



SASSAFRAS RIVER AGRICULTURE AND ECOLOGY CENTER



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Table of Contents

| | |
|---|----|
| <i>Introduction</i> | 3 |
| <i>A Long-Term Protection and Restoration Initiative for the Chesapeake Bay</i> | 4 |
| <i>Partnership with Chesapeake Ecofinance Company (CEFC)</i> | 5 |
| <i>Current Ownership of the Property</i> | 6 |
| <i>History of the Site and Structures</i> | 6 |
| <i>Sassafras River Agriculture and Ecology Center Description</i> | 9 |
| Sassafras River Agriculture Center Description | 9 |
| Sassafras River Ecology Center Description | 17 |
| <i>Conclusion</i> | 21 |
| <i>Appendices</i> | 23 |
| Appendix A: Hunting Seasons Calendar 2009-2010 | 23 |
| Appendix B: Lodging Near Sassafras River Agriculture and Ecology Center..... | 23 |
| Appendix C: Soil Map | 23 |
| Appendix D: Sassafras Natural Resource Management - Land Unit Plan | 23 |

Introduction

The Sassafras River, a major tributary 20 miles long located on the Eastern Shore of MD, and flowing into the northern reaches of the Chesapeake Bay, delineates the boundary between two counties – Kent and Cecil. Its watershed encompasses 97 square miles with 2,500 households, 1,800 commercial boat slips, and seven marinas. The land use includes 51% agriculture, 19% forest and other cover, and 16% residential. Approximately halfway along the length of Kent County, to the south, is an inlet of great ecological and historical significance called Turner’s Creek.¹ Route 448 dead-ends at Turner’s Creek, located twelve miles north of Chestertown and approximately three miles north of Kennedyville.²

Turner’s Creek, and the adjacent land on both sides of Route 448 totaling over 1,200 acres, is the proposed site for the Sassafras River Agriculture and Ecology Center. The site, championed by former United States Congressman Wayne Gilchrest³ – a Kent County native with deep connections to the land – serves as a prime location for ecological and agricultural education, restoration, and recreation. It has also caught the attention of a multitude of state and local partners seeking to preserve and protect the agricultural integrity, ecology, history, culture, and sustainable recreation potential of the Chesapeake Bay region. It is widely recognized by Bay advocates that the future sustainability of the Eastern Shore will be dependent on (1) sustainable food production systems and (2) a commitment to environmental and agricultural education for the public and for farmers – both stakeholders who can become key advocates for the health of the Chesapeake Bay.



The overarching goal of the Sassafras River Agriculture and Ecology Center is **to provide a center of learning, for the public as well as the agricultural community, which demonstrates how agriculture on the Eastern Shore can be sustainable and can co-exist with wildlife habitat restoration and protection, recreation, land conservation, and a healthy Chesapeake Bay.**

¹ Turner’s Creek appears on early maps (circa 1673) as Turnys Creek. It was also known locally as Child’s Harbour as it was granted to Francis Child in 1671.

² Source: Kent County, MD Parks and Recreation, Turner’s Creek Park, www.kentcounty.com/gov/parkrec/parks/turner.htm

³ Photo: Congressman Gilchrest on the banks of the Sassafras River. Photo courtesy of J. Throwe.

A Long-Term Protection and Restoration Initiative for the Chesapeake Bay

Since 1983, when the Chesapeake Bay Agreement, signed by governors of Maryland, Virginia, and Pennsylvania and the Mayor of the District of Columbia, the Chairman of the Chesapeake Bay Commission (a legislative body serving Maryland, Pennsylvania, and Virginia), and the Administrator of the U.S. Environmental Protection Agency, created the Chesapeake Bay Program, efforts have been underway to restore and protect the watershed. The Chesapeake Executive Council, comprised of the entities named above as well as the governors of Delaware, New York, and West Virginia (who joined the partnership in 2002), meets annually to set policy direction.

The Chesapeake 2000 agreement, signed in June 2000 by the Chesapeake Executive Council, committed to “correcting the nutrient-and sediment-related problems in the Chesapeake Bay and its tidal tributaries by 2010”. In 2004, the Bay Program’s leadership called for the completion of Tributary Strategies to determine how best to meet water quality goals and load allocations in each Bay tributary. The Chesapeake Executive Council also directed the Chesapeake Bay Program to establish a Chesapeake Bay Watershed Blue Ribbon Panel for the consideration of funding strategies to implement Bay protection. The Blue Ribbon Panel report was issued in late 2004. In May 2009, President Obama issued an 11-part Executive Order indicating renewed federal support and leadership for Bay restoration efforts. The Executive Order also directed Environmental Protection Agency Administrator Lisa Jackson, incoming chair of the Chesapeake Executive Council, to fully use the federal authority authorized under the Clean Water Act.⁴

But despite these efforts, Bay health continues to decline. The Chesapeake Bay watershed, 64,000 square miles and home to 16.6 million people, faces the combined pressures of development and industrialized agriculture. Population growth is linked to urbanization which, in turn, is connected to increased stormwater runoff, natural resource consumption, wastewater, and transportation. Agriculture, an important component of the Bay region’s economy, history, and culture, relies on industrialized practices which lead to an overabundance of nutrients and sediment in the Bay.⁵

With the signing of the 2009 Executive Order, and a renewed federal commitment to lead protection efforts within the watershed, the restoration of the Chesapeake Bay is, once again, at the forefront of public discussion. The Eastern Shore of Maryland, a geographically significant portion of the watershed, is a focal point to this discussion. The Sassafra River Agriculture and Ecology Center, located in the northern reaches of the Maryland Eastern Shore, stands to become a signature example of Bay restoration. A large-scale project of this nature can propel restoration efforts forward by showcasing sustainable agriculture practices on the Eastern Shore and demonstrating how these can

⁴ Source: Saving A National Treasure: Financing the Cleanup of the Chesapeake Bay, A Report to the Chesapeake Executive Council from the Chesapeake Bay Watershed Blue Ribbon Finance Panel, 2004.

