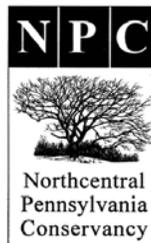
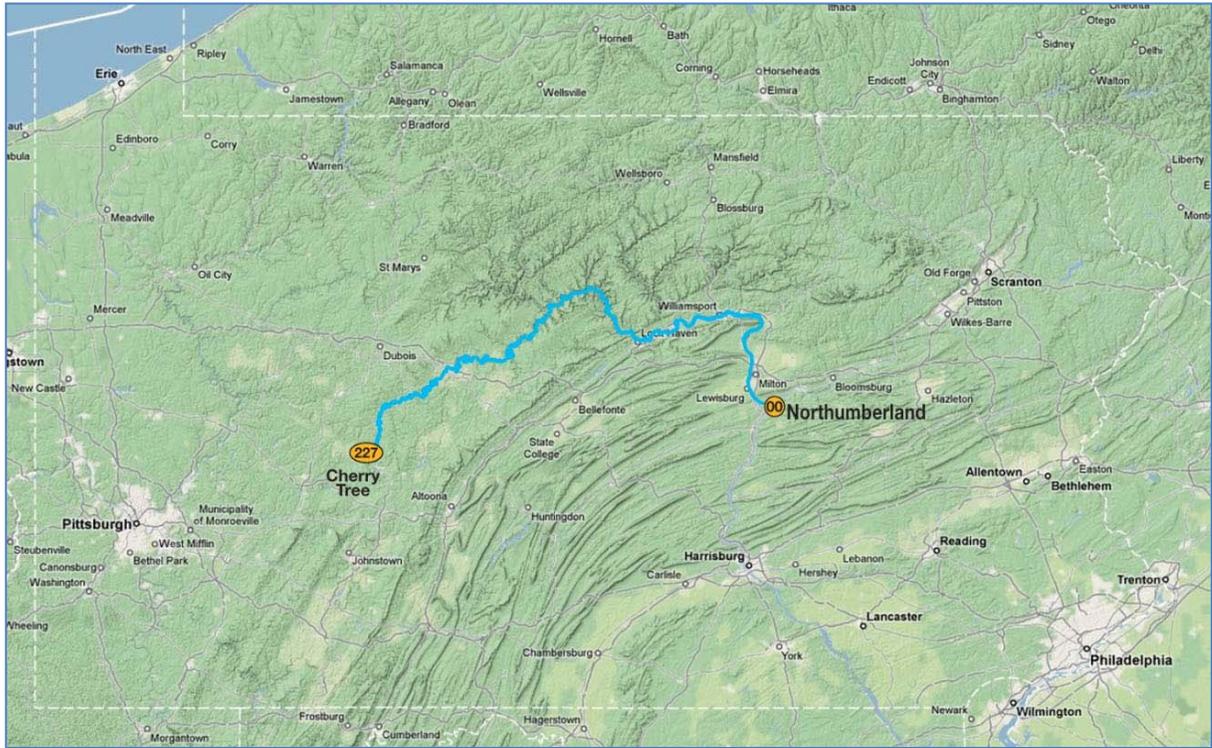


Susquehanna River Water Trail-West Branch Stewardship and Conservation Plan

August 2009



This project was financed by the Chesapeake Bay Gateways and Watertrails Network and a grant from the Community Conservation Partnerships Program, Environmental Stewardship Fund under the administration of the Pennsylvania Department of Conservation and Natural Resources, Bureau of Recreation and Conservation.

