Environmental Resiliency Plan

Local Actions and Policies to Reduce the City of Shamokin’s Greenhouse Gas Emissions and Improve Environmental Resilience
Approved by City of Shamokin
9th day of August 2021
Resolution 21-06
Produced by Task Force appointed by the City of Shamokin
From the Desk of the Mayor

The City of Shamokin is undergoing a transformation. Economic revitalization is happening, businesses are opening, and visitors are enjoying what Shamokin has to offer. With the GoShamokin revitalization plan underway reshaping the business district and the Rebuilding Our Community plan engaging residents in neighborhood and city-wide improvement activities, now is the time to consider what impact our work can and does have on environmental issues.

The Environmental Resiliency Plan will guide Shamokin towards a more resilient future by reducing energy costs for the city, businesses, and residents; diversifying and localizing energy generation; and expanding transportation options for residents. Some of this work is already underway. The City replaced municipal building lighting with more energy efficient LED bulbs, grants are underway to improve pedestrian infrastructure, and through resident-driven efforts the famed 99 Steps will soon reopen. But there is more to do, from rooftop solar to energy efficiency programs to expanding recycling options, the City will work with partners to help realize this plan.

Shamokin is the City of Energy. The anthracite coal taken from the surrounding mountains powered this nation. Now, there is a new-found energy in the city with the revitalization efforts underway. Going forward, Shamokin can lead the anthracite region in showing what’s possible with rethinking energy to ensure a more resilient community that can thrive far into the future.

The City is pleased to be part of this vital Environmental Resiliency Plan, and we look forward to working with all those who are interested in ensuring its success,

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John Brown
Credits and Acknowledgments

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- Shamokin Area Businesses for Revitalization (SABER)
- Shamokin Economic Development Authority (EDA)
- SEDA-Council of Governments (SEDA-COG)
- Northumberland County Weatherization

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Executive Summary

To embody “The City of Energy” by building energy independence and resiliency through clean and innovative renewable technologies and expanding safe, accessible, and affordable transportation options to transform the City of Shamokin into a clean, livable, and green community that fosters a sense of local pride.

With seasonal variations and catastrophic natural disasters becoming more intense and frequent, changing climate patterns threaten the health, safety, and overall well-being of communities across the globe. The Commonwealth of Pennsylvania and The City of Shamokin are no exception. The City of Shamokin recognizes a growing need to acknowledge past, current, and potential future environmental challenges as well as adapt to the impacts caused by environmental changes. This Environmental Resiliency Plan includes an inventory of the City of Shamokin greenhouse gas emissions (GHGs) from community-wide activities, establishes environmental and emissions benchmark targets, and outlines feasible actions to achieve such targets. In addition, the Plan identifies ways in which GHG reduction actions can further the City of Shamokin’s ability to adapt to environmental changes while building energy independence and resiliency. Proposed recommendations should support the City of Shamokin’s future financial and environmental resilience and will hopefully be a catalyst for developing a robust strategy to save costs while reducing emissions through energy use changes.

This plan complements the existing GoShamokin revitalization plan and the Rebuilding Our Community Plan by pulling together and expanding upon a set of environmental focused goals into one plan. The plan is aligned with stated community goals and provides a new point of support to:

1. Lower energy costs for residents and businesses by increasing energy efficiency
2. Identify opportunities for renewable energy development
3. Plan for municipal waste with intended lower management costs and cleaner streets
4. Address the state of Shamokin Creek water quality and its flood potential
5. Identify hazards and propose solutions
6. Beautify city streetscapes
7. Improve local mobility and traffic
8. Promote public health and protect vulnerable populations (elderly, disabled, children, etc)

The Environmental Resiliency Plan builds upon existing efforts in the city and provides a framework for additional action that will enhance the City’s ability to adapt to changing environmental conditions while improving quality of life for city residents. By having an Environmental Resiliency Plan, the city will be able to apply for grants in these areas while capitalizing on the environmental impacts of ongoing work and improvements in the city. The plan recognizes the work and strengths of myriad groups in the city’s revitalization efforts and invites groups to collaborate towards realization of this plan.
Introduction

