisburg Neighborhoods will follow up with each implementing partner at 6 month intervals to check-in and inquire about progress or support needed. On an annual basis, implementing partners will report their progress to the coordinating non-profit assisting the borough, Lewisburg Neighborhoods. Implementing partner progress will then be reported annually in a public forum, such as at the annual Bucknell University Sustainability Symposium which is open to the public and encourages public participation.

Further engagement with community members, businesses, institutions, and other stakeholders will be necessary to prepare for any prerequisite or additional actions needed to begin Plan implementation. These prerequisite actions include:

- Technical team visiting board authorities to introduce the adopted Plan.
- Public engagement with the Plan and its goals at community events to kick off programs.
- Making necessary changes to local policies or existing programs.
- Gathering bids for contracted services and equipment.
- Implementing partners creating citizen advisory groups, as needed, for programs that require considerable community engagement.
- Gathering community input through surveys or focus groups specific to action items (for example, surveys on active transportation barriers).

Establishing a monitoring process enables Lewisburg to track the impacts of the actions included in the plan and compare estimated impacts to what is actually achieved in terms of energy savings, renewable energy production, and GHG emissions reduction. Assessing the implementation status of the actions will allow determination of whether the action is performing well and to identify corrective measures. This process is also an opportunity to understand barriers to implementation and identify best practices or new opportunities in moving forward.

The table below describes the components of the monitoring reports. Action reports are to occur every two years and will only include status updates on the overall action items including mitigation and adaptation. The full monitoring report will occur every 5 years and in addition to the components in the action report, will include an updated community and municipal GHG inventory. This will help Lewisburg track its GHG emissions reduction progress. With the approval of this Climate Action Plan in 2023, the first monitoring action report will be due in 2025, then again in 2027, and the first full monitoring report with the updated GHG inventories will be due in 2028. Ideally, the most recent GHG inventories should be no more than four years old.

Recommended Monitoring Schedule through 2028

Monitoring Report Component	Action Reporting	Full Reporting	Report Year
Overall Action: Reporting any changes to initial action as well as updated information on human and financial resources	Yes	Yes	every two years (2025, 2027)
GHG Emissions Inventories: Provide updated energy consumption and GHG emissions data for the reporting year	No	Yes	every five years (2028)
Climate Action Measures: Report the implementation status (completed, in progress, on hold) of key actions and update their impacts	Yes	Yes	every two years (2025, 2027)

References

Catanese, M; Farrell, E. and You, M. 2020. *Lewisburg Borough Municipal Utility Bill Audit: Final Report.* Bucknell University.

ICF Climate Center. 2021. *Pennsylvania Climate Impacts Assessment 2021*. Retrieved from: https://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/Climate%20Change%20Advisory%20Committee/2021/2-23-21/2021_Impacts_Assessment_Final_2-09-21_clean.pdf

Pennsylvania Department of Environmental Protection (PA DEP). 2018. *Pennsylvania Climate Action Plan 2018.* Harrisburg, PA.

_____. 2020. *Pennsylvania Greenhouse Gas Inventory.* Retrieved from: https://www.dep.pa.gov/citizens/climate/Pages/GHG-Inventory.aspx

_____. 2021a. *Pennsylvania Climate Impacts Assessment 2021.* Harrisburg, PA.

_____. 2021b. *Pennsylvania Climate Action Plan 2021.* Harrisburg, PA.

Powell, Barnhart, and Lightman. 2023. *Lewisburg Bikeability Report*. Bucknell Center for Sustainability and the Environment. Retrieved from: https://digitalcommons.bucknell.edu/cgi/viewcontent.cgi?article=1010&context=student-project-reports

Risk Factor. 2022 17837, Pennsylvania. Retrieved from: https://riskfactor.com/zip/17837-pa/17837_fsid/flood

Shortle, J., D. Abler, S. Blumsack, A. Britson, K. Fang, A. Kemanian, P. Knight, M. McDill, R. Najjar, M. Nassry, R. Ready, A. Ross, M. Rydzik, C. Shen, S. Wang, D. Wardrop, and S. Yetter. 2015. *Pennsylvania Climate Impacts Assessment Update.* Pennsylvania State University. Retrieved from: http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=5002&DocName=2015%20PENNSYLVANIA%20CLIMATE%20IMPACTS%20ASSESSMENT%20UPDATE.PDF%20

