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Developing a Community Sustainability Plan

Delaware Resilient and Sustainable Communities League



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CONTENTS

Authors and Acknowledgements	i
Purpose	1
Why Do Communities Need a Sustainability Plan?	1
How this Document Was Prepared	2
Sustainability Versus Resilience: What’s the Difference?	2
Major Sustainability Plan Elements	3
Introduction.....	3
Plan vision and goals.....	3
Plan framework	4
Community engagement.....	4
Background	4
Sustainability Categories.....	5
Taking Action	23
Goals, strategies, and implementation	23
Action plan	23
Community action	24
Implementation.....	24
References:	25
Appendix A – Sample Table of Contents.....	1

PURPOSE

This guidance document was developed for towns, cities, and county governments in Delaware as a framework in helping to craft their own sustainability plans.

Sustainability plans and resilience plans have many similarities and potential overlap. This document describes the expected impacts that Delaware towns will face from climate change, compares similarities and differences between sustainability and resiliency, and provides an overview of components that are often found within sustainability plans.

This document is not intended to be prescriptive. Rather, local government officials and their consultants are encouraged to consider how each section may apply to their own town or county and use it to guide planning for the future of their community.

WHY DO COMMUNITIES NEED A SUSTAINABILITY PLAN?

The Institute for Sustainable Communities states the following:

"Throughout the world, people want the same things: access to clean air and water; economic opportunities; a safe and healthy place to raise their kids; shelter; lifelong learning; a sense of community; and the ability to have a say in the decisions that affect their lives."¹

As this quote illustrates, sustainability is not solely about climate change. A sustainable community considers the interconnectedness of human societies and works to ensure that today's resources are passed down and available to future generations. Social, environmental, economic, and health needs are all intertwined; one cannot support public health in a degraded and changing environment with polluted air and water, and economic prosperity is less meaningful in an unhealthy community where no one wants to live.

Many of the sustainability actions described in this guide have *co-benefits*: desirable indirect effects or positive impacts in multiple sectors. For instance, designing walkable communities can reduce commute times, improve local air quality by reducing the amount of vehicle traffic, benefit public health by encouraging walking or biking, and make the area more attractive and appealing to residents. Creating and conserving wetlands and other natural resources preserves the ecosystem services they provide, such as natural flood protection, better water quality, habitat for commercially important species, and recreation opportunities. Investing in more efficient buildings can lower energy bills, producing cost savings that can be reinvested in other initiatives. These co-benefits demonstrate the need for sustainability planning, and the ways in which sustainability can have many positive effects at once. Having a sustainability plan in place also makes it easier to secure funding

¹ Institute for Sustainable Communities. n.d. What is a Sustainable Community? Accessed 1 September 2022 at <https://sustain.org/about/what-is-a-sustainable-community/>

and work with partners by clearly articulating why a project is needed, how it ties into a community's overall plan and vision, and what sustainability benefits and co-benefits it will bring to the town or county.

That said, the importance of setting goals for greenhouse gas emissions reduction cannot be overstated. Climate change poses significant risks to communities across Delaware, and its impacts will significantly exacerbate many existing societal challenges, from public health to infrastructure maintenance to emergency planning. Climate change will result in more frequent heavy precipitation events, leading to flooding that can damage homes and make roadways inaccessible. In areas with combined sewer systems, stormwater overflow can result in dangerous discharge of untreated sewage into bodies of water. Another key issue surrounding climate change is rising temperatures: summer heat waves are projected to become more intense, especially in dense urban areas where asphalt and pavement retain heat and shade trees are limited. High nighttime temperatures can make heat waves more deadly by limiting the body's ability to rest and cool down at night. Along the coast, climate change also contributes to sea level rise, causing low-lying coastal areas to be gradually inundated with saltwater. This can damage infrastructure, exacerbate coastal flooding events, cause saltwater intrusion issues for agriculture and drinking water, and drown the marshes and wetlands that coastal communities rely on for natural storm protection.

Climate impacts are already occurring in Delaware, but reducing greenhouse gas emissions now can reduce the future consequences of climate change. Acting now on reducing emissions and adapting to climate impacts will result in communities that are better prepared for our changing environment and communities that are facing fewer climate disasters.

HOW THIS DOCUMENT WAS PREPARED

Resiliency planners and scientists from across the state convened through the Delaware's Resilient and Sustainable Communities League (RASCL) to bring you this guidance to better assist communities in preparing for the future. Development of this document was led by the RASCL Community Planning Assistance (CPA) subcommittee.

The authors derived the information contained in this document from a number of sources, including sustainability plans for Newark, Wilmington, Fenwick Island, Milton, and Frederica—all 2017 recipients of the Sustainable Communities Planning Grant awarded by the Delaware Department of Natural Resources and Environmental Control (DNREC) Division of Climate, Coastal and Energy (DCCE). The authors also looked at plans from larger cities in neighboring states, such as Annapolis, Baltimore, and Philadelphia.

SUSTAINABILITY VERSUS RESILIENCE: WHAT'S THE DIFFERENCE?

Sustainability is the ability to meet the needs of the present without compromising the ability of future generations to meet their needs. Having a sustainability plan in place can be key in identifying long- and short-term goals for responding to future climate change from a sustainability standpoint. What measures can we put in place at the local level to lessen electricity consumption?

How can we promote walkability through engineering design? What are some ways that we can promote local agriculture and reduce the need to import as much food?

Resilience is the ability to recover from or adjust easily to change. It prioritizes responding to the pressures and threats we are faced with now and into the future and preparing to lessen the frequency and duration of disruptions from those threats. A good sustainability plan, therefore, will include elements of resilience. How will we adapt to expected rises in temperatures from an agricultural standpoint? How might we respond to sea level rise through infrastructure projects? What changes can we make in our coastal towns to help them withstand expected stronger hurricanes?