The City of Shamokin is joining an increasing number of local governments committed to addressing environmental issues, including impacts of changing climate, by recognizing that environmental resiliency benefits residents and businesses. The City is acting now to improve environmental resilience through the innovative programs laid out in this plan for both government operations and the community at-large; actions which may also save costs. Furthermore, it is recognized that the City of Shamokin needs to address existing climate and environmental risks such as heat and flooding and adapt its systems and infrastructure to new conditions. This Environmental Resiliency Plan takes advantage of common sense approaches and cutting-edge policies that our local government is uniquely positioned to implement – actions that can reduce energy use and waste, create local jobs, improve air quality, preserve our local landscape and history, reduce risk to people and property, and in many other ways benefit the city for years to come.

Planning Process

While the City of Shamokin has already begun to reduce greenhouse gas emissions and implement some action items found in this plan, creating this Environmental Resiliency Plan is a critical component of a comprehensive approach to reduce the City’s emissions and enhance resiliency. The planning process was based on a 5-milestone approach, developed by ICLEI – Local Governments for Sustainability, USA (ICLEI). Planning is a continuing cycle and does not stop with the development of this document. However, this Environmental Resiliency Plan represents the City of Shamokin’s first planning cycle, including the completion of the first three milestones: conducting an emissions inventory and forecast, setting targets, and developing a plan.

![Figure 1: ICLEI’s Planning Process](image)

A five member task force was appointed by the city to guide the planning process with representation from the City government, SEDA-COG, FAR, and Bucknell University as consultants. During the planning process, task force members met with other local organizations, specifically Shamokin Area Businesses for Economic Revitalization (SABER), the city’s Economic Development Authority (EDA), and the Faith Alliance for Revitalization (FAR), to review plan action items, elicit plan feedback, and garner support for action item leads.
Benefits

The Environmental Resiliency Plan is a framework for the development and implementation of actions that improves the City of Shamokin’s resource and energy use. An Environmental Resiliency Plan can impact more than the natural environment - whether that environmental action is reducing greenhouse gas emissions or cleaning up acid mine drainage in streams. Environmental plans can result in improved public health, saving money, reducing risk, enhancing resource security, job creation, and fostering social equity. In addition to addressing mitigation concerns, the plan considers the vulnerability of the City of Shamokin to hazards that are and will continue to be exacerbated by changing climate conditions, such as more frequent or severe flooding.

Improving Public Health

Environmental actions, particularly those related to transportation, help to clean the air by reducing overall vehicle emissions and therefore improve public health. Restoring and improving pedestrian infrastructure can benefit health by fostering more walking while reducing car miles traveled. Such changes help to engender a greater degree of choice for Shamokin’s residents in how they navigate the city and the region. More transit options combined with transit-oriented development practices make for a more vibrant, livable community with shorter commute times and more opportunities for active transport. This creates more connected and resilient neighborhoods.

Saving Money and Reducing Risk

Measures taken to reduce greenhouse gas emissions create a potential for significant cost savings. 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. For instance, a “right-sized” vehicle fleet is less expensive to purchase and fuel, while also being less costly to maintain. 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.

Enhancing Resource Security

Reducing overall energy demand results in enhanced energy security by putting less strain on the energy system as a whole. Implementing renewable energy where possible also enhances energy security and system resiliency. For example, extreme and prolonged heat waves can put considerable strain on the reliability of energy delivery in peak periods, possibly leading to service disruption during times when cooling is most needed. By increasing efficiency across the board, such service disruptions are less likely and the city will be able to better cope with those situations.
Creating Jobs

The U.S. Department of Energy reports that sustainable tourism, green construction, and urban agriculture can provide job opportunities that didn’t exist in the past. Renewable energy is also a growing sector. Measures such as those in this plan can spur business and job growth during the design, manufacture, and installation of energy efficient technologies, which presents a particular opportunity to reinvest in the local economy and generate jobs in the area.

