

SECTION EIGHT NATURAL & ENVIRONMENTAL RESOURCES



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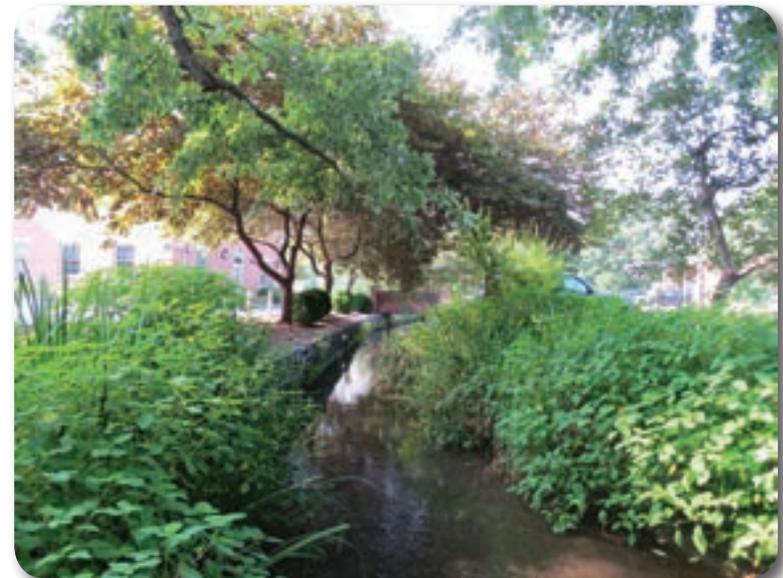