In short, sustainability focuses on maximizing potential benefits through greenhouse gas mitigation and environmental conservation and resiliency focuses on minimizing potential harm through adaptation efforts and mitigation of risks. While this document focuses primarily on sustainability, not resilience, it is important to note that the distinction between these two terms is not always clear-cut. In many cases, actions taken by a county or town promote both sustainability *and* resilience. Preserving forested wetlands, for example, can provide both carbon sequestration benefits as well as flood resilience. Whether an action falls more under the umbrella of sustainability or resilience, it will likely benefit your community now and in the decades to come.

MAJOR SUSTAINABILITY PLAN ELEMENTS

The sections below outline the elements that are commonly found within sustainability plans. These sections are split into the “Introduction”, “Sustainability Categories”, and “Taking Action” subsections. Each section describes the information commonly contained under each heading and why that information is relevant to a sustainability plan. It is not necessary to include every section or every piece of information described below, nor it is critical to organize your plan in exactly this way. Rather, the information below is intended as an overview of how a sustainability plan might be organized and the information contained within. Appendix A presents an example Table of Contents that concisely outlines this information.

INTRODUCTION

The introduction of the sustainability plan should include acknowledgements to the authors and collaborators. It should briefly outline the purpose of the plan. It may also include any or all of the elements listed below.

PLAN VISION AND GOALS

As this document will show, there are many possible approaches to sustainability, and many valid reasons to pursue a sustainability plan. One potentially helpful tool is a vision statement—a broad aspirational statement of what the plan is intended to achieve, and the kind of sustainable future you want to create for your community. Do you want to become a state leader in reducing greenhouse gas emissions? Revitalize the local economy with good-paying green

jobs? Preserve historic and cultural sites from encroaching sea level rise? Promote healthy environments with clean air and water for future generations?

Begin the plan with a vision statement that draws a clear link between the community's core values and how sustainability supports those values. By painting a clear picture of the destination, a vision statement can inspire support from the community, and help guide more specific goalsetting later in the process.

PLAN FRAMEWORK

The plan framework should include information about how the plan came to be. For example, identifying the committee that created the plan and any applicable funding sources used in its creation. Most importantly, it should detail the project approach and scope. A very common approach is to identify sustainability categories that the town or county would like to target. Common categories are explored later in this document and include topics like clean transportation, energy efficiency, renewable energy, and waste reduction. More specific objectives are identified for each category, and strategies are listed to achieve each objective.

COMMUNITY ENGAGEMENT

Community engagement is an important part of both sustainability and resilience planning. A community-driven process can help highlight what issues are of most immediate concern, bringing in fresh perspectives from those most directly impacted. It can also improve community buy-in for implementation of a plan that residents feel they are a part of, rather than the plan being imposed on them. For further information on successful community engagement, consult *Community-Driven Climate Resilience Planning: A Framework*, a free resource by the National Association of Climate Resilience Planners that can be accessed at <https://www.nacrp.org/>.

In this section, describe the community outreach that was conducted in the creation of the plan. For example, this section could describe any community meetings that were held, include survey results if surveys were conducted, and other strategies used to engage the community and receive feedback, such as SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis.

BACKGROUND

The background of the plan should introduce the reader to the town or county. Providing an overview of the history of the town and its demographics (e.g., income levels, racial and ethnic composition, student population, seasonal vs. year-round residents, etc.) is common. The location of the town within the landscape and any notable features, such as whether it is situated on a river or is a coastal town, also provides additional context that is an important consideration for sustainability.

The structure of the town or county government is also useful information to note in this section. For example, what are the relevant boards and committees? What sustainability-related community services are provided? Provide an overview of the town plans currently in existence, such as a comprehensive plan, bike plan, or flood resiliency plan. Take credit for work already completed by including current or past sustainability initiatives enacted by the town.

This section can also include definitions of relevant terms for clarity. “Climate change”, “resiliency”, and “sustainability”, which are often misunderstood by the public and can have different definitions depending on context, should be explicitly defined.

Every town and county in Delaware is and will continue to be impacted by climate change. Include information of the specific impacts the town or county has seen or can expect. The *2014 Delaware Climate Change Impact Assessment*² can provide much of this information. This section can draw on statewide climate assessments, but should also be personalized to your community’s specific needs. For instance, coastal communities should include information on sea level rise projections, while urban communities may be more concerned with extreme heat and the urban heat island effect.

SUSTAINABILITY CATEGORIES

Sustainability plans generally outline actions in multiple paths to sustainability. The section below describes several possible categories of actions that can be included in a plan. While you may choose to include all of the categories below, your town may wish to target actions more narrowly on just a few categories. It is your town sustainability plan; your town gets to decide what is most important to include.

Each category should address three questions: What is it? Why is it important? And how do we achieve it?

CLEAN TRANSPORTATION

Working towards clean transportation includes transitioning away from gas-powered cars and buses, towards zero-emission vehicles. It also includes expanding access to public transportation options, including buses, rail, ferries, and more. As of the most recent Delaware Greenhouse Gas Inventory Report, the transportation sector is the largest source of greenhouse gas emissions in the state, representing 30% of gross emissions. The vast majority of these

² Delaware Department of Natural Resources and Environmental Control. 2014. Delaware Climate Change Impact Assessment. Accessed 1 September 2022 at <https://dnrec.alpha.delaware.gov/climate-coastal-energy/climate-change/>

transportation emissions are from passenger cars and heavy-duty vehicles³. Transitioning to zero-emission vehicles also improves air quality by reducing other common air pollutants, such as nitrogen oxides and particulate matter, that are released by burning gasoline. A recent study found that each electric vehicle replacing a gas-powered car brought nearly \$10,000 in social benefits from improved community health and air quality⁴. These benefits are shared by everyone, not just the one who purchased the car.



Electric buses can provide sustainable, accessible, safe, zero-emission transportation options.