⁵ Source: Chesapeake Bay Program, <http://www.chesapeakebay.net/index.aspx?menuitem=13853>.

coexist with wildlife habitat restoration and protection, recreation, land conservation, and a healthy Chesapeake Bay. The Sassafras River Agriculture and Ecology Center is poised to become a standout in the next generation of initiatives that provide meaningful long-term protection and restoration to the Bay and to the people of the watershed.

The Sassafras River Association (SRA) with several partners has developed the Sassafras Watershed Action Plan (SWAP) to identify major threats to the Sassafras River and develop restoration strategies with the goal of a cleaner and healthier river. The SWAP was approved by the Environmental Protection Agency (EPA) in early 2010, and will be finalized in March 2010. The proposed Sassafras River Center is well-aligned with the outreach, education, recreation, and watershed protection guidelines found in the SWAP.

Partnership with Chesapeake Ecofinance Company (CEFC)

The Sassafras River Agriculture and Ecology Center is well-situated to be a pilot project in the growing ecosystem services credit trading market within the Bay watershed. In partnership with Chesapeake Ecofinance Company (CEFC), ecological restoration projects will be installed on the property with an eye toward future ecosystem services credits which, in turn, will provide funding for Sassafras River Center activities and programs.

CEFC is an emerging leader in the protection of Bay water quality, acting as a “developer” of ecosystem services on farmlands. CEFC’s business model highlights three ways to form CEFC/farm partnerships. In the first scenario, a farm would be purchased by CEFC and immediate improvement of the property would ensue (through ecological restoration projects such as wetland restoration, the installation of buffers, the implementation of various Best Management Practices (BMPs), and the selling of conservation easements on the property). The improved property, now boasting ecological benefits such as reduced nutrient runoff, improved wildlife habitat, carbon sinks, etc., would be eligible for ecosystem services credits. The property is sold, at a low profit (in part due to the potential for future farm revenue in the form of ecosystem services credits), with encumbrances for maintaining the best practices that have been installed on the property. A second scenario could involve the CEFC acting as consultant and/or co-investor with a farm owner who wants to implement conservation improvements. CEFCs income in such transactions would be a result of sharing future ecosystem services revenue. A third scenario is also possible, with CEFC acting as a third party ecosystem services investor by fronting the costs of BMP installation and receiving payments from the farmer in the form of a low interest loan or shared ecosystem services credit payments.

The Sassafras River Agriculture and Ecology Center is a candidate for the second type of transaction described above. CEFC is already familiar with the site and is prepared to begin assessment of all or a portion of the property as soon as lease agreements with the state of Maryland and/or Kent County are finalized.

Current Ownership of the Property

The ownership and management of the property at the proposed site is complex. Turner's Creek Park itself, including the pavilion, granary, pier, the historic Lathim House, and parking area, are owned by Kent County and managed by the Parks and Recreation Department. Another of the historic buildings, a house known as Knock's Folly, is vacant but owned by the State of Maryland under the State curatorship program. The Sassafras River Natural Resource Management Area is owned by the State of Maryland but maintained and managed through a cooperative effort of the Maryland Department of Natural Resources (DNR) State Forest and Park Service and the Kent County Parks and Recreation Department. The agricultural fields are also owned by the State of Maryland and are being cultivated by a local farmer through a lease agreement.

Congressman Gilchrest is currently in the process of formalizing the creation of the Sassafras River Agriculture and Ecology Center as a 501(c)3 entity. In addition, he intends to obtain a long-term lease with the State of Maryland for the Maryland-owned portion of the property and formalize a long-term MOU (Memorandum of Understanding) with Kent County for the county-owned portion of the property.

History of the Site and Structures⁶

Turner's Creek Pier and Granary –

Turner's Creek has been used as a port for well over 300 years and, very likely, by Native Americans prior to European settlement. The creek has over a mile of waterfront with a pier and boat launching ramp accessible to the public. At 15 feet of water depth, the port is used by commercial watermen as well as recreational boaters. At the foot of the pier stands a granary once used for shipping supplies to General Washington's troops at Valley Forge. Built in 1830, it is the last existing granary in Kent County. It was used from colonial times until the early 18th century, to store agriculture commodities to Baltimore, Philadelphia and Europe. The Kent County government has recently received a grant to begin restoring the granary and may be considering the site for renovation into a working museum.