UNECE. 2023. *Sustainable Energy: Methane Management, the Challenge.* https://unece.org/challenge

US Department of Energy. 2022. *DOE Report Finds Energy Jobs Grew Faster Than Overall U.S. Employment in 2021*. Retrieved from: https://www.energy.gov/articles/doe-report-finds-energy-jobs-grew-faster-overall-us-employment-2021

Appendix A

Climate Change Impacts and Policy Resources

The following references are recommended for more information on climate change, impacts, and Pennsylvania state policy:

The Intergovernmental Panel on Climate Change (IPCC) publishes regular reports on the state of climate change and its impacts across sectors globally. For the latest information, see: https://www.ipcc.ch/

The State of Pennsylvania, particularly the Department of Environmental Protection, has a number of reports and resources available specific to policies and how climate change impacts our state:

- ICF Climate Center. 2021. *Pennsylvania Climate Impacts Assessment 2021*.
- Pennsylvania Department of Environmental Protection (PA DEP):
- Climate change webpage: https://www.dep.pa.gov/citizens/climate/Pages/default.aspx
- 2018. *Pennsylvania Climate Action Plan 2018.* Harrisburg, PA.
- 2020. *Pennsylvania Greenhouse Gas Inventory.* Retrieved from: https://www.dep.pa.gov/citizens/climate/Pages/GHG-Inventory.aspx
- 2021. *Pennsylvania Climate Impacts Assessment 2021.* Harrisburg, PA.
- 2021. *Pennsylvania Climate Action Plan 2021.* Harrisburg, PA.

Appendix B

Data Reports and Assumptions for Greenhouse Gas Emissions

This appendix includes a summary data table of Lewisburg's emissions, an explanation of definitions, and the direct data provided by the two core utility companies for Lewisburg: Citizens Electric and UGI.

Sector	Fuel Or Source	Usage	Usage Units	Emissions
Residential Energy	Electricity	15,322,249	kWh	4,854
Residential Energy	Natural Gas	535,816	Therms	2,850
Residential Energy Total				7,704
Commercial Energy	Electricity	17,796,231	kWh	5,637
Commercial Energy	Natural Gas	778,411	Therms	4,140
Commercial Energy Total				9,777
Industrial Energy	Natural Gas	1,318,229	Therms	6,996
Industrial Energy Total				6,996
Transportation & Mobile Sources	Gasoline	60,438,616	VMT	25,217
Transportation & Mobile Sources	Diesel	6,447,856	VMT	9,523
Transportation & Mobile Sources Total				34,740

Emissions Definitions

It is important to understand what is included in each section to better understand how to reduce these emissions. The below distinctions were provided by the utility companies.

Residential	Electric	Permanent dwellings including a kitchen, living, and bathroom area. For apartment buildings the common areas are commercial and the apartments are residential.
	Natural Gas	Single-family dwelling or building to four or fewer dwellings in a multi-family dwelling
Commercial	Electric	Non-residential locations served at secondary voltages less than 600 V. This includes public municipal or institutional buildings and wastewater treatment facilities.
	Natural Gas	Hospitals, universities, and transit vehicle customers
Industrial	Electric	Non-residential locations served at primary voltage 12,470 V
	Natural Gas	Industrial or Agricultural

Appendix B, continued

Borough of Lewisburg
55 South Fifth Street Lewisburg, Pennsylvania 17837-1867
Telephone (570 523-3614 Fax (570) 524-2270

September 10, 2021

Citizens' Electric Corporation
Attn: John Kelchner, President & CEO
1775 Industrial Blvd
Lewisburg, PA 17837

Re: Lewisburg Borough Community Greenhouse Gas Emissions Inventory

Dear John:

The Borough of Lewisburg is committed to addressing its contribution to global climate change and creating a more sustainable community. As such, Lewisburg endeavors to develop a comprehensive inventory of sources of greenhouse gas (GHG) emissions resulting from activities within Borough municipal boundaries. This effort is being led by the Bucknell Center for Sustainability & the Environment and related students and faculty.