Public mass transit has many co-benefits. One 2014 study found that public transportation is substantially safer than automobile travel, with public transportation passengers having about one-tenth the fatalities per mile traveled when compared to automobile passengers⁵. Mass transit also has efficiency benefits: a single bus or train can carry dozens of passengers who would otherwise be riding in separate vehicles, reducing fuel usage and traffic congestion. It also improves accessibility for residents who do not own a car or cannot drive.

Example objectives under this category include:

- Transitioning the existing bus and city vehicle fleet to electric
- Installing electric vehicle chargers
- Supporting and incentivizing public transportation options
- Adopting limited parking on some streets

³ Delaware Department of Natural Resources and Environmental Control. 2018. Delaware's Greenhouse Gas Inventory 2018. Accessed 1 September 2022 at <https://documents.dnrec.delaware.gov/Air/Documents/2018-DE-GHG-Inventory.pdf>

⁴ Ontario Public Health Association. 2020. Clearing the Air. Accessed 9 Sep 2022 at <https://clearingtheair.ca/>

⁵ Litman T. Evaluating Public Transit Benefits and Costs: Best Practices Guidebook. Victoria Transport Policy Institute; 2014.

Potential resources:

- Information about DNREC clean fuel and transportation initiatives can be found at <https://dnrec.alpha.delaware.gov/climate-coastal-energy/clean-transportation/>.
- Energize Delaware offers grants for local governments to expand their EV fleets. For more information, visit <https://www.energizedelaware.org/ev-fleets/>.
- The *Strategic Implementation Plan for Climate Change, Sustainability and Resilience for Transportation* is the Delaware Department of Transportation's (DelDOT) plan to promote resilient and sustainable transportation in Delaware in the context of a changing climate. Information about DelDOT's progress towards implementing public health and safety recommendations begins on page 15. The plan can be accessed at https://deldot.gov/Publications/reports/SIP/pdfs/SIP_FINAL_2017-07-28.pdf.

WALKABLE AND BIKEABLE COMMUNITIES

A walkable community is one in which pedestrians can easily and safely travel on foot to satisfy their needs and desires. Likewise, a bikeable city has the infrastructure and design to safely facilitate transportation on bike. A common threshold for walking is a 15-minute transportation time—can residents walk to the grocery store, park, and library in 15 minutes? Can they do it safely? Does the same go for residents with disabilities? Are sidewalks built—and maintained—to accommodate wheelchairs and other mobility devices? Similarly, the Delaware Bike Council uses the “12-year-old test” to shape grant decisions. Do the parents of a typical 12-year-old feel comfortable allowing their child to bike to school, to the library, to friends’ houses in nearby neighborhoods?

Making communities more walkable and bike-friendly can have many positive impacts. It directly reduces vehicle miles traveled, which reduces carbon emissions from gas-powered vehicles, as well as other air pollutants that

affect local air quality. Encouraging walking and biking results in healthier citizens and higher property values, and can attract young professionals and families looking to live in a safe, healthy community. Investing in bike-friendly and pedestrian-friendly infrastructure reduces the risk of



Public walking paths, like the Milford Riverwalk, provide pedestrian connectivity as well as recreational opportunities.

serious injury in car crashes involving cyclists or pedestrians. It also increases equitable access to residents without access to a car.

Example objectives under this category include:

- Creating a bike plan
- Identifying priority walking and biking routes
- Surveying and inventorying sidewalks
- Becoming a certified Bicycle-Friendly Community by the League of American Bicyclists
- Creating a bike-share program
- Connecting existing walking and biking trails to form larger networks
- Implementing traffic calming techniques to improve pedestrian safety (for more information, visit <https://www.transportation.gov/mission/health/Traffic-Calming-to-Slow-Vehicle-Speeds>)

The Town of Frederica's sustainability plan⁶ provides a list of objectives relating to walkability and bikeability on page 12.

Potential resources:

- The DeIDOT Transportation Alternatives Program (TAP) is a federally funded but community -driven program that provides funding for the development and construction of non-traditional transportation projects with the goal of providing safe, reliable, and convenient choices for non-motorized users such as pedestrians and bicyclists. More information about the program can be accessed at <https://deldot.gov/Programs/tap/index.shtml>.
- Information from the Delaware Department of Transportation's Bicycle Council can be found at https://deldot.gov/Programs/bike/biking_in_delaware/.
- A variety of tools and resources, including a walkability assessment tool, can be accessed through the Complete Communities toolbox at <https://www.completecommunitiesde.org/planning/complete-streets/walkable-communities/>.

GREEN INFRASTRUCTURE

Green infrastructure is a nature-based approach that uses natural systems to address environmental challenges like stormwater management, soil erosion, flooding, and air and water

⁶ Town of Frederica. 2019. Sustainable Communities Planning Grant: Town of Frederica. Accessed 18 Aug 2022 at <https://frederica.delaware.gov/files/2020/12/SUSTAINABLE-COMMUNITIES-GRANT-FREDERICA.pdf>

pollution⁷. Many of these common infrastructure problems can be solved by natural systems: for instance, wetlands can absorb runoff during a storm and slowly release it over time, reducing the risk of flooding, and simultaneously filtering pollutants from that runoff before it enters waterways.



Common types of green infrastructure include riparian buffers, rain gardens, green roofs, vegetated sand dunes, and living shorelines. Riparian buffers are strips of trees and shrubbery, usually

In addition to their myriad of stormwater and flood reduction benefits, rain gardens can be attractive landscaping features.

between a waterway or wetland and an agricultural field or developed land. The trees and other vegetation absorb excess floodwaters and/or capture excess nutrients before they enter the waterway, and the root systems can also help stabilize eroding stream banks. A rain garden is a small garden of flood-tolerant native plants arranged in a shallow basin, which can provide bioretention for excess rainwater runoff as well as beautifying the area. A green roof is a roof partially or completely covered with live plants and soil, which can provide insulation for a building, reducing roof surface temperatures in summertime and holding heat in during the winter. Living shorelines are shorelines stabilized with native plants and natural materials, such as oyster shells or coir logs (made of coconut fiber), to help reduce erosion, provide natural habitat, and protect the area from sea level rise.