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List of Acronyms Used in the Plan

ACOE	Army Corps of Engineers
AMD	Abandoned Mine Drainage
BOF	Bureau of Forestry, Department of Conservation and Natural Resources
CBGN	Chesapeake Bay Gateways and Watertrails Network
DCNR	Pennsylvania Department of Conservation and Natural Resources
DEP	Pennsylvania Department of Environmental Protection
NPC	Northcentral Pennsylvania Conservancy
NPS-RTCA	National Park Service Rivers, Trails & Conservation Assistance Program
PennDOT	Pennsylvania Department of Transportation
PEC	Pennsylvania Environmental Council
PFBC	Pennsylvania Fish and Boat Commission
PGC	Pennsylvania Game Commission
SEDA-COG	Seda Council of Government
SGP	Susquehanna Greenway Partnership
SRBC	Susquehanna River Basin Commission
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service

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Great ideas beyond the scope of this plan:

These ideas were generated during the public participation process, however they do not fit within the scope of this Stewardship and Conservation Plan. Rather than lose the ideas, they are listed here for use by those organizations and individuals that can use them to further their efforts along the Water Trail.

1. Develop working relationships with landowners and managers; secure, develop, and improve the following camping opportunities: RM33-30, RM27-24, RM 21-19
2. Contact school districts regarding opportunities for them to develop programming utilizing the Water Trail in conjunction with regional historic sites and ecological features.
3. Contact Norfolk Southern Railroad to explore possibility of special event rail excursions for paddlers and boats – especially in conjunction with controlled release of water from the Curwensville Dam.
4. Coordinate with: Susquehanna Greenway Partnership, Pennsylvania Wilds Planning Team regarding their developing signage guidelines, and DCNR Bureau of Forestry regarding their pilot project for camping signage.
5. Support local business and tourism promotion agencies to promote and market the Water Trail. Develop brochures for self-guided tours of local features and points of interest to better interpret the natural and cultural resources of the river regions.
 - a. Significance of American shad to early American settlement.
 - b. Heritage of the region as related to the canals, railroads, and lumbering era.
6. Develop connectivity from river towns to the Water Trail; promote the concept of them being a 'trail town'.
 - a. Provide information about local points of interest.
 - b. Provide means for securing boats while paddlers visit town.
7. Support local businesses and the regional tourist promotion staff who develop events that utilize the regional recreation areas and river accesses to support the local economy.

Steering Committee Members and Contributors:

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John Wasserman	Western Clinton County Recreation Authority
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Amy Wolfe	Trout Unlimited Abandoned Mine Program

1.0 Project Overview

1a. Project Purpose

This project was designed to further the development and sustainability of the Water Trail by creating a plan for maintenance of existing and future facilities, identifying the needs at existing access sites and water trail related points, and deciding if there is a need for additional access points. We completed site evaluation forms to create a benchmark of existing conditions and to serve as guidance for identifying trail and facility needs. These forms can also be used by the Water Trail Manager to prioritize long-term maintenance needs.

The development of a volunteer-based stewardship plan is intended to provide guidance for volunteers and organizations taking part in restoration, conservation and maintenance activities on the Water Trail. By providing planning tools for guidance and clearly defining roles and tasks for volunteers (intended to clarify expectations) we hope to increase the level of volunteer activity on the Water Trail. Four case studies were also developed as part of this project to provide specific examples of site improvements that could be implemented by volunteers, and interpretive data that links past and present use to the health of the Chesapeake Bay has been included for these four sites.

1b. Background

While the West Branch Susquehanna River has served as a transportation corridor and water trail for thousands of years, the past nine years have been critical in developing an organized water trail. In 2000, North Central Pennsylvania Regional Planning and Development Commission (NCPRPC) submitted a nomination to designate the Susquehanna River Water Trail-West Branch (Water Trail) as part of the Chesapeake Bay Gateways and Watertrails Network. One of the objectives was to gain assistance and be eligible to apply for funding from the Network. The Gateways Network nomination was accepted. Later that year NCPRPC received grant funding to prepare a Water Trail map and guide and develop orientation signage for the Water Trail. The following year they received funding for additional orientation signs and printing of the Water Trail map and guide.

Three thousand copies of the Susquehanna River Water Trail-West Branch Map and Guide (Map and Guide) were printed in fall 2004. In December 2004 the Lumber Heritage Region announced their plans for marketing and sale of the map and guide. At that time, Dave Lange of the National Parks Service Rivers and Trails Program (NPS-RTCA) facilitated discussion with the project steering committee about creating a stewardship and management plan for the Water Trail, but the project never moved forward.