⁶ Sources (including photos): Three Centuries of Kent, A Driving Tour on Maryland's Historic Eastern Shore, Saturday October 8th, 2005, www.kentcounty.com/events/heritage_trust/ ; Kent County, MD Parks and Recreation, Turner's Creek Park, www.kentcounty.com/gov/parkrec/parks/turner.htm , Kent County Museum, <http://www.kentcounty.com/farmmuseum/> , Maryland Historical Trust, <http://mht.maryland.gov/nr/NRDetail.aspx?HDID=386&FROM=NRMapKE.html>

Knock's Folly House – Heading north on Route 448, just before the dead-end at Turner's Creek, the Federal style three story brick house known as Knock's Folly is visible on the right. The house currently stands vacant and is owned by the state of Maryland and under curatorship through DNR. A live-in caretaker occupies the smaller building (a log house dating to around 1753) attached to the brick house.



Kent Museum – The Kent Museum opened in the 1960's to preserve Kent County's rural heritage. The museum features farming equipment and household items that show how rural Eastern Shore families lived and worked years ago. There are also artifacts including an old post office display, printing presses, and voting machines to show what life was like in Kent County's early days. The Kent Museum is open from noon to three on the first and third Saturday of each month from May to October, or by special arrangement.



Charley's House, Garden, and Tobacco Drying Barn – Charley's House can be found at the rear of the display buildings at the Kent Museum. According to the museum website, the structure was moved to this site in 1972 from an unpaved lane off Court Street in Chestertown. Kent County Heritage Trust provided a grant to restore the exterior of this structure and begin the interior restoration. This whitewashed building stands at a story-and-a-half and is believed to have been a slave cabin housing two families. Museum Board Members have also created Charley's Garden to show how a small garden helped to feed a poor family. An outhouse, pre-Civil War cemetery, and tobacco drying barn complete this site. There is another cemetery located at the Shrewsbury Church built in 1832 after a fire destroyed the original structure.



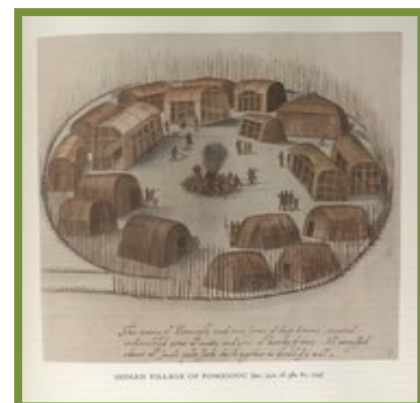


The Pavilion – A long, open-air pavilion, constructed around 1972, is located on a rise just off the pier at Turner’s Creek. The site, called Garden Point, was formerly occupied by the Donald Yeates house. Mr. Yeates was a captain in the Kent County Militia during the Revolutionary War. When the Yeates House was razed and the land came into ownership by Kent County, a pavilion was built so residents could continue to enjoy the breathtaking view. The covered pavilion has two barbeque grills and picnic tables and is the site for many community gatherings including church picnics and weddings.



The Lathim House – The Lathim House, also spelled “Latham”, is the third and most interesting building on the site. This building is located near the granary and across from the pavilion and is currently used only as a restroom. The Lathim House was built in 1760 and is named for Yeates’ nephew John Lathim. Lathim ran a store and a successful shipyard in the wharf area. Much of the original structure has been changed over time, but the plank log façade can still be seen. The building is built into a hill - the side of the building facing the river looks out onto a flat, treed lawn while the side facing the road (Route 448) has steep stairs leading down to the restrooms and up to the porch of the building.

Native American History – Turner’s Creek plays a role in the Native American history of the Tockwogh Indians who called the Sassafras River area home at the time Europeans began exploring North America. It is believed that Captain John Smith met with the Tockwogh Indians at Turner’s Creek during an exploratory trip of the Chesapeake Bay area in 1608. They eagerly welcomed Smith because they believed he just defeated their enemy,



the Massawomek Indians. The Tockwogh helped him establish contact with the Susquehannock Indians from whom he learned the Chesapeake Bay was not a link to the Northwest Passage.⁷

Sassafras River Agriculture and Ecology Center Description

The site naturally divides into two distinct but connected centers of activity – agricultural training and environmental education. The following section proposes the organization and programming of the **Sassafras River Agriculture Center** and the **Sassafras River Ecology Center**.

Sassafras River Agriculture Center Description

Entering the site from the south on Route 448, the Sassafras River Natural Resource Management Area is located on the left. This, along with the Knock's Folly House across the street, is the proposed location for the agriculture training center. At present, 350 acres of the land is being planted with corn and soybeans by a tenant farmer who leases the land through the Maryland DNR. A significant amount of land on this site (about 13 acres) has been recently reforested by DNR and a total of approximately 70 acres has been reforested over the past 15 years.⁸ Surrounding the agricultural area is a forested buffer of approximately 75 feet leading to bank of the Sassafras River. The site also boasts a network of trails through the forested buffers leading down to the river.

Important features of the agricultural training center include:

Enhanced Buffers – Because of the proximity of the on-site agricultural land to the Sassafras River and due to the naturally-occurring steep slope down to the river, the Sassafras River Agriculture Center proposes to take additional land out of agricultural production and expand the buffer by about 125 feet (at a minimum) around the working lands, creating 200 total feet of buffer (at a minimum) along the water's edge.