Example objectives under this category include:

- Creating a green infrastructure incentive program to promote rain gardens and riparian buffers among landowners
- Constructing green roofs on new municipality-owned buildings
- Implementing living shorelines where applicable within the town or county boundary
- Installing rain gardens and vegetated swales alongside public parking lots to manage stormwater runoff

⁷ Delaware Department of Natural Resources and Environmental Control. 2016. Green Infrastructure Primer. Accessed 1 September 2022 at https://documents.dnrec.delaware.gov/GI/Documents/Green%20Infrastructure/Green_Infra_Primer2016_FINAL%20web%20version.pdf

- Identifying land areas that are feasible to allow to transition into wetlands

Potential resources:

- DNREC's Green Infrastructure Primer, which includes a list of resources, can be accessed at <https://dnrec.alpha.delaware.gov/climate-coastal-energy/sustainable-communities/green-infrastructure/>.
- Delaware Complete Communities offers a "toolbox" of information that can be accessed at <https://www.completecommunitiesde.org/planning/sustainable/green-infrastructure/>.

PUBLIC HEALTH AND SAFETY

The City of Wilmington's plan, Resilient Wilmington⁸, provides a comprehensive overview of the relationship between public health and sustainability on page 32. Climate change will continue to impact public health and safety by increasing heat, negatively impacting air quality, and increasing the risk of disease.

Many of the sustainability categories outlined here have some relationship to public health and safety, but some local governments may find it helpful to explicitly delineate the relationship between sustainability and community safety in their plans.

Example objectives under this category include:

- Expanding tree cover to counter the urban heat island effect
- Creating cooling centers (air-conditioned public spaces) for high heat days
- Providing resources to local health providers on changes in mosquito and tick season
- Supporting community safety efforts such as checking in on elderly neighbors during heat waves
- Creating a plan to adjust transit service in emergencies

Potential resources:

- Information about planning healthy communities from the Delaware Office of State Planning and Coordination can be found at <https://stateplanning.delaware.gov/lup/healthy-communities.shtml>.
- The Delaware Journal of Public Health released a special issue on climate and health, which can be found here: https://issuu.com/dam-dpha/docs/djph_october2017/26

⁸ City of Wilmington. 2020. Resilient Wilmington: Preparing today for tomorrow's climate risks. Accessed 18 Aug 2022 at <https://www.wilmingtonde.gov/home/showpublisheddocument/10643/637846654834170000>

FOOD AND WATER SECURITY

Food and water are basic human needs. Without reliable access to nutritious food and clean water, communities cannot thrive. Developing sustainable food systems can create many benefits, such as keeping excess food waste out of landfills, increasing opportunities for local agribusinesses, and reducing “food deserts” that lack access to fresh produce. Supporting community gardens can provide residents with fresh, delicious produce and vibrant public spaces. The City of Annapolis, MD includes urban chicken-keeping as part of their Sustainable Annapolis initiative, as a means for residents to turn vegetable scraps and kitchen waste into fresh eggs⁹. Some groundwater water sources in Delaware may become contaminated with salt water due to saltwater intrusion as sea levels rise. This has ramifications for drinking water as well as for agriculture. While this problem is most prevalent along the coast, saltwater can reach groundwater as far inland as Route 1, and will continue moving inland as sea levels rise¹⁰.



Community gardens, like the Lewes Community Garden, provide a space for residents to tend to a garden plot and grow food.

Example objectives under this category include:

- Assessing local access to fresh produce
- Supporting urban agriculture and community garden projects
- Establishing a farmer’s market
- Protecting drinking water facilities from saltwater infiltration
- Expanding access to public drinking fountains and bottle-fillers

⁹ City of Annapolis. n.d. Keeping Chickens. Accessed 1 September 2022 at <https://www.annapolis.gov/404/Keeping-Chickens>

¹⁰ Bataille, A., A. Rogerson, R. Scarborough, K. St. Laurent, S. Strohmeier. n.d. Delaware Department of Natural Resources and Environmental Control. Salt in Our Water — Saltwater Intrusion and Inundation in Delaware. Accessed 5 Dec 2022 at <https://dnrec.alpha.delaware.gov/outdoor-delaware/salt-in-our-water/>

Potential resources:

- Information about saltwater intrusion in Delaware can be found at <https://dnrec.alpha.delaware.gov/outdoor-delaware/salt-in-our-water/>.
- Information about protecting wells from saltwater intrusion can be found at <https://dnrec.alpha.delaware.gov/protect-your-well/>.
- Information on how to find local farmer's markets can be found at <https://agriculture.delaware.gov/communications-marketing/farmers-markets-guide/>.

WASTE REDUCTION

Waste reduction includes making improvements to the upstream, midstream, and downstream components of the waste stream. Fenwick Island's Sustainable Community Plan (page 60)¹¹ provides a comprehensive overview of these components. To summarize, the upstream refers to resource extraction and production needed to make a product. The midstream refers to the product's longevity and ability to be reused. The downstream includes all resource recovery, such as recycling and composting.

Working towards waste reduction can have a variety of co-benefits. Addressing improperly disposed waste can reduce the potential threats to human health that waste can pose, such as those from littered glass or burned tires, protect animals that would otherwise be at harm, increase property values, positively affect tourism, and increase a community's quality of life.

Example objectives under this category include:

- Promoting recycling by making recycling convenient and ensuring that commercial and municipal establishments comply with recycling requirements
- Implementing a municipal composting program
- Promoting and funding programs to collect hazardous household waste, electronic waste, tires, and other materials that are difficult to responsibly discard
- Addressing littering and illegal dumping
- Leading by example by considering the amount of packaging and waste from the procurement of goods for the municipality

Potential resources:

- Information about DNREC's Delaware Recycles program can be found at <https://dnrec.alpha.delaware.gov/waste-hazardous/recycling/>.