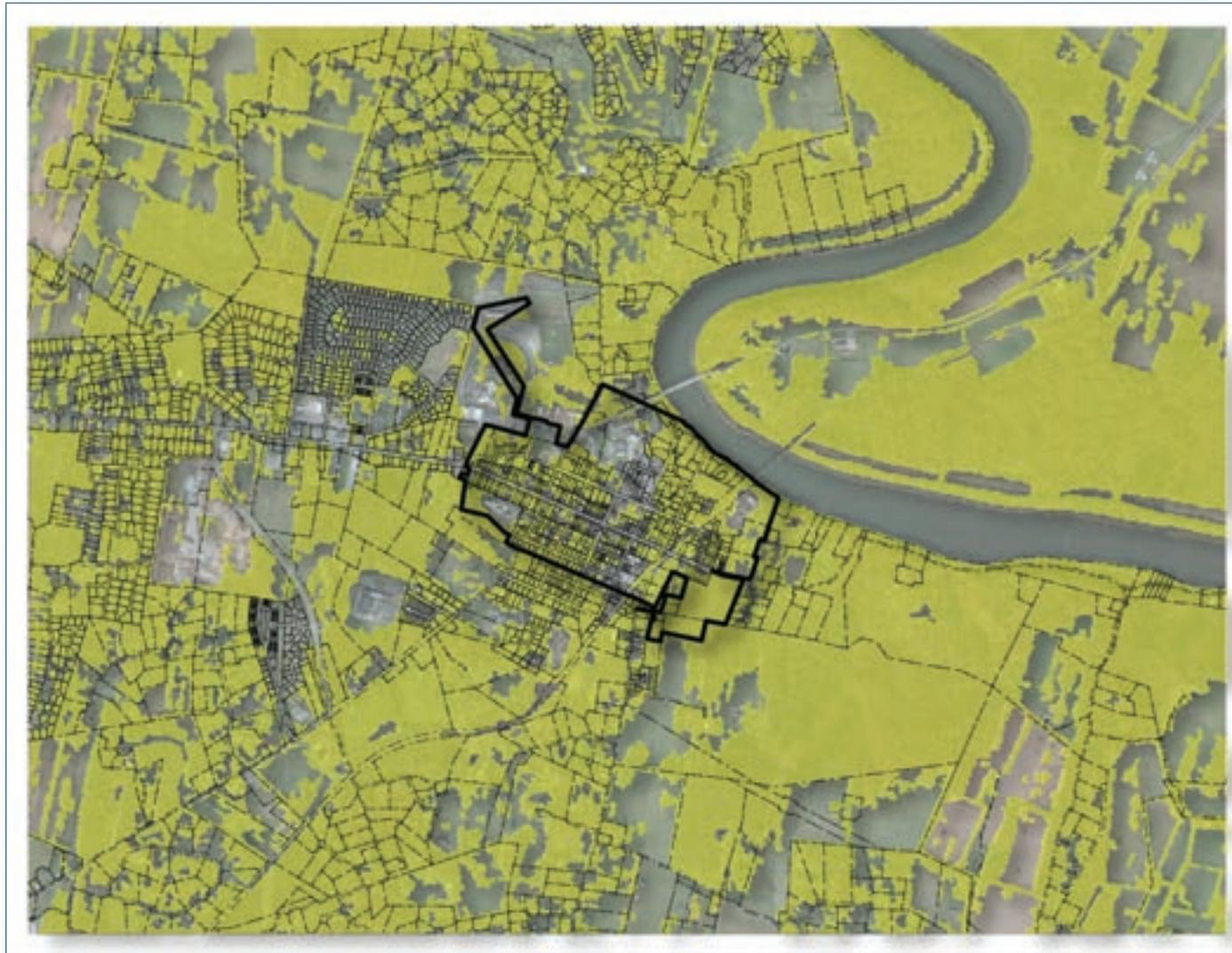
NATURAL AND ENVIRONMENTAL RESOURCES

The significant natural and environmental resources that are present in the greater Shepherdstown area are closely guarded by the community. Town residents embrace natural assets for their intrinsic values, contributions to quality of life, and ability to draw visitors to enjoy the region's natural beauty. The community understands that the forests, farm fields, waterways, and the flora and fauna that they support, are irreplaceable assets that must be protected and conserved.

From protecting farmland from development, to improving the quality of the water in Town Run and the Potomac, to embracing walking and riding bikes to improve air quality, the community has already taken major steps toward realizing a future in which there is balance between the town and the surrounding natural landscape. This long term vision of balance and sustainability is critical to the success of the town, and a dedication to this ideal will help the community distinguish itself in coming years as it competes for residents, businesses and jobs that also embrace environmental sustainability practices.

Moving forward, the town should take a holistic approach to evaluating its actions, whether in terms of development activity occurring in town or how it provides services, to ensure that it is moving along the path of sustainability and protecting the environment in everything that it does.