Fostering Social Equity

The City of Shamokin is an environmental justice community - higher rates of poverty and a legacy of environmental contamination mean that the city faces specific challenges that can impact human and environmental health. Social equity and justice are major considerations for addressing such issues to ensure that the benefits of action can be experienced by those most impacted. Equity is when all individuals have access to the opportunities necessary to satisfy their essential needs, advance their well-being and achieve their full potential. The Environmental Resiliency Plan will help further some of these concerns and considerations and work towards a better quality of life for city residents.
The City of Shamokin Community-Wide GHG Emissions

In order to determine energy usage patterns in the Shamokin for the purposes of determining where energy cost saving measures can be implemented, a greenhouse gas inventory was conducted in Fall 2020 using the latest available data. The following figure breaks down community-wide emissions. Note that emissions from the city’s operations are embedded within the community-wide totals. For example, emissions from government buildings are included in the “Commercial” sector and emissions from Shamokin’s fleet vehicles are included in the “Transportation” figure below. Government operations are therefore a subset of total community emissions. Government emissions include all sources for which the local government exercises direct operational control.

![CO2e By Category](image)

Figure 1: Shamokin Community-Wide GHG Emissions

The completion of a local emissions study, or “greenhouse gas inventory,” determines emissions levels for the community as a whole. Community-wide emissions represent the sum total of emissions produced within the City of Shamokin’s limits as well as emissions resulting from electricity use within the jurisdiction, even if said electricity is generated elsewhere. In this way, the community-wide figures represent all emissions for which the community is responsible.

Since the early 1990s, U.S. cities have developed community-wide and local government operations greenhouse gas (GHG) inventories based on accounting protocols created by ICLEI. Known as the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions and the Local Government Operations Protocol, these standards created a credible and defensible methodology which accelerated the number of inventories created and provides consistency within and across U.S. communities. In 2014, ICLEI partnered with the World Resources Institute and C40 Climate Leadership Group to create the Global Protocol for Community Scale GHG Emissions, which allows communities around the world to compare their emissions footprint.
The City of Shamokin Environmental Resiliency Plan

While the local government cannot address environmental issues by itself, government policies and practices can result in improved environmental conditions as well as reduce greenhouse gas emissions from a range of sources and help prepare for the anticipated impacts of changing climate such as flooding and heat waves. In addition, the City and its partners will assist residents and businesses in their endeavors to reduce emissions through programs explained in this Plan. By working together, the City of Shamokin can not only do its part toward improving environmental outcomes - 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.

In the following sections, 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. This Climate Action Plan includes a combination of existing policies and programs as well as new ideas based on best practices from around the country. Whether an action is new or existing is noted in the action heading. Additionally, the Commonwealth of Pennsylvania’s 2018 Climate Action Plan includes many actions that are meant to be implemented by local governments as well as on the state-level. This Environmental Resiliency Plan incorporates some of those actions where possible and appropriate.

Calculating expected emissions reductions for each objective and action requires making assumptions about 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 has been devised to represent the emission reductions associated with each objective and its actions:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>GHG Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="small.png" alt="Leaves" /></td>
<td>[Small Impact Range]</td>
</tr>
<tr>
<td><img src="moderate.png" alt="Leaves" /></td>
<td>[Moderate Impact Range]</td>
</tr>
<tr>
<td><img src="significant.png" alt="Leaves" /></td>
<td>[Significant Impact Range]</td>
</tr>
</tbody>
</table>
In addition to measuring the GHG reduction potential, each objective and action is also evaluated for other benefits such as public health, equity and justice, jobs and prosperity, and environmental conservation. The symbols below will indicate which co-benefits a measure could generate.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Co-Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌟</td>
<td>Supports jobs and economic prosperity</td>
</tr>
<tr>
<td>🌍</td>
<td>Advances social equity</td>
</tr>
<tr>
<td>🌲</td>
<td>Fosters resource security</td>
</tr>
<tr>
<td>🍎</td>
<td>Improves public health and local environmental quality</td>
</tr>
</tbody>
</table>
Commercial Buildings