Through additional efforts of the NPS-RTCA a website for the Water Trail was created to assist in raising awareness of the Trail. In the summer of 2005 the Susquehanna River Water Trail system was recognized by the American Canoe Association as one of the top 12 recommended Water Trails in the country.

In 2007 the Northcentral Pennsylvania Conservancy (NPC) submitted grant applications to the Pennsylvania Department of Conservation and Natural Resources (DCNR), and the Chesapeake Bay Gateways Network (CBGN) for preparing a stewardship and conservation plan for the Susquehanna River Water Trail-West Branch. That same year the Susquehanna Greenway Partnership signed a memorandum of understanding with the Chesapeake Bay Gateways and Watertrails Network to serve as the Water Trail Manager of record. (Appendix D)

It is important to note that the Commonwealth of Pennsylvania has already invested time and resources into portions of the Water Trail through the Pennsylvania Wilds initiative, the Lumber Heritage Region, and the Susquehanna Greenway Partnership. The Pennsylvania Wilds is a region in the north central/north western part of Pennsylvania that contains more that 1.5 million acres of state forest and game lands, with diverse opportunities for exploring the great outdoors including: state parks, a national forest, the Pine Creek Gorge, the largest elk herd in the Northeast and the darkest skies in the East (at

Cherry Springs State Park). The Lumber Heritage Region encompasses over 12,500 square miles of central and north central Pennsylvania. This organization serves to “preserve, relate and enhance the history and heritage of the people and their relationship with the Pennsylvania Forests,” by providing opportunities to learn about the historic lumbering era as well as today’s sustainable forest practices. The Susquehanna Greenway Partnership is a statewide effort to develop a greenway along the Susquehanna River and its West Branch. The group works to “connect communities...through enhanced recreation, healthy living, economic prosperity and environmental stewardship.”

1c. Goal and Objectives

The project’s goal is to prepare a plan that identifies current and future needs, with recommendations for actions to protect the continued viability and long-term sustainability of the Water Trail.

In order to achieve this goal, the following objectives must be met.

1. Develop a baseline of conditions for monitoring the Water Trail and evaluate what is currently needed for sustaining the existing Water Trail.
2. Identify the improvements to enhance the Water Trail experience and help expand Water Trail user base.
3. Develop a long-term management strategy for the Water Trail sustainability that is compatible with the resources of the region
4. Identify partners for implementing the management strategy
5. Illustrate how to improve river access sites in bay-friendly ways, and provide information and steps for implementation using four (4) case studies.

1d. Project Approach

The Northcentral Pennsylvania Conservancy (NPC) is a non-profit land conservation organization that conserves working farms and working forests in Northcentral Pennsylvania. The organization began its involvement in river related projects by facilitating development of the Lower West Branch Susquehanna Rivers Conservation Plan. That effort has resulted in numerous recommendations being implemented by partners ranging from individual landowners, local municipalities, and local colleges and universities.

NPC also participated in development of the Middle West Branch Susquehanna River Conservation Plan. The Pennsylvania Environmental Council facilitated the planning process, and wrote the Plan.

These two past planning efforts on the West Branch Susquehanna River allowed NPC to develop relationships with various stakeholders along the West Branch. Because of this experience, NPC was encouraged to apply for grant funding to develop a stewardship and conservation plan for the Susquehanna River Water Trail-West Branch.

The project began with an inventory of existing features to develop a baseline of current conditions. Existing studies and plans that included the river corridor were reviewed as related to conservation and stewardship of the Water Trail. The Project Steering Committee was used as a sounding board as analysis was completed and recommendations developed. This plan does not intend to duplicate previous efforts, but build upon them to sustain and enhance the Water Trail.