The buffers will include plant varieties such as hybrid poplar, willow, silver maple ash, and switchgrass. These plantings will slow and filter pollutant laden runoff, reduce sedimentation of the water, and stabilize river banks and water temperatures.

Buffers also provide valuable habitat for terrestrial species and habitat enhancement for aquatic species. This promotes species diversity and abundance, resulting in more stable and resilient natural systems. In addition to food and cover, this network of vegetation also provides a travel corridor for wildlife. Riparian buffers benefit both upland game

⁷ <http://www.smithtrail.net/things-to-do/trail-explorations/northern-bay.aspx>

⁸ Personal Communication: Wayne Gilchrest, email, Feb 3, 2010.

species like rabbit, white-tail deer, and quail as well as nongame species such as migratory song birds.

These plans are well-aligned with the state's Sustainable Forestry Initiative and the Chesapeake Bay forest buffer goals. Chino Farms has allowed the Chester River Field Research Center to conduct investigations in ecology and conservation biology on its grounds since 1999. It is conducting grasslands experiments on the land to test for restoration of wildlife habitats. The Sassafras River Agriculture Center can use Chino Farms as a mentor for guidance on grass buffers and buffer enhancement that results in a positive response from many bird species.

Biomass Production for Renewable Energy – The emerging biomass industry in the Chesapeake Bay region calls for an investment in biomass supply now in order for the renewable biofuels to be ready for market by 2015. The buffers mentioned above will include, at a minimum, fifty acres of fast growing trees, shrubs, and grasses to be used as biomass for renewable energy purposes. The expectation is that within ten years, some of the trees will be harvested for use as a biomass energy source, the proceeds from which will be reinvested in the center. The switchgrass, however, can be harvested in three years and will be used similarly or as fuel at the center.

Exhibit, Classroom, and Office Space – The Knock's Folly House, currently vacant, will undergo renovations to make it suitable for a Visitor's Center (first floor), a Classroom (second floor), and Offices for Center Staff (third floor).

Visitor's Center – A Visitor's Center and historical display, focusing on Turner's Creek in the 1700s and 1800s, will be located on the main floor of the Knock's Folly house. The Visitor's Center will have information for self-guided walking tours of the property featuring agricultural and historical highlights such as the tobacco drying shed, the outhouse, the restored slave house and slave garden, and the pre-civil war cemetery. Information on self-guided hikes along the Sassafras showcasing unique features of the land, wildlife habitat, archeologically significant sites, and historic tree identification will also be available. A ramp will be constructed to make the Visitor's Center more readily accessible to wheelchairs and strollers.

Classroom – The second floor of the building will serve as classroom space for ongoing agriculture training programs. The room will be equipped as a simple classroom (tables and chairs) and will include some A/V technology for presentations.

Office Space – Located on the third floor, this space will host the staff necessary to manage the Visitor’s Center, outreach activities, and the various agriculture training programs.

Applied Research and BMP Demonstration Sites – The 300 acres of remaining working agriculture land will be used to highlight sustainable agriculture practices. The acres will be divided into training and demonstration sites as well as plots used for applied research purposes. Best management practices will be employed including crop rotation for pest control, reduced- or no-tillage, crop diversity suitable to soil types and climate, sustainably stored and applied manure, agro-forestry, and cover crops.

Large-Scale Composting – A large composting area will also be located at the training center and the opportunity to add an anaerobic digester on-site will be explored through the University of Maryland’s College of Agriculture and Natural Resources.⁹

Demonstration Sites for Specialty Crops – Specialty crops, including sustainably farmed produce, may be grown at this site and used for demonstration and education purposes.

Poultry Demonstration – A small poultry house for layers will be set up to show the benefits of raising local eggs and with an emphasis on sustainable practices. Poultry litter stockpiling examples will be set up on site for to demonstrate proper litter storage which limits leaching into the water.

Research Tools – The area around the training center will be enhanced with a soils pit and other tools that will make it very attractive to applied research activities.

New and Innovative Technologies – Other cutting-edge technologies, such as GreenSeeker, IPM, and biochar could be practiced at this site to demonstrate true innovation in sustainable agriculture.¹⁰

Agriculture Training Curriculum – The land, as well as the agriculture education classroom set up in the Knock’s Folly building, will be used for training, education and practical application in the latest sustainable farming practices with the cooperation of the University of Maryland

⁹ Scientist Stephanie Lansing, for example, is interested in test sites for her research on the use of small on-site digesters on Eastern Shore farms.

¹⁰ For more information on GreenSeeker, see the EFC report on Improving Watershed Planning Capacity: Middle Chester Partnership (pg. 6-7) at http://www.efc.umd.edu/pdf/MidChesPart_FinalReport.pdf

College of Agriculture and Natural Resources. Training focusing on new, young, and minority farmers will be encouraged in the agriculture training programs held at the site. Possible participants and/or programs interested in utilizing the agriculture training site include:

- Master Naturalist Program (to begin in the summer 2010 under the leadership of the University of Maryland College of Agriculture and Natural Resources)
- Woodland Stewards Program
- Master Logger's Program
- Youth and 4H Summer Camps
- Boy Scouts and Girl Scouts
- Master Gardener's Program
- Applied Research
- Forestry and Agronomy Program
- Extension Activities

Farmers Market – A weekend Farmers Market, operating seasonally (late spring and summer), will be hosted at the pavilion. (For more on the pavilion, see the Ecology Center description below.) The market will take advantage of the significant boating traffic and pier activity during the summer months while showcasing locally-grown produce including produce, eggs, etc. produced on-site as well as locally-harvested seafood,. Proceeds from vendor fees will be used to sustain the center.