¹¹ Town of Fenwick Island. 2019. Community Sustainability Plan. Accessed 18 Aug 2022 at <https://fenwickisland.delaware.gov/files/2019/12/Sustainable-Community-Plan-FINAL-September-2019.pdf>

- Delaware’s Recyclopeda provides information on how to correctly dispose of waste. It can be accessed at <https://recyclopeda.org/de/state>.

ENERGY EFFICIENCY

Energy efficiency and renewable energy (further described below) go hand-in-hand. In order to reduce greenhouse gas emissions, it is important to address both at once: transition to renewable energy to reduce carbon emissions on the supply side, while simultaneously adopting more energy-efficient buildings and appliances to reduce demand for energy.

Energy efficiency is “the use of less energy to perform the same task or produce the same result”¹². Energy efficiency is beneficial for both people and the environment: when homes are built to be energy efficient, not only does it reduce the impact on emissions, but it also lowers residents’ monthly energy bills. Weatherization is the process of protecting a building’s interior from outside elements like extreme heat, cold, or moisture. It can include actions like installing new insulation, sealing cracks and gaps where outside air comes in, replacing old drafty doors and windows, and more. Properly weatherized homes require less energy for heating and cooling, even in the hottest and coldest months.

Local governments can support energy efficiency by understanding, implementing, and properly enforcing state energy codes, ensuring that new construction is built to code. Local governments can also lead by example, by ensuring that municipal buildings are as energy efficient as possible. The Leadership in Energy and Environmental Design (LEED) program, from the U.S. Green Building Council, is the most widely used green building rating standard in the world, and provides a framework for energy-efficient building design¹³. The program provides certification for green buildings, awarding ratings from “certified” all the way up to “platinum” for healthy, efficient, cost-saving green buildings.

Example objectives under this category include:

- Implementing and enforcing state energy codes, and taking advantage of state training opportunities on energy code compliance
- Leveraging funding available from state programs, Energize Delaware (SEU), and energy utilities to improve municipal building energy efficiency
- Educating residents and local businesses about what programs are available to them for weatherization and energy efficiency assistance
- Adopting energy efficiency requirements for new developments

¹² Office of Energy Efficiency & Renewable Energy. N.d. US Department of Energy. Energy efficiency. Accessed 18 Aug 2022 at <https://www.energy.gov/eere/energy-efficiency>

¹³ US Green Building Council. 2022. What is LEED certification? Accessed 30 May 2023 at <https://support.usgbc.org/hc/en-us/articles/4404406912403-What-is-LEED-certification>

- Implementing a campaign to encourage energy efficiency in the community
- Offering incentives to builders who incorporate LEED standards into their buildings

The Town of Frederica, for example, conducted a lighting audit of Town-owned buildings, the results of which can be found on page 9 of their sustainability plan¹⁴. Energize Delaware offers an Energy Assessment Program specifically to support energy audits for government and nonprofit buildings. More information can be found at <https://www.energizedelaware.org/nonresidential/public-nonprofit/energy-assessment-program/>.

Potential resources:

- Grants and other resources for energy efficiency provided by DNREC can be found at <https://dnrec.alpha.delaware.gov/climate-coastal-energy/efficiency/>.
- The Delaware State Energy Utility provides a variety of resources for local governments through its Energize Delaware program. More information can be found at <https://www.energizedelaware.org/nonresidential/public-nonprofit/>.
- The Delaware Municipal Electric Corporation offers an “Efficiency Smart” program to help participating communities use less energy through technical assistance and financial incentives. For more information, visit <https://www.demecinc.net/sustainability/programs/>.
- For information about the Energy Star certification program, visit <https://www.energystar.gov/?s=mega>.
- The Leadership in Energy and Environmental Design (LEED) program provides a rating system for building eco-friendliness, including water efficiency, sustainability, and indoor air quality. For more information on LEED, visit <https://www.usgbc.org/leed>.

RENEWABLE ENERGY

Renewable energy refers to energy produced from sources that do not run out, like the sun, wind, and geothermal energy. Transitioning from fossil fuels to renewable energy is a priority to

¹⁴ Town of Frederica. 2019. Sustainable Communities Planning Grant: Town of Frederica. Accessed 18 Aug 2022 at <https://frederica.delaware.gov/files/2020/12/SUSTAINABLE-COMMUNITIES-GRANT-FREDERICA.pdf>



Wind turbines provide a source of clean energy and help to advance carbon emission reduction goals.

reduce greenhouse gas emissions. It is also an important component of strategies in other sectors, like clean transportation and converting natural-gas-powered systems to electric.

While the state of Delaware has set goals for renewable energy deployment through its Renewable Energy Portfolio Standards, communities can also play a role. Municipalities can lead by example by installing solar panels on municipal buildings and properties, which can also help offset energy costs. Funding opportunities may be available through your electric utility, so contact your provider to learn more information about programs available within your town or county. Local communities can build resilience by encouraging the development of community solar programs, which allow a whole community to jointly support a solar project, rather than individual residential solar installations. Check with county zoning ordinances to determine where solar projects are permitted. You can also use the sustainability

plan to help local communities discover opportunities for state funding assistance, such as the Green Energy Program and the Low- to Moderate-Income (LMI) Solar Pilot Program.

Example objectives under this category include:

- Installing renewable energy systems in municipality-owned buildings
- Incentivizing renewable energy in new developments
- Implementing a campaign to encourage renewable energy adoption in the community
- Lead by example by setting targets to purchase municipality electricity from renewable sources
- Working with municipal-owned electric distribution utilities to increase integration of renewables into the electric supply

Potential resources:

- For information about DNREC's renewable energy programs and incentives, visit <https://dnrec.alpha.delaware.gov/climate-coastal-energy/renewable/>.
- Information on DNREC's LMI Solar Pilot Program can be found at <https://dnrec.alpha.delaware.gov/climate-coastal-energy/renewable/lmi-solar-pilot-program/>.