Energy consumed in commercial buildings account for 18.1% of the City of Shamokin’s total GHG emissions. Improving the efficiency of our commercial building stock and reducing the energy intensity of the sector will contribute significantly to achieving the city’s greenhouse gas reduction target. Such opportunities include retrofitting existing commercial and municipal buildings and ensuring that future activities in these sectors are compatible with our resiliency goals.

### Objective CB 1 – Existing Commercial and Industrial Buildings

Retrofit existing commercial and industrial buildings to achieve a 10% reduction in energy use by 2030 and a 40% reduction by 2050

<table>
<thead>
<tr>
<th>Action Number</th>
<th>Action</th>
<th>New (N) or Existing (E)</th>
<th>Co-Benefits</th>
<th>Lead Actor(s)</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB-1A</td>
<td>Partner with local utility companies to ensure commercial properties maximize use of energy efficiency rebate programs</td>
<td>N</td>
<td>Shamokin EDA</td>
<td>Number of commercial properties</td>
<td></td>
</tr>
<tr>
<td>CB-1B</td>
<td>Establish PACE or similar program and/or partner with utilities to offer on-bill financing for commercial energy efficiency retrofit projects</td>
<td>N</td>
<td>Shamokin EDA</td>
<td>Number of PACE or similar projects</td>
<td></td>
</tr>
<tr>
<td>CB-1C</td>
<td>Upgrade all municipal building equipment and lighting to highest standards of energy efficiency</td>
<td>E</td>
<td>City of Shamokin</td>
<td>Number of upgrades</td>
<td></td>
</tr>
</tbody>
</table>
# Objective CB 2 – New Commercial and Industrial Buildings

Ensure new commercial and industrial buildings are built or retrofitted to maximize energy efficiency.

<table>
<thead>
<tr>
<th>Action Number</th>
<th>Action</th>
<th>New (N) or Existing (E)</th>
<th>Co-Benefits</th>
<th>Lead Actor(s)</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB-2 A</td>
<td>Consider energy efficiency in updated building codes</td>
<td>N</td>
<td>City of Shamokin and Shamokin EDA</td>
<td>Update of codes if needed</td>
<td></td>
</tr>
</tbody>
</table>
Residential Buildings

Energy consumed in residential buildings accounts for 23.8% of the City of Shamokin’s total GHG emissions. Improving the efficiency of our residential building stock will contribute significantly to reducing emissions, while saving residents money on utility bills and reducing the need for new infrastructure. Such opportunities include retrofitting existing residential buildings, increasing the quality of new construction, and ensuring that future activities in these sectors are compatible with our resiliency goals.

<table>
<thead>
<tr>
<th>Action Number</th>
<th>Action</th>
<th>New (N) or Existing (E)</th>
<th>Co-Benefits</th>
<th>Lead Actor(s)</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>RB-1A</td>
<td>Continue to weatherize homes through the county program</td>
<td>E</td>
<td>City of Shamokin and Northumberland Weatherization</td>
<td>City of Shamokin and Northumberland Weatherization</td>
<td>Number of homes weatherized</td>
</tr>
<tr>
<td>RB-1B</td>
<td>Increase residential uptake of utility incentives for energy efficiency</td>
<td>N</td>
<td>City of Shamokin and Northumberland Weatherization</td>
<td>City of Shamokin and Northumberland Weatherization</td>
<td>Number of residences</td>
</tr>
<tr>
<td>RB-1C</td>
<td>Bring owner occupied homes up to code</td>
<td>N</td>
<td>City of Shamokin and SEDA-COG</td>
<td>City of Shamokin and SEDA-COG</td>
<td>Number of homes</td>
</tr>
<tr>
<td>RB-1D</td>
<td>Public awareness programs for residents on best energy efficiency practices</td>
<td>E</td>
<td>FAR</td>
<td>FAR</td>
<td>Number of programs held &amp; individuals reached</td>
</tr>
</tbody>
</table>
**Objective RB 2 – New Residential Buildings**