At present, the only farmers market in the area is located in Chestertown, Maryland, which is approximately fifteen minutes away by car. Since the Sassafras River Agriculture and Ecology Center will have an influx of tourists and local residents visiting the area during this time, it will be a prime location to build a locally grown food market. The market will be another way to connect the local community to the Sassafras River Agriculture Center as it will promote the sale of diverse produce grown at the center and at other local farms.

This new farmers market will include fresh farm produce, herbs, cut flowers, and bedding material, as well as promote value-added products made from area farms such as honey, baked goods, cheese, wreaths or ornamental arrangements, jams, and other specialty items.

In its initial year, the Sassafras River Center will find a minimum of eight qualified vendors willing to set up a market stand during the warmer months and will solicit help from the 4H and Future Farmers of America for assistance running the stands, particularly for farmers who are too busy to manage the sale of their own produce. This will also be an excellent internship opportunity in collaboration with youth organizations that are

associated with the Sassafras River Center, and it will offer leadership opportunities and agriculture business training.

The pavilion at Garden Point boasts space to accommodate ten to fifteen vendors. In good weather, the grassy area around the pavilion could host an additional ten vendors. Ample parking is available across Route 448 in the lot next to the Lathim House. The Sassafras River Agriculture Center will lead the effort to organize and manage the logistics associated with maintaining a farmers market. The Sassafras River Center will be responsible for working with interested stakeholders to establish market rules and regulations, assign space, register vendors, collect any seasonal fees for market space, and work with the media and other agencies and organizations to promote the new market and maximize on existing resources within the state to support this effort.

The launch of a farmers market at the Sassafras River Agriculture and Ecology Center will require a part-time Market Manager whose job it will be to coordinate all aspects of the new farmers market. The Market Manager will begin the design of this market starting with a planning stage and then continue his/her efforts through the implementation stage.

During the initial planning phase, the Market Manager will begin a series of outreach meetings to identify interested stakeholders such as neighboring farms, Maryland Department of Agriculture, local agribusinesses, and others to gain input and work out specific details of building a successful market. This meeting will also serve as an opportunity to engage perspective vendors and gain community support for a new market. The Market Manager will also seek partnerships and sponsorships with the local businesses, agriculture colleges, extension agents, county planning office officials, and agriculture associations.

During this early planning phase, specific information will be collected that will be used to develop a business plan. This plan will need to give consideration to issues such as local zoning, market accessibility, parking, traffic flow, and facility features. This plan will be designed to serve as a template for implementation, defining the operational requirements and logistical details of the Market. This plan will also consider how best to complement the existing market in Chestertown, so as not to directly compete with it.

Following a business plan, the Market Manager will draft bylaws for the market and create necessary documents such as vendor application form. This stage will also include a media promotion campaign expected to include a variety of marketing tools such as newspapers, websites, emails, and a brochure.

It is anticipated that approximately \$30,000 will be needed to cover the year-one costs of launching and operating the farmers market at Turner's Creek pavilion. An estimated \$25,000 of that amount will be spent to hire a part-time Market Manager for eight months of the year (approximately 20 hours/week during the planning stage and the implementation stage) to write a business plan, develop bylaws and applications, gain community support, and host stakeholder meetings. The remaining \$5,000 will be spent on marketing and outreach, supplies, and printing expenses.

Alternative Energy Demonstration – As an additional alternative energy demonstration, a wind energy turbine will be incorporated into the site to supply the Knock's Folly house with electricity. Two scenarios for financing the turbine are envisioned. First, a small wind system with a rated power of 100 kilowatts (kw) or smaller with a generator hub height of 120 feet will be purchased by a donor for approximately \$25,000. The donor will take advantage of the \$6,000 state tax credit that can be used over a two-year period, and will seek another \$6,250 in the form of a grant from the USDA's Rural Energy for American Program (REAP). An additional \$6,250 is expected to be covered by a one-time Maryland tax credit of 25% from the Maryland Energy Administration (MEA). This will reduce the net cost of the turbine to \$6,500. This amount will likely qualify as a donation to the non-profit Sassafras River Center. If the donor elects not to apply the remaining net cost as a donation to the center, the investor could still use the tax credits over the course of several years and a repayment system could be negotiated with the Sassafras River Center. At the end of the repayment period, the wind turbine would be the property of the Sassafras River Center.

Alternatively, the wind turbine could be secured through an IRS tax credit system often referred to as "flip" transactions. Under Section 45 of the Internal Revenue Code, there is an allowance for renewable electricity production credits for each kilowatt hour of electricity produced by a given project. The credit continues for 10 years from the time the alternative energy project is put in place. Once the turbine is in place, an educational board will be displayed to provide visitors with information on how the small system supplies energy to the property's main building.

Agricultural History – Trails featuring agricultural and historical sites will be set up to be self-guided. These hikes will begin at the Knock's Folly house and will feature the tobacco drying shed, the outhouse, the restored slave house and slave garden, and the pre-civil war cemetery. Other unique features, including wildlife habitat, archeologically significant sites, and historic trees, will be included. Numbered plaques will be posted in order to give historical reference to each stop.