- Energize Delaware has a variety of residential and nonresidential solar programs that may help to provide solar to residents, businesses, and other organizations. For more information, visit <https://www.energizedelaware.org/>.
- For information on renewable energy generation, visit Delaware Municipal Electric Corporation website at <https://www.demecinc.net/generation/>.
- For information on community solar, visit <https://solardelaware.org/im-interested-in/community-solar/>

WATER CONSERVATION

Water conservation includes policies and action to sustainably manage freshwater and meet current and future water needs. As explained in the Sustainable Newark plan (page 36)¹⁵, the City of Newark has worked towards conserving water by installing water meters that increase accuracy of water usage and provide leak detection. Using an online portal, residents can set thresholds on their water usage and receive a notification when they've met that threshold, which is an important tool in responding to leaks. Additionally, the City of Newark has enacted "conservation pricing" on water, in which a customer pays a higher unit rate for water after meeting a usage threshold. Under Goal 4.1 of the plan (page 37), the City plans to reevaluate this rate structure to ensure that system costs are allocated equitably.

Example objectives under this category include:

- Installing water meters that increase accuracy of water usage and provide leak detection
- Providing low-flow fixtures to people with limited means
- Monitoring and tracking City water usage
- Implementing a fats, oils, and grease reduction program

Potential resources:

- Information about the Delaware section of the American Water Resources Association can be found at <http://www.deawra.org/>. The Delaware Rural Water Association can be found at <https://drwa.org/>.
- DNREC's Division of Water offers water use recommendations for when drought watches, warnings, and emergencies are declared in Delaware. For more information, visit <https://dnrec.alpha.delaware.gov/water/supply/water-conservation/>.

¹⁵ City of Newark. 2019. Sustainable Newark. Accessed 18 Aug 2022 at <https://newarkde.gov/1067/Newark-Community-Sustainability-Plan>

PLANNING AND LAND USE

Planning and land use considers the current land uses of the city, town, or county, and future land use changes that are expected. This category is broad and includes aspects of many of the categories above. For example, planning can be a helpful tool in addressing flooding and sea level rise. By discouraging (or disallowing) development in floodplains or areas expected to be impacted by sea level rise, future impacts from flooding can be reduced or avoided.

There are a variety of planning and land use tools that promote sustainability. Infill and redevelopment in areas that are targeted for growth and have existing infrastructure can result in a more efficient use of land and public services. Discouraging redevelopment and infill in the floodplain and encouraging more open space and wider wetland buffers can result in reduction of damage during flood events. Mixed-use development, in which two or more uses are blended into the same pedestrian-friendly area, allows people to live, work, run errands, and play in the same place. These developments are more walkable, which can cut traffic and the harmful emissions that come from it, and attract out-of-town visitors to the area to shop and relax.

Example objectives under this category include:

- Prioritizing efficient land use
- Encouraging infill and redevelopment where appropriate
- Identifying and addressing regulatory barriers to mixed-use development
- Creating “complete streets” that cater to travelers of all ages and abilities
- Shifting new development away from areas within the floodplain or expected to be inundated by sea level rise
- Coordinating with state and local agencies to link the area to multi-modal transportation systems

Potential resources:

- Delaware Complete Communities, from the University of Delaware, offers a wide variety of planning and community design tools, which can be accessed at <https://www.completecommunitiesde.org/>.
- The Delaware Office of State Planning Coordination provides a wide range of planning assistance for local governments. For more information, visit <https://stateplanning.delaware.gov/lup/planning-assistance.shtml>.
- Delaware’s Flood Planning Tool can be accessed at <https://floodplanning.dnrec.delaware.gov/>.

WETLANDS AND RIPARIAN BUFFERS

Wetlands cover about 25% of Delaware, about 80% of which are privately owned, and are a critical part of our natural environment. They reduce the impacts of flooding and shoreline erosion, absorb pollutants, and improve water quality. Wetlands provide habitat for animals and plants and many contain a wide diversity of life, supporting species that are found nowhere else. They can generate income for Delawareans by providing sellable goods and jobs and by bringing tourism to our state. During Hurricane Sandy, coastal wetland areas lowered storm surge from 9 feet to 5 feet by absorbing wave energy¹⁶.

Vegetated wetland buffers are protected areas of land adjacent to wetlands that are naturally vegetated or planted with native plants. These buffers help improve water quality by reducing sediment and pollutants loads. They also provide valuable flood protection and habitat and can help prevent encroachment of human activities into ecologically sensitive areas. A minimum 100-foot vegetated buffer around all wetlands and waterways maximizes the wetland protection benefits of wetland buffers. Depending on certain factors like slope and frequency of flooding events, wider buffers may be warranted.

Example objectives under this category include:

- Establishing wetland buffer ordinances requiring a minimum 100-foot vegetated buffer around all wetlands and waterways
- Creating a wetland awareness program to educate residents about the importance of wetland protection
- Incorporating wetland conservation into comprehensive and master planning programs
- Adopting good stewardship practices for wetlands on publicly owned lands
- Encouraging wetland restoration of degraded habitats

Potential resources:

- The DNREC Wetlands and Subaqueous Lands Sections provides information on wetland regulation in Delaware, which can be accessed at <https://dnrec.alpha.delaware.gov/water/wetlands-subaqueous/>.
- The Delaware Wetlands Toolbox can be accessed at <https://dnrec.maps.arcgis.com/apps/Cascade/index.html?appid=c7c3d922dd8c4a62a589fadaca859c18>.

¹⁶ Delaware Department of Natural Resources and Environmental Control. 2021. Delaware Wetlands Fact Sheet. Accessed 6 September 2022 at <https://documents.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware-Wetlands-Fact-Sheet.pdf>

TREES, TREE CANOPY, AND FORESTS

Trees filter water for improved water quality, provide habitat for wildlife, absorb nutrients, absorb stormwater runoff, provide shade, and store carbon. Tree canopy in communities is important as trees also improve air quality, lower heating and cooling costs, improve property values, provide scenic beauty, and can even improve social ties within a community¹⁷. One study even found an association between a 10% increase in tree canopy and a 12% decrease in crime¹⁸.