Ensure new residential buildings and homes are built to maximize energy efficiency

<table>
<thead>
<tr>
<th>Action Number</th>
<th>Action</th>
<th>New (N) or Existing (E)</th>
<th>Co-Benefits</th>
<th>Lead Actor(s)</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>RB-2A</td>
<td>Consider energy efficiency in updated building codes</td>
<td>N</td>
<td>City of Shamokin and Shamokin EDA</td>
<td>Update of codes if needed</td>
<td></td>
</tr>
</tbody>
</table>
Energy Production

Emissions from fossil fuel combustion for energy, including transportation, represent 87.4% of the community’s total GHG emissions. Energy Production is a cross-cutting sector in that nearly all activities that take place in the community require energy of some sort. While PPL is working hard to increase the percentage of electricity generated through renewable sources, opportunities also exist for citizens and local government to produce small-scale renewable energy or fuels, reducing the need for fossil fuels. This sector is limited to energy production exclusively – objectives and actions that focus on end use energy efficiency are included in other sectors. The programs and projects within this section are designed to spur local government and community investment in renewable energy sources including those that produce electricity, heat, and mobile fuels.

### Objective EP 1 – Small-Scale Renewable Energy

Retrofit existing commercial and industrial buildings to achieve a 10% reduction in energy use by 2030 and a 40% reduction by 2050

<table>
<thead>
<tr>
<th>Action Number</th>
<th>Action</th>
<th>New (N) or Existing (E)</th>
<th>Co-Benefits</th>
<th>Lead Actor(s)</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP-1A</td>
<td>Encourage community partners to finance and install renewable systems on large-scale private facilities</td>
<td>N</td>
<td>SABER; Shamokin EDA</td>
<td>Number systems installed</td>
<td></td>
</tr>
<tr>
<td>EP-2A</td>
<td>Install renewable energy systems on City-owned facilities such that 20% of total energy demand of local government buildings is met.</td>
<td>N</td>
<td>City of Shamokin</td>
<td>KW produced by installed systems</td>
<td></td>
</tr>
</tbody>
</table>
Waste, Composting, & Recycling

The City of Shamokin’s solid waste is disposed of, primarily, at landfills. Emissions from decaying putrescible material directly contribute 12.6% of the City of Shamokin’s total GHG emissions and contribute to emissions in the Transportation sector via hauling of waste to and from facilities. Additionally, embodied energy within the items that we throw away might be harnessed through reuse and recycling of materials. It is in The City of Shamokin's long-term interest to reduce waste at its source, expand recycling facilities, reduce food waste, and enable re-use of materials. This section focuses on opportunities to reduce waste, reuse materials, and recycle what cannot be reused.

Objective WR 1 – Reduce Solid Waste

Reduce solid waste by 25% by 2030.

<table>
<thead>
<tr>
<th>Action Number</th>
<th>Action</th>
<th>New (N) or Existing (E)</th>
<th>Co-Benefits</th>
<th>Lead Actor(s)</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>WR-1A</td>
<td>Establish “Building Materials Reuse Warehouse” for community construction and demolition use.</td>
<td>N</td>
<td></td>
<td>City of Shamokin</td>
<td>Establishment of warehouse</td>
</tr>
<tr>
<td>WR-1B</td>
<td>Expand recycling pick up</td>
<td>E</td>
<td></td>
<td>City of Shamokin</td>
<td>Number of residences</td>
</tr>
<tr>
<td>WR-1C</td>
<td>Continue metal mania and start e-waste event</td>
<td>E</td>
<td></td>
<td>FAR</td>
<td>Number of events and tons diverted</td>
</tr>
<tr>
<td>WR-1D</td>
<td>Provide community workshops on composting, recycling, and low-waste lifestyle changes</td>
<td>N</td>
<td></td>
<td>FAR</td>
<td>Number of programs held &amp; individuals reached</td>
</tr>
</tbody>
</table>
Transportation