The Agriculture Museum, now known as the Kent Museum, is located down the road from the Knock's Folly house and holds a collection of 200 agricultural artifacts. The Kent Museum was organized by several local farming families in the 1960's in order to preserve the rural heritage of the county. Many of the families donated agriculture equipment that dates back over 150 years. Among the items on display are horse drawn wagons and sleds as well as gadgets that farm wives used to do their daily chores. The museum is currently open from 12pm to 3pm on the first and third Saturday of the month between the months of May through October. With the cooperation of the farm families now supporting the museum through annual donations, the museum can become an integral partner to the Sassafras River Agriculture and Ecology Center.

In addition to these features, the Sassafras River Agriculture Center will also showcase sustainable agricultural practices at the site. All practices and revenues, both from agricultural practices and those derived from the "crop" of generated ecosystem credits, will be well-documented in order to build a record of successes (and, possibly, failures) to enhance learning at the site. These practices will provide real examples to new, young, and minority farmers training at the center as well as other students and the public. Sustainable agricultural practices will include:

Water conservation practices –

The Sassafras River Agriculture Center plans to implement a suite of best available technology practices that conserve water. Water conservation measures such as mulch, composting, and rain barrels will be used in order to minimize



the need for any additional water. No-pivot irrigation will be used and crops will be sustained using micro-irrigation, only when necessary, to conserve potable water. Whenever possible, drought tolerant crop species will be planted which will limit the need for irrigation. Corn and soybeans, crops that use significant water per-acre, will be replaced with less water-intensive crops. As the center matures, additional land may be taken out of production. A reassessment of practices to conserve water and improve water quality will take place on an annual basis.

Water quality improvement practices – Practices that limit ground and surface water contamination will be adhered to at the center. No pesticides, herbicides, or nitrates, will be used anywhere on the farm unless they are organic by nature. Due to the center's proximity to the water table, tile drainage can be used to remove water and salts that may build up in the fields. Additional water quality improvement practices, such as agro-forestry techniques, will also be used at the site.

Crop selection practices – Fields currently under monocrop rotations or corn and soybeans have areas where it is clearly visible that all topsoil has been removed. To return these fields to productivity, it is expected that major soil amendments and crop diversification will be needed for a number of years. Diversifying crop will have the added benefit of reducing the risk of total crop loss due to weather and/or disease, improving production stability.

In addition, the Sassafras River Agriculture Center will use best crop selection practices to ensure crops are suitable to the site's soils, climate, crop history, pests, and topography. Only species and varieties that are best suited to the conditions of the Sassafras land and soil will be used.

Soil improvement practices – Practices that maintain, restore, and improve the health of the soil will be used at the site. Healthier soils translate directly to healthier crops, less susceptible to pest and disease, thus reducing the need for non-organic fertilizers, pesticides, and herbicides. These practices will include activities that reduce soil erosion, add natural soil amendments to the land, and achieve nutrient balance.

Best Management Practices (BMPs) will include the following:

- Cover crops that hold the soil and nutrients in place and conserve soil moisture when used as mulch. Cover crops will be strongly encouraged whenever possible since they control erosion, act as natural filter systems, help with excess nutrient uptake, and control pests.
- Wind breaks will be set up where heavy erosion occurs.
- Conservation tillage and natural weed management practices will be used at all times.
- Compost or some manure management will be added to the soil as a natural soil amendment.
- Crop rotation to suppress weeds, insects, and pathogens and increase nitrogen and phosphorous uptake will be included as a year round BMP.

The Sassafras River Agriculture Center will also seek assistance from the local Soil Conservation District and the County Planning.

Wildlife habit restoration and protection – Agricultural activities and practices that enhance habitat for native wildlife will be added whenever possible at the center. This will be done in a variety of ways including increasing the amount of riparian buffer available as habitat. As mentioned in the agricultural section of this report, buffers provide valuable habitat promoting species diversity and abundance, resulting in more resilient natural systems. Riparian buffers provide food, cover, and hub corridors that benefit both game and non game species.

Air quality improvement practices – The Sassafras River Agriculture Center will employ agricultural practices designed to protect air quality as well. These will include practices such as maintaining and expanding tree canopy to absorb carbon, planting windbreaks to absorb particulate matter, and using no drift spraying techniques to limit airborne pollutants.

Sassafras River Ecology Center Description

The 147-acre park at Turner's Creek, located where Route 448 dead-ends at the Sassafras River, will host the headquarters for the Sassafras River Ecology Center. At this location, three buildings (the Lathim House, the granary, and the pavilion) enjoy a mile of waterfront and a pier with a public boat launch ramp that has a water-depth of 15 feet.

The Lathim House, once renovated, is the proposed location for programming associated with the Ecology Center. This will become the main office for the Sassafras River Ecology Center including a small "Visitor's Center" style exhibit area to provide information about the ecology and wildlife of the Sassafras River. Information will also be available regarding the on-site trail system, farmer and seafood market information, kayak/canoe rentals, etc. The offices will be used to coordinate the eco-camps, river tours, markets, fisherman activities, and rentals for the pavilion.