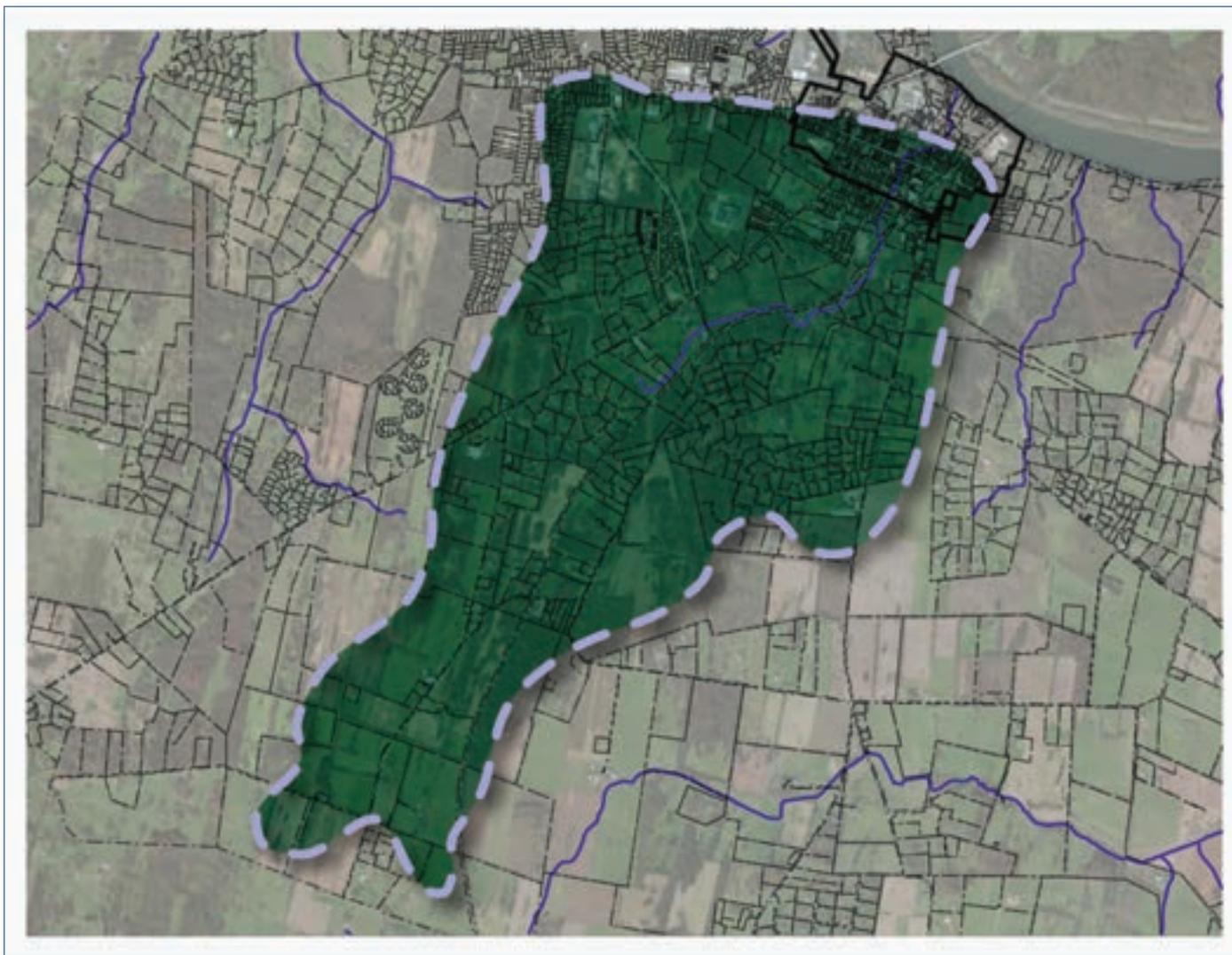




This map depicts the extent of the tree canopy in the greater Shepherdstown area. In general, the tree canopy in the urbanized portions of the area is more fractured, or in some cases nonexistent, while rural areas have a more dense tree canopy, with the exception of those areas in active use for agriculture.

 Tree Canopy

Tree Canopy Map



This map depicts the general extent of the Town Run watershed. The lower portions of the watershed, within and closer to Shepherdstown are more intensively developed, while the upper portion of the watershed is characterized by agricultural and low density rural residential development.

 Watershed Area

Town Run Watershed



This map depicts the location of permanent conservation easements in the greater Shepherdstown area.

 Conservation Easements

Conservation Easements



This map depicts soils that have been determined by the National Resource Conservation Service to have properties that make them exceptionally suitable for farming purposes

 Prime Farmland Soils

Prime Farmland



NER GOAL 1

The integrity and quality of land, water, air and other natural resources will be protected from negative impacts to preserve the overall environmental health of the community.

1.1 Incentivize Green Building Techniques

STRATEGY: Provide development incentives for projects that use LEED certified or similar low impact / energy efficient design, construction and development techniques.

JUSTIFICATION: Providing incentives for the use of “green” building techniques, such as reducing water and sewer impact fees, allowing higher density or intensity development, or similar incentives, can help a community reduce its environmental footprint. This is achieved through the construction techniques which seek to limit water and energy usage and by utilizing techniques that reduce stormwater runoff and preserve existing vegetation. Making these incentives available can also have the effect of attracting more developers and homebuilders to a community, thereby increasing development interest from

the “green” building sector of the overall development industry, which can in turn lead to a higher proportional share of new development adhering to these techniques.

1.2 Implement the Tree Canopy Plan

STRATEGY: Implement the recommendations of the Jefferson County Urban Tree Canopy Plan.

JUSTIFICATION: The Jefferson County Urban Tree Canopy Plan establishes a reasonably attainable goal for the preservation of trees in the corporate limits of Shepherdstown, while also promoting an increase in the percentage of the community covered by mature tree canopy. A healthy tree canopy provides a wide range of benefits within an urban environment,

including diffusing the effects of night lighting, removing carbon dioxide from the air, providing shade to cool pavement and other surfaces that tend to retain heat, and contributing to the aesthetic quality of the built environment.

1.3 Promote Alternative Forms of Transportation

STRATEGY: Encourage residents of Shepherdstown to use non-vehicular transportation whenever possible to reduce air quality impacts.

JUSTIFICATION: Although many of Shepherdstown's residents are actively engaged in walking and biking as a form of green transportation, an opportunity exists to encourage a much larger share of the population to utilize walking and biking as alternative means of transportation to the automobile. Reducing vehicular trips through the promotion of walking and biking transportation choices, can improve the health of the community, expand social interaction in public spaces, reduce air pollution and energy usage, as well as reducing parking demand where limited supply exists.

1.4 Promote Land Preservation Efforts

STRATEGY: Partner with local conservation organizations to promote the permanent protection of working farms, forests, wildlife habitat and other open spaces.

JUSTIFICATION: By working with local partners to preserve critical lands, the town can help to conserve these limited resources, thereby directing development away from rural and agricultural landscapes and toward areas that are more suited for development. Developing such partnerships can also support the creation of parks, greenways and other publically accesible open spaces as part of land conservation efforts.

1.5 Develop Electric Vehicle Infrastructure

STRATEGY: Explore opportunities to install electric vehicle charging stations adjacent to public on-street parking spaces or in town owned parking lots. Encourage private property owners to do the same.



JUSTIFICATION: Providing electric vehicle charging stations in publically accessible locations in town will help to demonstrate the community's commitment to supporting alternative fueled vehicle use, and make the town a known destination for tourists visiting the local area who drive these vehicles. Stations could charge a small premium over the basic cost of electricity to help generate additional revenue for the town, and potentially allow for free parking in an otherwise metered space while in use. If no suitable locations are available adjacent to on-street spaces, then the town could explore options for using existing off-street public parking areas or perhaps partner with Shepherd University to install stations in their parking lots that are located conveniently to downtown. A partnership to provide this service could serve the needs of both the town and university, particularly if both entities invested in electric vehicles, thereby also providing overnight charging facilities for their vehicles while a number of the spaces were made available to the public during the day.