The inventory will measure energy used for buildings, vehicles, transit systems, waste disposal, and other outputs carried out by Borough residents and businesses. The Borough will be reliant on the cooperation of outside entities, such as regional planning agencies and utilities, to obtain data on the community. From Citizens' Electric, Lewisburg is seeking the following information:

1. Total use of electricity within borough borders for the year 2019. Only aggregate data is needed, broken down by the residential, commercial, industrial, and institutional sectors, as shown in the sample chart below. There is no desire or intent by the Borough or any other entity to obtain privileged/ protected customer information.

Lewisburg Borough Electricity Use in Year 2019	
Sector	**Electricity Usage (kWh)**
Residential	15,322,249 kWh
Commercial	17,796,231 kWh
Industrial	0
Institutional	0
Agricultural	0

2. Please provide a description of how building types are assigned to each category (residential, commercial, and industrial).
   a. Residential: Permanent dwellings containing kitchen, living and bathroom areas
   b. Commercial: Non-residential locations served at secondary voltages < 600V.
   c. Industrial: Non-residential locations served at primary voltage 12,470V.
   d. Institutional: We do not utilize this category.

Appendix B, continued

3. Please answer the following questions to further clarify the data provided:
   a. Are buildings assigned based on metering rates? If so, please describe by category. N/A
   b. Are multifamily apartment buildings classified as residential or commercial? Apartments are residential, common areas are commercial.
   c. How are large users such as hospitals or universities classified? Depends on service voltage, usually Industrial
   d. How are municipal/institutional (public-owned) buildings categorized? Commercial
   e. Are wastewater treatment facilities included? If so, in which category? Yes, Commercial
4. Were any commercial or industrial accounts removed due to privacy rules? (Y/N) No.
   IF YES
   a. How many accounts were removed per sector?
      i. Commercial_____
      ii. Industrial_____

5. Do you have calculated utility emissions factors? If so, please provide them below (please note the units): N/A
   a. CO_2: _____ lbs CO_2 / MWh
   b. CH_4: _____ lbs CH_4 / GWh
   c. N_2O: _____ lbs N_2O / GWh
   d. Is grid loss (transmission/distribution) considered in emissions factors? (N/Y) _____
   e. Is this factor third-party verified, and by what organization? (N/Y)_____

6. How many households in the Lewisburg Borough that are served by the utility? Approximately 1,800

7. If grid loss is not considered in emission factors, can you provide:
   a. Grid loss factor 9.7%

Hundreds of cities in the U.S. have completed greenhouse gas inventories. Utilities that have provided the data being requested include National Grid, PG&E, SDG&E, LIPA, PECO, PSE&G, Southern California Edison, and many others. Citizens' Electric cooperation with this inventory will ensure the Borough is able to understand and potential manage community GHG emissions in order to address impacts of climate change on our residents, businesses, and institutions.

Any questions regarding data needs for the project and the final tallies and answers can be directed to Steven Beattie, Community Development/Grants Manager, at 570-217-6958 or sbeattie@lewisburgborough.org

Sincerely,

William Lowthert
Lewisburg Borough Manager

Appendix B, continued

October 25, 2021

Ms. Heidi J. Kunka, LEED AP BD+C, CC-P

Energy Program Specialist

Department of Environmental Protection/Energy Programs Office

Rachael Carson State Office Building

400 Market Street

Harrisburg, PA 17101

Re: Community Greenhouse Gas Emissions Inventory Natural Gas Data Request

Ms. Kunka,

This letter is the formal response by UGI Utilities, Inc. (UGI) to the data request from the Pennsylvania Department of Environmental Protection (PADEP) regarding the amount of natural gas supplied by UGI within several jurisdictions in the Commonwealth of Pennsylvania during calendar year 2019. It is UGI's understanding that this data will be used, along with other data, to develop comprehensive inventories of greenhouse gas (GHG) emissions from several different types of carbon producing activities within the boundaries of each municipality. We understand the list of jurisdictions requesting information includes the Boroughs of Camp Hill, Millersville, Milford, and Lewisburg and the Counties of Lehigh and Northampton (Lehigh Valley Planning Commission).