The granary, located at the foot of the pier, will remain the core for commercial and local recreational fishing activities. As part of the Sassafras River Ecology Center's programming, watermen will be encouraged to establish a local fish market similar to, or in conjunction with, the farmers market expected to be set up under the pavilion. Part of the building may also be used to store canoes, kayaks and paddle boats to be used for eco-camps and Sassafras River ecology tours. The Sassafras River Ecology Center will work with the Kent County government to develop the best plans for renovating this structure in an eco-friendly way that will benefit the waterman while supporting the center's programs.

The large covered pavilion at Garden Point looks out over a bluff providing a spectacular view of the river. The pavilion will continue to be available to the public for rentals but will also host a weekly seasonal Farmers Market, sponsored in coordination with the Sassafras River Agriculture Center. Area farmers currently go to Chestertown in order to sell at the farmers market and, with the addition of the seafood market at the granary, the pavilion will become a local stopping point for people wanting fresh produce from area farmers. The pavilion will also be used as an outdoor classroom for the Ecology Center and Agriculture Center.

Protecting this 147-acre park by establishing the Sassafras River Center will advance efforts to protect habitat for riparian and aquatic species. Endangered

plant species in the Chesapeake Bay region include salt marsh grasses and eelgrass, upland scrub/shrub communities, and mixed hardwood and pine forests. Endangered animal species in the region include Delmarva fox squirrel, piping, Wilson's, and black bellied plovers, American oystercatcher, five species of nesting terns, black skimmer, red knot, whimbrel, American black duck, northern beach tiger beetle, and native oyster.¹¹ While the site at Turner's Creek needs to be assessed for the presence of these species, protecting the park will ensure the ecological integrity of the site for innumerable species of fish, reptiles, amphibians, birds, insects, and mammals.

There is a long history of humans coexisting with nature in a sustainable way on this land. This history can be preserved and strengthened by using this center to educate the public about the importance of ecology of the area and their role in shaping it. The land offers an opportunity to weave together its natural history and how it has changed and evolved with human influence over thousands of years. This area is still home to many native plants, deciduous trees, and species of birds and animals integral to the ecosystem. There is also a wealth of opportunity for watermen and recreational fisherman to bring in rockfish, catfish, North American Eels, and blue crabs. Farmers have raised livestock and cultivated food on the land going back to when Native Americans inhabited the area. This site offers the chance to bring all of these aspects together to showcase the importance of this land and its role in the greater ecosystem, as well as the significance of protecting it for future generations'.

Other important educational and recreational features of the site include:

Riverside trail system – Existing trails will be augmented with additional trails to create a network of scenic walks and hikes. Signage with species identification, Sassafras River ecology information, and information on how to protect and restore the watershed will be posted at strategic sites along the trails. Maps, available at the Lathim House, will show how to access the trail network. It is likely, that this network of trails could be linked to the Captain John Smith Trail Chesapeake National Historic Trail, currently under development.

Enhancement of Captain John Smith Chesapeake National Historic Trail¹² – Turner's Creek Park was listed in 2004 (as was the Sassafras Natural Resource Management Area) as one of the 160 members of the "Chesapeake Bay Gateways and Watertrails Network". These are places (parks, wildlife refuges, museums, sailing ships, historic sites, water trails, and more) that are dedicated to the preservation of Chesapeake Bay

¹¹ Source: The Nature Conservancy, <http://www.nature.org/wherewework/northamerica/states/virginia/preserves/art15019.html>

¹²Source: Captain John Smith Chesapeake National Historic Trail, Draft Interpretive Plan, http://www.smithtrail.net/pdf/CAJO_Interpretive_draft.pdf; Chesapeake Bay Gateways Network, <http://www.baygateways.net>

history and culture. As a designated gateway, both the park and the natural resource management area are eligible for financial assistance through the National Park Service.

In 2006, the Captain John Smith Chesapeake National Historic Trail was established as the first national water trail in the United States. This trail traces nearly 3000 miles of historic routes taken by John Smith from 1607-1609 to chart the land and waterways of the Chesapeake Bay. Captain Smith's journey to Turner's Creek is documented in journal entries made during his second exploratory voyage of the Chesapeake Bay and its tributaries.

In addition, the Sassafras River is one of the most northern points of the National Park Service's Start Spangled Banner National Historic Trail, a collection of trails that trace four major events from the Chesapeake Campaign of the War of 1812. The trail specific to the Sassafras was a diversionary maneuver to the head of the Chesapeake Bay designed to mislead British troops which included a standoff with British forces ten miles west of Turner's Creek at the Kitty Knight House in Georgetown.¹³

As part of these trails, the Sassafras River Ecology Center will be well-positioned to develop programming on American history, natural history, Native American culture, watermen tradition, and more with support from the National Park Service and Chesapeake Bay Program.

K-12 educational programming – The Sassafras River Ecology Center will offer educational opportunities that can directly align with the Maryland curriculum standards for children in grades K-12. The grounds of the site, including the trails, pavilion, and Lathim House, will serve as a nontraditional outdoor classroom in which children will be able to interact with nature during their lessons, providing a unique learning experience. Students can learn much about the components and importance of ecosystems through educational programming to be made available at the Sassafras River Ecology Center.