1.6

Divert Food Waste from Landfills

STRATEGY: Develop a program for the collection of food waste, from both residential and commercial sources, for composting so that the waste is diverted from the general solid waste stream.

JUSTIFICATION: Food waste, which is a compostable material, has become a major target of waste reduction efforts in many communities in recent years, with a focus on both commercial and residential sources of waste. This material, which generally has a high water content, can significantly add to a community's waste disposal costs due to the weight and bulk of the material. As a compostable material, its diversion from the municipal solid waste stream into a composting landfill can actually save money and provide a community benefit over time. A voluntary program aimed at commercial and residential waste generators can help to build interest in a program and lead to an eventual mandatory diversion of this type of waste from local landfills. With a large food waste generator in the community (Shepherd University) the necessary economies of scale may be in place to make this a cost-effective alternative for the community.

1.7

Oppose Environmentally Damaging Industrial Development

STRATEGY: Oppose the construction or development of any heavy industrial or intense resource extraction ventures in the area, and ensure that the Town's land use ordinances do not allow uses which negatively impact environmental resources.



JUSTIFICATION: Maintaining the environmental quality found in the local area is critical to preserving the character of the greater Shepherdstown area. Large scale industries, particularly those that generate off-site impacts, such as air pollution, heavy truck traffic, or discharge industrial wastewater, would have both a negative environmental effect and a negative impact of the character of the community. Working to ensure that such industries are properly sited, in locations closer to larger urban areas and in closer proximity to major highway routes by opposing zoning changes or incentives that would facilitate their development in the local area is critical to maintaining both the character of the community and its high quality of life.

1.8 Develop Pervious Pavement Requirements

STRATEGY: Explore options for requiring the use of pervious pavement or similar materials in off-street parking areas for both residential and nonresidential uses to reduce stormwater runoff.

JUSTIFICATION: The use of pervious pavement, which allows for stormwater infiltration while also providing a suitable parking surface, can help to reduce stormwater runoff and improve

water quality outcomes. While not necessarily suitable for large scale use on a parking area of a significant size, pervious pavement installations in areas close to sensitive environmental features, along the edges of parking lots, or on small lots, or around landscaping areas can provide an effective method of mitigating stormwater impacts. Most typically, pervious pavement is required by ordinances for installation in parking lots exceeding a certain size threshold, or for spaces exceeding a percentage of the minimum parking requirement. And while typically applied only to nonresidential development, these materials and techniques are equally effective for individual residential driveways and parking pads where it is compatible with Historic District design guidelines.

1.9 Develop a Watershed Management Plan for Town Run

STRATEGY: Develop and implement a plan, in cooperation with Jefferson County, for the management of the Town Run Watershed that is focused on both restoring water quality and ensuring that new development does not negatively impact the health of the stream.

JUSTIFICATION: With its prominent course through town, Town



Run is a significant feature in both the urban and rural landscape, and since it drains directly into the Potomac River, maintaining the quality of the water in the stream is important to ensuring the health of the local stretch of the river. Managing the watershed through a plan jointly developed and adopted by both the county and the town would help to ensure that local and regional water quality and other environmental goals are met. Such a plan should address allowed development density, impervious surface limitations, preferred stormwater management techniques, land conservation and set goals for total maximum daily loads (TMDL) for pollutants and suspended solids to ensure that all aspects of watershed management are covered.

amount of off-site runoff and can reduce the amount of potable water from the domestic water supply that is used for outdoor purposes.

1.10 Promote Rainwater Harvesting for Irrigation

STRATEGY: Develop and promote a rainwater harvesting program for residential and commercial properties in town for use in landscape irrigation.

JUSTIFICATION: Capturing rainwater from the roofs of residential and commercial structures can provide a significant source of water for irrigating lawns and landscaping. Capturing and storing stormwater on site also has the added benefits of reducing the

NER GOAL 2

Public services will be provided to the community in a manner that has the lowest possible environmental impact while remaining cost effective for residents.

2.1 Install Energy Efficient Street Lighting

STRATEGY: Explore the feasibility of utilizing high efficiency LED technology for street lighting to reduce energy consumption.

JUSTIFICATION: Recent improvements in LED street lighting technology allow communities to reduce energy consumption, lengthen the lifecycle of bulbs and provide night lighting that enhances safety by illuminating public spaces with light that is more natural than legacy sodium vapor, metal halide or mercury lighting fixtures. While the installation of modern LED fixtures does come with an expense, the improvements in energy efficiency and longer replacement cycles can provide significant long term financial benefits to a community. The low electricity requirements of LED fixtures also allow for the installation of

miniature solar collectors or wind generators on the mounting poles to power the fixtures, reducing the otherwise absolute need for hardwiring of the fixtures.