Emissions from transportation are a common sight to nearly everyone in Shamokin. Besides emitting greenhouse gases, transportation with fossil fuels also produce a host of criteria air pollutants when combusted, reducing local air quality, and affecting our health. Transportation accounts for 41.6% of the City of Shamokin’s total GHG emissions. This section focuses on programs and policies to reduce emissions from transportation and includes design-oriented approaches as well as expansion of alternate modes such as walking, biking, or public transportation to and from the most common destinations in the city.

### Objective TR 1 – Transportation

Reduce vehicle miles traveled by single-occupancy vehicles by 25% by 2040.

<table>
<thead>
<tr>
<th>Action Number</th>
<th>Action</th>
<th>New (N) or Existing (E)</th>
<th>Co-Benefits</th>
<th>Lead Actor(s)</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR-1A</td>
<td>Improve walkability of the City through repairing and improving pedestrian infrastructure.</td>
<td>E</td>
<td>City of Shamokin; SEDA-COG</td>
<td>Number and type of improvements</td>
<td></td>
</tr>
<tr>
<td>TR-2A</td>
<td>Work with regional collaboratives to improve public transportation options to better connect Shamokin to regional communities and employment centers.</td>
<td>E</td>
<td>City of Shamokin; SEDA-COG</td>
<td>Number of route expansions; number of riders</td>
<td></td>
</tr>
<tr>
<td>TR-3A</td>
<td>Continue to increase business and employment options in the city to reduce miles traveled for work outside the City.</td>
<td>E</td>
<td>SABER</td>
<td>Number of jobs created</td>
<td></td>
</tr>
</tbody>
</table>
Adaptation

This section provides a high-level assessment of potential climate impacts and environmental issues present in the City. While the City of Shamokin does not currently have the capacity to complete a more robust climate vulnerability assessment and adaptation action, the following analysis was completed to educate the public on local impacts and inform future efforts. The City and SEDA-COG are currently working on flood mitigation issues and pursuing grant funding to address some of these issues.

Anticipated Climate Impacts: Heat and Flooding

Over the last 110 years, the Commonwealth of Pennsylvania has experienced a long-term warming of more than 1.8°F, as well as an increasing number of wet months. The warming and wetting trend is expected to continue at an accelerated rate, especially if the world continues on its current path of greenhouse gas emissions. Under this scenario, Pennsylvania will be about 5.4°F warmer than it was at the end of the 20th century, and the annual precipitation will increase about 8%. While the likelihood of meteorological drought is projected to decrease, months with above-average precipitation will continue to rise. These changes will have a variety of ecological, economic, and social impacts on the Commonwealth, particularly related to agriculture, energy, forests, human health, outdoor recreation, water, wetlands and aquatic ecosystems, and coastal resources (Shortle et al. 2015).

The climate hazards prioritized by the Pennsylvania Climate Impacts Assessment 2021 and most applicable to the City of Shamokin are increasing average temperatures, heat waves, and heavy precipitation and inland flooding. The City of Shamokin and surrounding area do consist of census blocks that are environmental justice blocks as well. In the Central Susquehanna Opportunity report, it identified 30% of individuals including 35% of children (aged 0-17) are living in households with income below the Federal Poverty Level (FPL) – nearly double the national average of 14.05/19.50% respectively. In addition, only 14.06% of the population aged 25 and older have obtained a Bachelor's level degree or higher, less than half the national average of 32%. Shamokin also has double the unemployment rate of the national average (6.5/3.4 respectively). The population is getting younger, but 20.6% of the population is above 65 years old and 20.8% of those residents are living alone. Women are also much more likely to live alone at this age. According to the CDC all of these demographics are especially vulnerable to extreme heat. It is thus critical that considering ways to reduce vulnerability to heat waves be considered as part of the Environmental Resiliency Plan.
In addition to ameliorating vulnerability to heat waves, the City must also plan for potential increases in flooding range and severity. The current flood map for the City is included below. This could be altered by the H&H study that is funded but not underway.
Adaptive Environmental Resiliency Measures