The key characteristics of ecosystem reporting, which include system dimension, chemical and physical condition, biological components, and human use could serve as a framework for instruction. This structure can be adapted well to fit with K-12 curricula in science, mathematics, and history classes. A survey of the property will be needed to identify the best locations for beach seining, fish trapping, aquatic animal viewing, bird watching, and other activities. A demonstration/education area should also be included to illustrate natural seral succession.

¹³ Information from www.nps.gov/stsp/planyourvisit/index.htm and www.kittyknight.com/pages/about.htm accessed February 22, 2010.

Environmental educational programming – In addition to activities hosted by University of Maryland students and faculty, various educational events and activities will be available at the Sassafras River Ecology Center. Natural science-related instruction, such as flora and fauna identification, river ecology, stream sampling, soil assessment, etc. are just some of the topics that could be included in the educational curriculum. Night hikes, bird-watching tours, full-moon hikes, and star-gazing tours are also possibilities. Potential audiences, some of whom already engage in informal programs at the site through the work of Congressman Gilchrest, include:

- Church groups
- Homeless shelters
- At risk youth programs
- Watershed organizations and environmental groups
- Chesapeake College and Washington College

The Sassafras River Ecology Center can serve as an important outlet for underserved communities that would not otherwise be exposed to these activities and all of the benefits nature has to offer.

Volunteer programming – In conjunction with educational programming, the Sassafras River Ecology Center is an ideal site for groups (on the Eastern Shore and beyond) seeking to fulfill volunteer hours. A well-organized system, designed to match on-site projects with the abilities and timeframe of both large and small volunteer groups, will be an important feature of center programming. Volunteer hours can be harnessed for activities such as trail clearing and maintenance, tree planting, simple site repairs, website updates, mailings, and special events staffing. Volunteer hours may also be harnessed for various Agriculture Center projects as well. The groups listed above are also potential audiences for the volunteer program.

Hunting Season at the Sassafras River Agriculture Center – In Maryland, like in most states, hunting of various wildlife species is regulated under state law as a way to control population of species. Hunting in Maryland is managed by DNR. Hunters are required to have a Maryland hunting license to hunt in the state, as well as additional state and federal game stamps for some species. Hunting licenses and fees provide more than half of the funding for Maryland's wildlife programs. In FY 2008, this was over \$6 million, with hunters from outside the state accounting for 44% of this income.¹⁴ Ancillary economic benefits are also realized by local businesses that support the sport, such as guide services

¹⁴ Fiscal Year 2008 data as reported in the Maryland Department of Natural Resources 2009-2010 *Guide the Hunting and Trapping* which can be found at www.dnr.state.md.us/huntersguide/pdfs/2009_2010_MDHuntGuide.pdf

and gun and ammunition shops, and accommodate hunters, like hotels, lodges, and restaurants. Hunting can also mean supplemental income for the many farmers that allow hunting on their private lands.

Hunting plays a significant role in Eastern Shore history and culture. Much like the state, it is also a vital part of the Eastern Shore economy, and is an important industry in Kent County. Hunters from across the state and throughout the Mid-Atlantic region come to Kent County to hunt waterfowl, game birds, upland game species and deer.

Hunting has traditionally occurred along the Sassafras River, and hunters have made good use of the Sassafras River NRMA where forest game, deer, (limited) upland game, and migratory goose hunting (via the Managed Hunt Permit lottery) is permitted. The Sassafras River Center recognizes that hunting brings the state revenue and offers positive benefits to the environment by ensuring that certain game populations remain at levels the habitat can sustain. The significance of hunting on this land also works to ensure its continued protection as it is the existence of this natural environment that provides the wildlife species at the core of this sport

It is the intention of the Sassafras River Center to continue this tradition. With some minor adjustments to accommodate learning programs and ensure the safety of the Center's visitors and staff, a managed hunting season will continue.

Additional Recreational Activities – Guided kayak and canoe river tours, coordinated through the Lathim House Visitor's Center, will be available for a fee to the public and other organizations. The public can also participate in hiking, biking, horseback riding, birding, nature photography, picnicking, and touring historic sites.

Opportunities for collaboration in birding activities are possible with the Chesapeake Audubon Society and the Pickering Creek Audubon Center. It is the hope and goal of the Sassafras River Ecology Center that these types of opportunities to become steeped in the natural world will help to further develop a sense of environmental appreciation and stewardship in all its visitors.

Conclusion

The Sassafras River Agriculture and Ecology Center, through the vision and leadership of former U.S. Congressman Wayne Gilchrest, is poised to be a showcase for ecological and agricultural education and recreation on the Eastern Shore of Maryland. Through collaboration with the Chesapeake Ecofinance Company, as well as state and local partners, the Sassafras River Center will be a model that demonstrates how agriculture on

the Eastern Shore can be sustained in a manner that coexists with wildlife protection, recreation, land conservation, and a healthy Chesapeake Bay. The greatest strength of the Sassafras River Center is its desire to fold the agrarian history of the region into the need to preserve and protect the land and ecosystems to ensure the long-term viability of the very industry that has sustained this region for centuries.



Appendices

Appendix A: Hunting Seasons Calendar 2009-2010

Appendix B: Lodging Near Sassafras River Agriculture and Ecology Center

Appendix C: Soil Map

Appendix D: Sassafras Natural Resource Management - Land Unit Plan

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