The PADEP requested that the data be broken down by usage including residential, commercial, industrial, institutional, and agricultural sectors. UGI defines residential customers as those accounts receiving gas service to a single-family dwelling or building, through one meter, to four or fewer dwelling units in a multi-family dwelling, or premises used as a single family dwelling and for one or more business uses, provided the proprietor of the business resides in the single family dwelling, and the business uses less than fifty percent of the anticipated gas usage served through a single meter. UGI's tariff considers hospitals, universities, and transit vehicle customers as commercial accounts. Unfortunately, UGI is unable to break-out usage by institutional and agricultural sectors. While UGI does not have population data for each municipality in its service territory, the Company can provide the total number of accounts for each of these municipalities.

The 2019 gas usage data and accounts for each jurisdiction is included below:

BOROUGH OF LEWISBURG SECTOR	NUMBER OF ACCOUNTS	NATURAL GAS (THERMS)
Residential	570	535,816
Commercial	163	778,411
Industrial	2	1,318,229

Appendix C

Results of Vulnerability Survey

The technical team released a "Vulnerability Survey" in December 2021 to gain better insight into the perceptions of climate change in Lewisburg and which populations would be most susceptible. The survey received 35 responses including likert scale, choose from a list, and short answer questions. Of those who responded, 8 did not work or live in Lewisburg and so the resulting data analysis only includes 27 respondents.

The survey specifically asked residents about their perceptions of flooding, forest fires, droughts, heatwaves, climate migration, loss of biodiversity, food insecurity, and extreme weather events. Overall, the results found that residents identified the most severe current threat to be flooding and ranked low severity to threats such as forest fires or droughts (Table C.1). In the future, they perceived flooding, heat waves, and extreme weather events to be top concerns in severity, and still identified climate migration and biodiversity loss as a concern (Table C.2).

Table C.1: Perceived current severity of climate effects, N=27.

Climate Effect	Percentage of respondents who ranked current severity at 4 or 5
Fluvial (River) Flooding	70.4%
Extreme Weather Events	63.0%
Biodiversity loss	44.4%
Food Insecurity	33.3%
Heat Waves	29.6%
Climate Migration	25.9%
Drought	18.5%
No climate effects	6.7%
Forest Fires	0.0%

Table C.2: Perceived future severity of climate effects, N=27

Climate Effect	Percentage of respondents who ranked future severity at 4 or 5
Fluvial (River) Flooding	92.6%
Extreme Weather Events	85.2%
Biodiversity Loss	66.7%
Heat Waves	59.3%
Climate Migration	44.4%
Food insecurity	33.3%
Drought	29.6%
Forest Fires	3.7%
No climate effects	0.0%

Appendix C, continued

In both current threats and perceived threats, the top three threats remain the same, although the percentage of respondents concerned about each increases with the perceived threat. Fluvial (river) flooding is the top concern in both cases, with concern rising from 70.4% to 92.6% of respondents when comparing current to future threats. This indicates concern with increasing precipitation events and their impacts.

When asked what other types of effects not listed would be pertinent to this area, residents identified water quality, pests, pollution, instability of waterways, and soil degradation. When asked what areas of Lewisburg would be most susceptible to climatic effects, 79% of responses identified those living close to the river or in the floodplain as particularly vulnerable. Others identified 'low income populations' or that 'everyone will be vulnerable'.

When asked to consider what areas of their lives would be most affected, residents largely answered their health and their cost of living (Figure C.1).