2.2 Utilize Alternative Fuel Vehicles for Town Operations

STRATEGY: Explore the feasibility of replacing all or a portion of the Town's conventionally powered vehicle fleet with low impact alternative fuel vehicles.

JUSTIFICATION: Vehicles used in the provision of municipal services often consume a great deal more energy than personal passenger vehicles due to long periods of idling and frequent stops and starts as vehicles travel around town. While not all vehicles would necessarily be candidates for replacement with



alternative fuel vehicles, such as heavy duty work trucks and similar specialized vehicles, there are opportunities to utilize more energy efficient and lower polluting vehicles in the provision of municipal services. Developing a small fleet of electric vehicles could also help to support the creation of infrastructure for public electric vehicle charging stations.

2.3 Conduct and Environmental Audit of Town Services

STRATEGY: Conduct an environmental audit of all town services to identify ways in which the town can reduce its environmental footprint.

JUSTIFICATION: Developing an understanding of the environmental impact of how municipal services are provided will help the town identify areas in which it can improve its environmental stewardship and reduce potentially negative impacts on the community. Frequently, inefficiencies identified in this type of audit can lead to the development of cost saving alternatives as waste and excessive consumption are eliminated in favor of more efficient methods of service delivery or less impactful operational practices.

2.4 Reduce Hard Copy Mailings for Town Business

STRATEGY: Explore options for reducing or eliminating hard copy mailings by the town to reduce paper consumption, such as providing online payment options.

JUSTIFICATION: Providing options for paperless transactions, and eventually eliminating all but those legally required hard copy mailings by the town will, over time, lead to significant cost savings and reduce the town's environmental impact. As a greater share of the town's residents become more comfortable with doing business by email or other internet based options, the need for mailing hard copies of bills, notices and other documents will decrease. This, in turn can also benefit the town by allowing it to communicate larger volumes of information to residents and utility customers since there is little or no additional cost involved in sending additional information via electronic means, while printing and mailing or otherwise distributing hard copies is limited by budgets, envelope capacity and weight limits.

2.5 Adopt Local Sourcing Policies

STRATEGY: Adopt policies encouraging town employees to source supplies from manufacturers and distributors that are located in closer proximity to Shepherdstown to reduce delivery related energy consumption.

JUSTIFICATION: While the volume of goods consumed by town operations is relatively small when compared to even marginally larger municipal governments, each transaction that requires delivering or picking up an item from a distance farther than absolutely necessary does add to the town's environmental impact. Sourcing goods locally, where possible and financially feasible, will help the community to reduce its overall carbon footprint and help to support local businesses.

2.6 Develop a Reclaimed Water Distribution System

STRATEGY: Explore the feasibility of developing a reclaimed water system to distribute treated "gray water" for irrigation uses by large consumers such as farms and golf courses.

JUSTIFICATION: Providing reclaimed water for use by large water consumers, such as golf courses and large agricultural producers, could help the town generate additional revenue from its water and wastewater utilities, while also reducing the volume of its discharges into the Potomac River. Reclaimed water, which is the result of treatment in a municipal wastewater facility, is generally approved for use for these purposes without further treatment. This can provide a reliable water source for large nonpotable water users, particularly during times of drought, thereby helping to guarantee the ongoing viability of their operations.

2.7 Develop and Implement a Community Energy Reduction Program

STRATEGY: Develop a community-wide energy usage reduction program in cooperation with the electric service provider to establish energy conservation goals and provide the public with a method of monitoring progress on reaching those goals.

JUSTIFICATION: Many communities have established goals to reduce energy consumption, but monitoring progress toward those goals can be difficult to measure. Emerging technology is allowing communities to provide real time monitoring of community-wide energy usage, thereby helping to demonstrate



the ongoing rates of consumption, or reductions that have occurred. While this would require the cooperation of the local electric utility to achieve, a community-wide effort could help to provide another environmental focus for the community as it works toward a goal of reducing its environmental impacts. Such a program could begin with a small set of users, such as municipal buildings and the university, which could have targets set for energy reduction. Publicly viewable monitors displaying energy consumption in participating buildings can help to demonstrate the efficiency gains that are being made and let managers monitor energy consumption levels in real time. Along with monitoring progress, the community could establish a program to improve energy efficiency, with components such as providing weatherization assistance to homeowners, conducting energy audits of commercial buildings and distributing free or reduced cost energy efficient light bulbs to help encourage lower energy consumption. Combined, an achievable goal, monitoring and assistance program can help the community realize significant reductions in energy usage while also giving the town a measurable goal to work towards as a community.