Tree canopy provides much-needed shade that can significantly cool surface temperatures on hot days.

Example objectives under this category include:

- Enacting tree and forest protection ordinances
- Determining the community's current tree canopy cover and setting a goal to increase cover. For example, under Goal 4.3 of the Sustainable Newark plan (page 38)¹⁹, the City of Newark has created the goal of expanding its tree canopy to 34% by 2025 and 36% by 2030.
- Becoming a Tree City USA through the Arbor Day Foundation (<https://www.arborday.org/programs/treecityUSA/index.cfm>)

Potential resources:

- The Delaware Urban and Community Forestry Grant Program through the Delaware Forest Service offers annual grants for plantings in urban and community settings. More

¹⁷ Delaware Trees. 2022. Tree Canopy. Accessed 6 September 2022 at <https://delawaretrees.com/tree-canopy/>.

¹⁸ Troy, A., J. Grove, J. O-Neil-Dunne. 2012. The relationship between tree canopy and crime rates across an urban–rural gradient in the greater Baltimore region. *Landscape and Urban Planning* 106(3): 262-270. Accessed 6 September 2022 at <https://www.sciencedirect.com/science/article/abs/pii/S0169204612000977>

¹⁹ City of Newark. 2019. Sustainable Newark. Accessed 18 Aug 2022 at <https://newarkde.gov/1067/Newark-Community-Sustainability-Plan>

information is available at <https://agriculture.delaware.gov/forest-service/urban-and-community/>.

- The Delaware Forest Service has developed an online tool to help communities measure and increase their tree canopy cover. The tool can be found at <http://de.gov/treecanopy>.
- The Tree for Every Delawarean Initiative (TEDI) is a cooperative effort between DNREC's Division of Climate, Coastal and Energy and the Delaware Forest Service. More information about the program is available at <https://dnrec.alpha.delaware.gov/tedi/>.

URBAN AND SUBURBAN YARDSCAPES

More than 40 million acres of land in the United States are covered by turf lawn²⁰. Such large swaths of lawn pose a variety of environmental and ecological problems. Lawn maintenance, including the use of gas-powered leaf blowers and lawn mowers and the application of synthetic fertilizers, contributes to greenhouse gas emissions, nutrient runoff, and the release of toxic gases. Using a gas-powered lawn mower for one hour contributes as much emissions as 11 cars idling for the same amount of time²¹. Turf grass provides almost no habitat for pollinators and other wildlife. Pesticides used on lawns can actively harm pollinators as well as animals like birds that may eat pesticide-covered berries and seeds from the ground.



Lawn alternatives, like this expansive garden, can add beauty to a community and even become a local attraction.

There are a variety of alternatives to the traditional turf lawn that can significantly reduce environmental impacts. These can be divided into four categories: 1) Unmown turf grass that is left to grow freely, 2) Low-growing turf grasses that require little maintenance, 3) Native landscapes where turf grass is replaced with native plants, and 4) Yards where edible plants are

²⁰ Princeton Student Climate Initiative. 2020. Lawn maintenance and climate change. Accessed 6 September 2022 at <https://psci.princeton.edu/tips/2020/5/11/lawn-maintenance-and-climate-change>

²¹ Osborne, C. 2018. #NoMowDays and Other Ways to Trim Your Grass and Your Emissions. Utah Department of Environmental Quality. Accessed 6 September 2022 at <https://deq.utah.gov/communication/news/no-mow-days-trim-grass-emissions>

grown to replace a portion of the turf grass²². Options 2, 3, and 4 are some of the most popular aesthetically-pleasing alternatives to turf grass. Unfortunately, landowners that are interested in these alternatives often meet roadblocks. Municipal codes limiting the height of grass and vegetation are common and some municipalities even ban front-yard vegetable gardens²³.

Example objectives under this category include:

- Embracing “No Mow May” in your community by encouraging residents to refrain from mowing during the month of May
- Evaluating provisions in the code relating to yardscapes, lawns, gardens, and natural vegetation. Protect the rights of residents to have front-yard vegetable gardens and native plant yardscapes and meadows.



Native plants can attract beneficial pollinators, like this bee.

- Creating an incentive program such as a cash rebate to encourage landowners to enact natural landscaping. For example, see Montgomery County, Maryland’s RainScapes program at <https://www.montgomerycountymd.gov/water/rainscapes/>.
- Enacting restrictions on gas-powered leaf blowers and creating an incentive program to encourage residents to switch to electric alternatives
- Encouraging developers to maintain open space as planted meadows or forest

Potential resources:

- “Towards Sustainable Landscapes: Restoring the Right NOT to Mow” is a white paper from the Yale Environmental Protection Clinic providing information on how policy can limit or permit sustainable yardscapes. To view the paper, visit <https://www.nrdc.org/resources/toward-sustainable-landscapes-restoring-right-not-mow>.

²² Talbot, M. 2016. More Sustainable (and Beautiful) Alternatives to a Grass Lawn. Natural Resource Defense Council. Accessed 6 September 2022 at <https://www.nrdc.org/stories/more-sustainable-and-beautiful-alternatives-grass-lawn>.

²³ Denvir, A., M. Meehan, M. Pellegrino, L. Pratt. 2016. Toward Sustainable Landscapes: Restoring the right NOT to mow. Environmental Protection Clinic at Yale. Accessed 7 September 2022 at <https://www.nrdc.org/sites/default/files/sustainable-landscapes-20160506.pdf>

- The University of Delaware Cooperative Extension has published a factsheet on native plants for Delaware landscapes. This can be viewed at <https://www.udel.edu/academics/colleges/canr/cooperative-extension/factsheets/native-plants-for-delaware-landscapes/>.