Some energy efficiency and emissions reduction measures also reduce risk to climate hazards. The following are a few of many examples of how these outcomes can be related to one another. The Environmental Resiliency Plan will continue to evaluate possible viable measures that the City can support and implement to increase community resiliency to heat and flooding:

- Actions that improve energy efficiency and distribute renewable energy can (1) reduce pressure on the grid when there is higher energy demand for heating and air conditioning during extreme heat events, and (2) increase energy independence for households and businesses, as opposed to complete reliance on centralized power infrastructure that could fail during a catastrophic event. These types of actions include, but are not limited to:
  - Energy-efficient building design for new construction, and retrofits for existing buildings (e.g. weatherization)
  - Onsite combined heat and power (CHP)
  - Smart grid technologies
  - Microgrids

- Actions that reduce impervious surfaces can reduce the potential for flooding by retaining stormwater in place. These types of actions include, but are not limited to:
  - Expanding or restoring green space
  - Installing green roofs, rain gardens, bioswales, pervious pavers, and other green infrastructure (as well as requiring them for future development)

- Installing green roofs and planting trees adjacent to buildings can regulate indoor temperatures during extreme heat events

- Expanding and protecting alternative transportation routes (bicycle, pedestrian, bus, and rail) provides network redundancies and alternative routes for emergency evacuation

- Water efficiency and conservation actions can (1) reduce pressure on the grid from energy used for pumping, treating, and distributing water, and (2) make the community less vulnerable to drought
References


Appendix - Resolution
Resolution 21-06

A RESOLUTION OF THE CITY OF SHAMOKIN, NORTHUMBERLAND COUNTY, PENNSYLVANIA FORMALLY ADOPTING THE SHAMOKIN ENVIRONMENTAL RESILIENCY PLAN.

WHEREAS, the City intends to support climate change mitigation and adaption efforts within Pennsylvania through local actions that reduce greenhouse gas emissions and build resilient infrastructure; and

WHEREAS, the city intends to be a welcoming and sustainable community while promoting public health and safety for current and future residents and visitors; and

WHEREAS, the City recognizes the need to prepare for the increasing frequency of extreme weather events, including floods, droughts, and heat waves through forward thinking actions including incorporating green infrastructure, deploying renewable energy systems and supporting development of a localized economy; and

WHEREAS, the City intends to pursue climate change mitigation and adaptation funding for these projects by aligning its actions with those of state, national, and international initiatives; and

WHEREAS, the City supports sustainable economic development by advocating for clean affordable energy, re-localized economy and job opportunities, sustainable and energy efficient building standards, and strong environmental stewardship practices; and

WHEREAS, the City Council recognizes the Shamokin Environmental Resiliency Plan as part of its longrange documents and incorporates it as one framework to become a more sustainable and welcoming community.

NOW, THEREFORE, BE IT RESOLVED, that the City of Shamokin adopts the Shamokin Environmental Resiliency Plan, produced with support and guidance of the Pennsylvania Department of Environmental Protection and ICLEI — Local Governments for Sustainability.

This Resolution was enacted by the City of Shamokin council this 9th day of August, 2021, a quorum being present and the majority of the quorum of the Council voting in favor thereof.

A TEST:

Robert M. Slaby, City Administrator

BY:

John Brown, Mayor