NER GOAL 3

The community will have access to clean, efficient and sustainable energy resources.

3.1 Expand Renewable Energy Options

STRATEGY: Explore opportunities to partner with private entities to provide sustainable and renewable electricity to residential and business customers in the community.

JUSTIFICATION: Identifying locations for larger scale renewable energy generation opportunities in the community and partnering with or advocating for the developers of such projects will help to bring a more diverse and sustainable energy supply to the community. While typically more expensive than fossil fuel or nuclear based energy resources, the use of renewable energy resources, particularly when generated locally, can play a significant role in reducing the immediate and identifiable energy related impacts of a community. When coupled with strong links to the legacy power distribution system, locally available

renewable energy resources also help to provide a more reliable and resilient source of electricity generation, particularly in time of energy shortages or natural disasters that can impact larger regional power transmission networks.

3.2 Generate Renewable Energy on Town Property

STRATEGY: Prepare a feasibility analysis for the installation of renewable energy collection facilities on town-owned property.

JUSTIFICATION: While the space available for generating energy from renewable sources on town owned property is not extensive, the installation of small scale generation facilities where space permits would help the town to lead by example and provide encouragement for private property owners to generate at least some of their electricity needs on-site. In



addition to reducing the external energy needs of town buildings and other operations, the installation of these devices could also help the town generate revenue (via reductions in its energy bills) through net metering, whereby the local electric utility would purchase excess power generated at town owned sites when production exceeded consumption levels.

3.3

Promote Small Scale Renewable Energy Generation

STRATEGY: Develop regulations for inclusion in the Town’s Zoning Ordinance to expressly permit the installation of small scale renewable energy facilities on private property, while ensuring that such installations do not negatively impact the character of the town or surrounding properties (similar to the Historic District Guidelines).

JUSTIFICATION: Distributing the generation of the town’s electricity needs throughout the community will allow for a more stable and environmentally friendly energy supply. Ensuring that local ordinances address both the need to allow such facilities on private property, as well as the potential impacts of their installation, will help the town as a whole develop small scale renewable energy resources in a manner that does not introduce a negative impact on neighborhoods. The proliferation of small

scale renewable energy generators will also allow the town to become more resilient in the event of outages in the local power distribution network due to natural disasters or by other means. This in turn will allow for quicker recoveries from such situations and reduce the need for outside aid during emergencies.

3.4

Promote Solar Energy Generation Facilities on Nonresidential Buildings

STRATEGY: Encourage the installation of solar collection facilities on the rooftops of larger nonresidential buildings when such installations will not negatively impact the character of the community.

JUSTIFICATION: The roofs of larger nonresidential buildings, particularly those with “flat” roof forms, provide ideal opportunities for the installation of solar power generation facilities. Given the potential size of such installations, they have the ability to not only supply power for use onsite, but also to help monetize the unused rooftop space through net metering of excess energy that is generated on the site. If properly mounted and screened, these types of installations can be highly compatible with the character of the community while also helping to reduce the town’s overall environmental impact.

3.5 Develop a Waste to Energy Facility

STRATEGY: Explore the feasibility of utilizing biosolids produced at the town’s wastewater treatment plant to generate electricity to assist in powering the facility.

JUSTIFICATION: The organic matter that results from the treatment of municipal wastewater is generally viewed as a burden that must be dealt with through expensive disposal methods, such as land application or transportation to a landfill. Opportunities, do exist, however, to monetize this matter, known as biosolids (or more commonly as “sludge”), by converting it into heat energy that can be used to generate electricity in a waste to energy power generator. While the locally produced amount of biosolids may not be sufficient to economically operate a generator on a full time basis, the location of the town’s wastewater treatment plant adjacent to the rail line, could provide an opportunity to construct a siding that could facilitate the importation of biosolids by rail from external sources. With a sufficient supply of organic matter for use in power generation, a generator on-site could simultaneously generate electricity from renewable resources, while also eliminating the need to dispose of the solid waste that results from the wastewater treatment

process, leaving only small amounts of ash that can be more easily disposed of in landfills. While air quality impacts would definitely be a concern associated with such a facility, their design, which typically utilizes very high temperature processes and includes extensive modern pollution control mechanisms, can make these small scale energy generators very compatible with both the environment and nearby developed land uses.



NER GOAL 4

Significant amounts of open space on the rural fringes of the community will be permanently protected from development and ultimately create a larger interconnected system of preserved land.

4.1 Develop and Implement a Land Conservation Plan

STRATEGY: Work cooperatively with the Land Trust for the Eastern Panhandle, the Conservation Fund and the Jefferson County Farmland Protection Board to develop and implement a local land resources conservation plan that identifies priority areas around Shepherdstown for permanent protection, with a focus on working farms and forests, land with prime agricultural soils and undeveloped properties in important watershed areas.