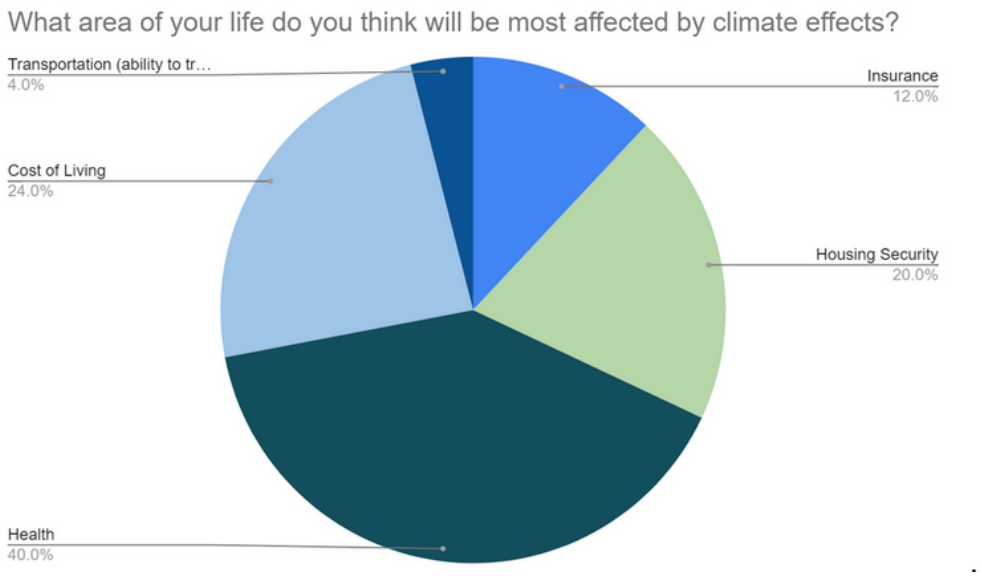

Figure C.1: What area of your life do you think will be most affected by climate effects?. N=27

These responses were shared with the taskforce to ensure that the unique vulnerabilities Lewisburg faces are addressed in the plan – one section of action items is dedicated to flooding and another on disaster risk reduction (DRR). Tailoring climate solutions that address local and regional challenges will help create a more effective and relevant plan.

Appendix D

Results of Community Survey

The purpose of Question 1 and Question 2 on the survey was to better understand the current perceptions of climate action in Lewisburg. Respondents largely claimed they were least satisfied with “Access to Public Transportation”, “Use of Fossil Fuels”, and “Use of Renewable Energy.” (Table D.1).

Table D.1. Levels of satisfaction to current Borough conditions. N= 90

	Percentage respondents not satisfied (1 or 2)
Access to Public Transportation	84.3%
Use of Fossil Fuels	65.1%
Use of Renewable Energy	64.0%
Safety of Bike Riding	46.7%
Equity in Access to Community Resources	26.2%
Density of Shade Trees	25.8%
Disaster Preparedness	23.8%
Walkability	21.1%
Quality of Life	7.8%

When asked if Lewisburg climate action has been satisfactory, respondents leaned towards being less satisfied or neutral.

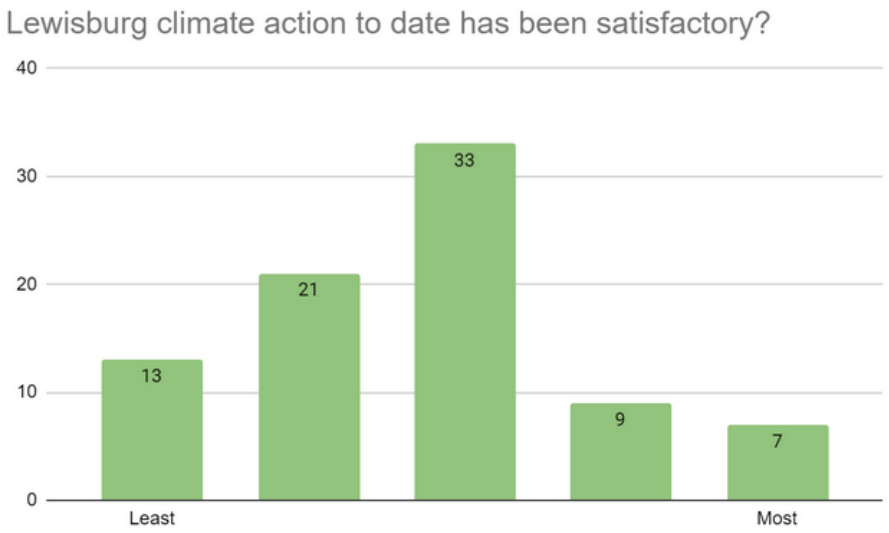

Figure D.1. Responses to “Lewisburg Borough climate action to date has been satisfactory? (1 least, 5 most).” N=83

Appendix D, continued

One purpose of the survey was to understand how community members felt towards the proposed objectives in degree of importance. Results were broken down into respondents who 'Live but don't work', 'work but don't live', and 'live and work' in Lewisburg Borough. As a whole, all of these objectives are supported by a majority of community members that took this survey. (Table D.2).