EQUITABLE DEVELOPMENT AND ENVIRONMENTAL JUSTICE

Not all communities feel the impacts of climate change equally. Vulnerable populations (e.g., low-income, elderly, or disabled residents) may lack access to air conditioning, appropriate care for heat-exacerbated illnesses such as asthma or heart disease, or the means to evacuate in the event of coastal flooding or severe storms. This disproportionate impact of environmental impacts on vulnerable populations is referred to as “environmental justice.”

Sustainability plans that do not adequately address the needs of all residents can inadvertently reinforce existing structures of inequality. A successful sustainability plan will incorporate principles of equitable development to foster vibrant, healthy communities for all. Unlike equality, in which the same amount of assistance or funding would be provided regardless of existing needs or assets, equity considers historic injustice, income status, disability, and other markers of disadvantaged populations when providing assistance. For example, an equitable plan might prioritize funding to be spent in disadvantaged communities.

Example objectives under this category include:

- Reserving a certain percentage of funding for helping disadvantaged communities
- Targeting urban tree cover projects in high-density low-income “heat island” neighborhoods
- Expanding accessible public transportation options
- Providing plan materials in multiple languages
- Reaching out to under-served communities for input in planning and land use decisions

Potential resources:

- Environmental justice loans, grants, and other support is available from DNREC at <https://dnrec.alpha.delaware.gov/environmental-justice/>.
- The US EPA provides many helpful resources for equitable development, such as its *Strategies for Advancing Smart Growth, Environmental Justice, and Equitable Development* guide, which can be found at <https://www.epa.gov/smartgrowth/creating-equitable-healthy-and-sustainable-communities>. EJScreen, an environmental justice screening and mapping tool from the US EPA, can be accessed at <https://www.epa.gov/ejscreen>.
- The White House Council on Environmental Quality is developing a screening tool for identifying disadvantaged communities. The beta version of the tool can be accessed at <https://screeningtool.geoplatform.gov>.

- American Forests has developed a tool to determine how equitably trees are distributed throughout a city or town. More information can be found at <https://treeequityscore.org/>.

TAKING ACTION

GOALS, STRATEGIES, AND IMPLEMENTATION

Most sustainability plans break down each focus category into broad goals or objectives. For example, in the Resilient Wilmington plan (page 40)²⁴, a goal under the Transportation category is to “expand bike infrastructure to reduce carbon pollution”. The plan then identifies the steps that must be taken to meet this goal. For example, “Implement Wilmington’s Bike Share Program and expand outreach and education to encourage safe transportation alternatives”. The time frame (near-, mid-, or long-term) is identified as well as the level of funding needed, noted simply as “\$”, “\$\$”, or “\$\$\$”. A lead, such as the City Manager or Public Works Department, may be identified as well, in addition to the status of the action item if some actions begin before the finalization of the plan. This section is typically formatted as a table or bulleted outline.

When possible, goals should be SMART: specific, measurable, achievable, realistic, and timely. Attaching a specific and measurable target to goals will help ensure that plan implementation stays on track. For instance, the Sustainable Newark plan’s goal of increasing tree canopy to 34% by 2025 (page 10)²⁵ is specific, measurable, and includes a target year.

ACTION PLAN

An optional section is a final action plan, such as a three- or five-year plan. This pulls information from the goals and strategies to highlight the actions to prioritize over the next several years. A three-year action plan is included on page 37 of Milton’s Sustainability Plan²⁶. It describes the priorities for each calendar year following the adoption of the plan, and lists the specific action items to be taken each year.

²⁴ City of Wilmington. 2020. Resilient Wilmington: Preparing today for tomorrow’s climate risks. Accessed 18 Aug 2022 at <https://www.wilmingtonde.gov/home/showpublisheddocument/10643/637846654834170000>

²⁵ City of Newark. 2019. Sustainable Newark. Accessed 18 Aug 2022 at <https://newarkde.gov/1067/Newark-Community-Sustainability-Plan>

²⁶ Town of Milton. 2019. Sustainability Plan. Accessed 18 Aug 2022 at <https://milton.delaware.gov/files/2019/10/Sustainability-Plan.pdf>

COMMUNITY ACTION

Some sustainability plans include a community action section, detailing actions that individuals can take to further the goals and objectives in the sustainability plan. An example of this can be found on page 42 of the Resilient Wilmington plan²⁷. This page lists actions, grouped by category, for individuals to take. In other plans, this information may be contained in other sections, such as in the category sections or within goals, strategies, and implementation.

IMPLEMENTATION

While setting a goal is a vital step towards progress, it is only the first step in a long journey. In the process of writing the plan, it is important to think about implementation: who will be responsible for the goals set in the plan? Who has the appropriate authority to implement proposed changes, such as updated building codes or changes to the land use and zoning process? Assigning the responsibility of implementation to the right people is key to success. Identifying those key people early on and engaging them throughout the planning process will result in smoother implementation later.

The other component of implementation success is ongoing support: ensuring that the people or team responsible for implementation have the appropriate staffing capacity and institutional support to make action happen.

²⁷ City of Wilmington. 2020. Resilient Wilmington: Preparing today for tomorrow's climate risks. Accessed 18 Aug 2022 at <https://www.wilmingtonde.gov/home/showpublisheddocument/10643/637846654834170000>

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APPENDIX A – SAMPLE TABLE OF CONTENTS

- Introduction
 - Acknowledgements
 - Purpose of the plan
- Plan framework
 - Funding
 - Project approach
- Community outreach
- Background
 - History
 - Demographics
 - Location, land uses, and notable features
 - Town structure
 - Initiatives
 - Definitions
 - How will climate change impact our town?
 - Federal, state, and local regulations
- Sustainability categories
 - Clean transportation
 - Walkable and bikeable communities
 - Green infrastructure
 - Public health & safety
 - Food & water security
 - Waste reduction
 - Energy efficiency
 - Renewable energy
 - Water conservation
 - Planning and land use
 - Wetlands
 - Trees, tree canopy, & forests
 - Urban & suburban yardscapes
 - Environmental justice and equity
- Community action
- Areas of concern
- Goals, strategies, & implementation
- Three-year action plan