JUSTIFICATION: By working with local partners to preserve critical lands, the town can help to conserve these limited resources, thereby directing development away from rural and agricultural landscapes and toward areas that are more suited for development. Developing such partnerships can also support the creation of parks, greenways and other publically

accessible open spaces as part of land conservation efforts. Working to preserve working farms will also help to strengthen the local food economy and reduce pressure to convert these critical resources into developed land uses, thereby helping to limit sprawl and preserve the agricultural heritage of the region.

4.2 Preserve Historically Significant Landscapes

STRATEGY: Work with local history groups to develop a plan for the acquisition of land for the preservation of the area where the Battle of Shepherdstown occurred as permanently protected park land. If fee simple acquisition is not feasible, opportunities for acquiring conservation easements or scenic easements should be explored.

JUSTIFICATION: The cultural heritage of the region is directly tied to the rural landscapes that surround the community, particularly with respect to the lands upon which the Battle of Shepherdstown was fought. Conserving this area in a state that is consistent with the era of its historical significance will help to reinforce the importance of the events that took place in the area during the Civil War, while also preserving the scenic landscape that is found in the rural areas around Shepherdstown.

4.3

Promote Farmland Preservation

STRATEGY: Work with local agricultural producers to acquire the donation of farmland conservation easements on working farms to guarantee their continued use for this vital purpose.

JUSTIFICATION: Preserving working farms is critical to the local economy, the health of the environment and limiting suburban sprawl. Working with groups whose mission it is to protect these working lands from develop will help to support the local food economy, particularly when tied to the development of local outlets to make produce from area farms available in the community. Providing incentives for the preservation of working lands in their current state also helps to prevent suburban

sprawl by removing financial barriers to maintaining the land in its current state and enhances environmental sustainability by limiting the creation of new impervious surfaces or converting land from undeveloped to developed land uses.

4.4

Develop a Greenway Plan

STRATEGY: Develop a greenway corridor plan in coordination with Jefferson County and use the Town's development regulations to require the dedication of designated greenway corridors in conjunction with new development. Where development has already occurred along a corridor, work to secure easements or donations of land for the preservation of greenway corridors.

JUSTIFICATION: Like other bicycle and pedestrian facilities, greenway trails can provide important regional connections. Collaborating with Jefferson County to identify and develop these corridors will ensure a greater degree of connectivity throughout the area and ensure that new development outside of the corporate limits can be connected to a larger regional greenway network.



4.5

Protect Landscapes Along the Potomac River

STRATEGY: Develop a plan, in coordination with Jefferson County, Washington County, MD and local conservation organizations to protect the scenic beauty and environmental quality of the lands along the Potomac River through the acquisition of scenic easements and conservation easements on lands that, if developed, could significantly alter the landscape of the river through the area.

JUSTIFICATION: The scenic beauty of the landscape along the Potomac River is part of the historic, cultural and natural heritage of the town and the region as a whole. Preserving the river landscape from development or other potentially negative visual influences will help the region retain its identity as a bucolic rural region of the Potomac River basin. Coordinating these efforts, whether related to acquiring conservation easements or introducing development restrictions, should be a regional effort given the scale and extent of the geography involved. Therefore, partnering with Jefferson County and Washington County will be critical to ensuring the success of this strategy.

4.6

Promote the Use of Conservation Subdivision Design Techniques

STRATEGY: Encourage the use of conservation subdivision techniques to protect open space in rural areas where residential development is occurring.

JUSTIFICATION: In contrast to conventional residential subdivision design techniques, conservation subdivision design techniques integrate residential development into the existing natural landscape in which they are situated rather than attempting to alter it. This type of subdivision design technique is particularly suited to allowing for the preservation of significant natural features on a site, or to allow for the continued use of a working farm. This is typically achieved by clustering new development on the site into areas that will have the lowest impact on the environment or character of the property, and in the case of working farms this technique allows for the monetization of an asset (land) that can help to support the ongoing operation of the agricultural venture on the property.

4.7

Partner with Environmental Organizations to Manage Protected Lands

STRATEGY: Engage the Freshwater Institute and similar organizations to assist the town and local landowners in implementing best practices for the management of conserved lands.

JUSTIFICATION: Protecting land from development through a conservation easement or other means is only part of the overall goal of land conservation efforts. Once protected, these lands need to be managed properly, either through maintenance or restoration efforts, to ensure that they serve the purpose for which their conservation was intended. Providing technical assistance and other resources to the owners of conserved lands through partnerships with local environmental and land stewardship organizations will help the community receive a greater return on the investments that have been made in land conservation.

4.8

Protect Scenic Byways

STRATEGY: Work with WVDOT, the MPO and Jefferson County to establish Scenic Byways along major road corridors in rural areas leading to town.