Table D.2. Percentage of respondents based on residency or employment in Lewisburg who responded 4 (Important) or 5 (Most Important) to the question "How important are each of the following objectives for the Lewisburg Community? (1 Least Important, 5 Most Important)". N= 90

Objectives	Live in Lewisburg	Work in Lewisburg	Live and Work in Lewisburg	All
	n=38	n=21	n=31	n=90
Improve the region's resilience to flooding by restoring, protecting, and conserving community water resources	87%	86%	81%	84%
Grow and maintain a healthy tree canopy and diverse ecosystems	79%	65%	90%	80%
Encourage more biking and walking	79%	71%	84%	79%
Align land use and housing policy with transportation infrastructure to increase access to walking, biking, and public transportation	76%	81%	81%	79%
Improve energy resiliency and efficiency for existing and new buildings	82%	71%	80%	79%
Create a culture of alternative transportation	79%	70%	77%	76%
Encourage more efficient vehicles and resilient transportation systems	78%	71%	71%	74%
Reduce solid waste	71%	67%	80%	73%
Increase industrial energy efficiency	72%	57%	72%	69%
Decarbonize energy sources by transitioning from heating fuels (gas, oil, and coal) to alternative energy systems	59%	62%	77%	66%
Enhance the Borough's operational capacity to withstand and recover from disruptions	61%	57%	67%	62%
Enhance the community's operational capacity to withstand and recover from disruptions	63%	57%	63%	62%
Reduce vehicle miles traveled	55%	67%	55%	58%

Appendix D, continued

The survey asked an open-ended question on specific action items that respondents would like to see implemented. Through open coding, it was found that the area of most concern relates to transportation, followed by ecosystem concerns (Table D.3).

Table D.3: Summary of open responses to the question, "What are the most important action that should be considered to achieve the objectives above?" Totals are more than the number of respondents due to respondents listing multiple priority areas. N=69.

Transportation	53
Walk It / Bike It - Biking Concerns	24
Cars & Parking	10
Public Transportation	14
Electric Vehicles (EV)	5
Ecosystem	24
Trees	11
Flooding and Disaster Risk Reduction	6
Environmental Resiliency	7
Energy	15
Energy Efficiency	5
Green energy	10
Policy and Communication	11
Planning & Policy	7
Public Communication	4
Waste	8

Appendix D, continued

When writing the full climate action plan and vision statement, Question 5 was used to better understand what adjectives community members want Lewisburg to be described as (Table D.4). The results were used to revise the plan's language to better reflect the adjectives respondents gave high importance to. 'Healthy' and 'Equitable' were rated the highest.

Table D.4: Priority of Adjectives to Describe Lewisburg in response to the question, "When thinking about the future of Lewisburg, which of the following descriptions are a priority for you? (i.e. Lewisburg is...) (1 least, 5 most)." N=90.

When thinking about the future of Lewisburg…	Percentage respondents who rated 4 or 5 in priority
Healthy	90%
Equitable	80%
Sustainable	78%
Adaptable	76%
Prosperous	74%
Resilient	73%
Green	73%
Efficient	73%
Durable	67%
Zero-Carbon	53%

Appendix D, continued

Question 6 continues with this future aspiration question and asks “How important do you think each of the following are for Lewisburg's future? (1 Least Important, 5 Most Important)” with topic areas relating to the climate plan’s objectives. Results are reported in Table D.5.

Table D.5: Percentage of respondents based on residency or employment in Lewisburg who responded 4 (Important) or 5 (Most Important) to the question, “How important do you think each of the following are for Lewisburg’s future? (1 Least Important, 5 Most Important).

	Live in Lewisburg	Work in Lewisburg	Live and Work in Lewisburg	All
	n=37	n=21	n=31	n=89
Walkable Community	86%	81%	87%	85%
Energy Efficiency	78%	67%	73%	74%
Bikeable Community	89%	76%	81%	83%
Access to Public Transportation	69%	57%	68%	66%
Access to Renewable Energy	78%	62%	71%	72%
Access to the River	69%	90%	87%	80%
Recycling Programs	78%	67%	87%	78%
Compost Programs	77%	71%	73%	74%
Increase Green Spaces	66%	48%	58%	59%
Reduction of Fossil Fuel Use	70%	57%	68%	66%
Flood Mitigation	78%	76%	74%	76%
Equity	72%	76%	74%	74%

Appendix D, continued

Questions 7-8 were used to understand where residents were interested in learning more and how they like to receive information. These questions will be used for the educational action items throughout the plan (Table D.6) and what methods would be best deployed for community outreach (Table D.7).

Table D.6: Percentage of respondents based on residency or employment in Lewisburg who responded 4 (Important) or 5 (Most Important) to the question, "How interested are you in learning more about each of the following?" (1 Least Important, 5 Most Important).

	Live in Lewisburg	Work in Lewisburg	Live and Work in Lewisburg	All
	n=38	n=21	n=31	n=90
Weatherization	35%	33%	48%	39%
Home Renewable Options	57%	62%	48%	55%
Native Species	66%	67%	58%	63%
Pollinators	63%	67%	65%	64%
Rain Barrels	51%	57%	32%	46%

Table D.7: Percentage of respondents based on residency or employment in Lewisburg who responded 4 (Important) or 5 (Most Important) to the question, "What is the best way for you to access information?" (1 Least Important, 5 Most Important).

	Live in Lewisburg	Work in Lewisburg	Live and Work in Lewisburg	All
	n=38	n=21	n=31	n=90
Social Media	55%	48%	52%	52%
Borough Website	41%	45%	45%	43%
Physical Flyers	26%	30%	23%	26%
Email Alerts	53%	57%	77%	62%
Text Alerts	29%	29%	32%	30%
Informational Events	44%	50%	55%	49%

Appendix E

Bucknell University

Bucknell University is a private institution located partway within Lewisburg Borough and has been working on many of the initiatives laid out in this plan. The University is an important stakeholder in the Lewisburg community and has been working independently on their own climate objectives.

Bucknell University released a Climate Action Plan in 2010 based on a 2008 carbon baseline with these main objectives:

- Deployment of Renewable Energy
- 20% Reduction in 2008 Carbon Baseline
- Offsetting of Scope 3 carbon emissions by year 2020
- Become carbon neutral by 2030
- Greater Integration of Sustainability in Operations, Education, and Research

The Climate Action Plan can be accessed at:
https://digitalcommons.bucknell.edu/cgi/viewcontent.cgi?article=1007&context=technical-reports

In Bucknell's Fall 2021 report, they reported success with a reduced carbon footprint by 29% from the 2008 baseline and a groundbreaking of a 1.6 megawatt solar farm.

Bucknell University achieves their sustainability goals through the hard work of dedicated students, faculty, and staff. The overall scope of sustainability on campus is executed through the President's Sustainability Council, the Office of Campus Sustainability, Bucknell Center for Sustainability & the Environment, and four working groups: Pathway to Zero Waste, Ecological Conservation/Restoration, Carbon Neutrality Group, and Socially Responsible Investing. The University has recently successfully built a trail that connects Linntown to the University in hopes of encouraging more walking and active commuting. The working groups have reported progress on diverting waste from landfills through the installation of a biodigester and a sustainable move-out program.

Additionally, each year the Center For Sustainability & the Environment hosts a Sustainability Symposium and a River Symposium that showcase research and creative works on these topics. Campus tree planting is an ongoing priority on campus and conservation efforts have been advanced through the Bucknell Farm and bee farming.

Appendix F

Lewisburg Borough Approval

Borough of Lewisburg
55 South Fifth Street • Lewisburg, Pennsylvania 17837-1867
Telephone (570) 523-3614 • Fax (570) 524-2270

June 21, 2023

To Whom It May Concern:

On Tuesday, June 20, 2023, Lewisburg Borough Council approved the Lewisburg Climate Action Strategy for a healthy and sustainable future – A Climate Action Plan for Lewisburg Borough.

Sincerely,

Kathy Wendt
Borough Secretary

KDW