JUSTIFICATION: The visual aesthetic of the rural highways and farm to market roads that lead into Shepherdstown help to shape the character of the town and give it its context in the rural landscape. Preserving the scenic quality of these rural roads, through land conservation, viewshed easements, or restrictions on development, will help to maintain the character of the rural areas that set the stage for a traveler's entry into the heart of Shepherdstown. As the majority of the roadways lead into the community area outside of the geographic scope of the town's jurisdiction, it will be necessary to partner with other governments and agencies to help realize the implementation of this strategy.



Development activity will occur in a manner that respects the natural landscape.

5.1 Incorporate Environmental Review into the Development Review Process

STRATEGY: Require existing conditions surveys for development proposals to identify critical natural features and work with developers to protect these critical areas.

JUSTIFICATION: The use of existing conditions surveys as part of the development review process will help the town to identify critical natural areas or features on a proposed development site. Coupled with the town's open space preservation requirements, the identification of these areas can be used to help prioritize the location of preserved open space and assist in ensuring that environmental quality regulations related to buffering, stormwater management and the preservation of trees are followed properly.

5.2 Provide Incentives for Tree Preservation

STRATEGY: Develop an incentive program to encourage the preservation of mature trees and stands of trees on properties proposed for development.

JUSTIFICATION: While there is a disincentive in the town's development ordinances related to the removal of mature trees, since a 3 to 1 replacement ratio is required when such trees are removed, there is no other type of incentive for preserving them. Mature trees are a very valuable asset that support the environmental and aesthetic quality of the town, and also supports the tree canopy goals of the Jefferson County Urban Tree Canopy Plan. By providing development related incentives, such as reducing parking requirements, allowing smaller setbacks or similar relaxations of development rules to accommodate the preservation of existing mature trees can help reduce conflicts in

the development review process while also providing a tangible incentive and alternative to the removal and replacement of mature trees.

5.3 Incentivize the Preservation of Oversized Stream and Wetland Buffers

STRATEGY: Implement buffer regulations along perennial streams and around wetland features to minimize the impact of development on these natural features.

JUSTIFICATION: The minimum standards that currently are in place for the provision of buffers along streams and other water bodies provides a minimum level of environmental protection. Incentivizing the preservation and protection of undisturbed buffers along streams can help to mitigate the negative effects of stormwater runoff by providing larger amounts of vegetative filtering capacity and allowing for greater dispersion of runoff across the landscape prior to the runoff entering a stream. The relaxation of rules that require the creation of more impervious surfaces, such as minimum parking requirements, can provide an incentive to a developer to preserve more of their property as a buffer. Similarly, allowing a greater amount of density, through

smaller lot sizes and clustering lots away from streams, can allow for a similar return on investment while also achieving more favorable water quality outcomes.

5.4 Require Native Vegetation in Landscape Plans

STRATEGY: Require the use of native species of trees and shrubberies where development ordinances require the installation of such landscaping materials.

JUSTIFICATION: The use of native vegetation for required landscaping improvements or tree replacement can help to support the ecological landscape of the community by providing food sources and habitat for native species of wildlife. The negative consequences of installing non-native plant species include such issues as increased maintenance, intolerance to local soil and water conditions, shortened lifespans, vulnerability to insects or disease. Native plant species are ecologically adapted to local conditions.



5.5

Prohibit Mass Grading and Clear Cutting

STRATEGY: Prohibit mass grading and clear cutting in conjunction with residential development, and encourage Jefferson County to adopt similar regulations.

JUSTIFICATION: The use of mass grading and clear cutting is an unfortunate and environmentally costly method of development. Typically associated with the development of large tracts of housing or commercial sites, this context incentive development method tends to negatively alter the landscape by making significant changes in topography and removing soil stabilizers such as grass, shrubs and trees, thereby negatively impacting downstream water quality through the introduction of additional runoff and large amounts of sediment (regardless of the installation of silt fences or catch basins on the site). Implementing requirements to conduct smaller, site specific, grading operations and prohibiting the clearing of all vegetation on a development site, while marginally more expensive, will help to achieve better outcomes, in terms of both the preservation of the natural character of a site as well as maintaining better water quality during and following development.

5.6

Implement Steep Slope Development Restrictions

STRATEGY: Implement a steep-slope development ordinance to manage development in areas that have significant topographic issues.

JUSTIFICATION: While not a significant issue throughout the landscape around Shepherdstown, the bluffs along the Potomac River do present opportunities for the development of property on sites that may not be suitable due to the steep slopes that are found in these areas. Development on excessively steep slopes can lead to public safety issues due to the greater propensity for landslide activity and greater susceptibility to undermining or earthquake damage. Limiting the density of development in these areas, or prohibiting it in those cases of extreme topography, will help to guarantee public safety by reducing the risk of casualty damage to property.