1e. Public Participation

In order for any Plan to be implemented, it needs to be developed with input and participation by the individuals and groups who will use the plan and implement the recommendations. To engage the public and identify interest and concerns a Steering Committee, comprised of individuals from throughout the corridor with knowledge of the river and an active interest in the Water Trail was formed. The individuals participating on the Committee are listed at the beginning of this document. They represent landowners (public and private), river users, business owners, and community planners.

Because of the length of the West Branch, and the period of high gas prices during the summer of 2008, the Steering Committee meetings were often held as a series of meetings along the corridor focused on the same topic, rather than a single meeting on that topic. Typically meetings were held in Clearfield, Lock Haven, and Watsonstown.

A questionnaire and key person interviews were used to help further identify perceived interests and concerns as related to stewardship and conservation of the Water Trail.

The questionnaire (see appendix A) was designed to gather input and information from people familiar with the Water Trail. Distribution was by e-mail, with the request that those receiving the questionnaire forward it to friends and colleagues who also use the River or are familiar with the Water Trail. Distribution began September 5, 2008 with questionnaires due September 23, 2008 (seventeen were received); a second distribution began February 5, 2009 with questionnaires due by February 23, 2009 (one additional was received). At total of eighteen (18) completed questionnaires were received.

Key persons throughout the corridor were contacted by phone. The sampling included river access site owners, managers, and river-related business owners. Through this process the following were identified relative to the Water Trail: valued resources that should be conserved, user preferences for site amenities, and potential local stewards to promote a sense of ownership and engage the public to actively care for the natural resources.

Face to face meetings were also held with governmental agencies that own or manage land along the River. These meetings were used to discuss their Water Trail needs, issues, and opportunities relative to their missions and land holdings. Representatives from the Army Corps of Engineers (ACOE), the Pennsylvania Fish and Boat Commission (PFBC), Pennsylvania Department of Conservation and Natural Resources Bureau of Forestry (BOF) and Bureau of Recreation (BRC) and Conservation, Pennsylvania Department of Environmental Protection (DEP), and the Pennsylvania Game Commission (PGC) were included in these meetings.

Learning from other individuals and organizations about their success and challenges is important in any planning effort. Their "real life" experience adds insight and can help prevent repeating mistakes. NPC worked together with the Pennsylvania Environmental Council (PEC), to hold a Water Trail working session in April 2008. This session allowed water trail managers, volunteers, and users to gather together and share ideas, information, and concerns. The focus was kept on water trails in general, and individuals from surrounding states attended to share their experiences and learn about what was working in Pennsylvania. More information and the results from the Water Trail Working Session can be found in Section 5.

Using the information gathered during the site inventories, an analysis of existing Water Trail conditions was compared to the expressed and observed needs. The Steering Committee then assisted in developing recommendations for improving or enhancing current conditions. These recommendations are based on site considerations, community needs, community capacity and river character. Community capacity refers to both the communities' ability to manage improvement projects (secure funding, manage the construction project, etc.) and to sustain maintenance of the improvements (are their funds and manpower in place to maintain existing and new improvements).

Existing models for trail management were reviewed and discussed with the Steering Committee. Using a combination of research, comments received, and the available resources of the region, recommendations were made for providing structure to the on-going Water Trail efforts. As part of this structure management roles and expectations for active participation are defined and a maintenance guidance checklist is included to assist maintenance volunteers. Based on previous contacts, information received in the questionnaire, and Steering Committee guidance, a list of partners for implementing the management strategy is included.

Information gathered from the Steering Committee members, key person interviews, and site inventories was used to identify and develop four case studies to demonstrate how to apply the Chesapeake Conservation Landscaping Council's "Conservation Guidelines" for bay-friendly site development at river access sites.

2.0 Current Status of the Water Trail

2a. General description of corridor

The Susquehanna River Water Trail-West Branch (Water Trail) passes through Pennsylvania for a total of 227 miles, with diverse river character and landscapes. This magnificent river begins as a small stream that meanders through the Appalachian Plateau, it cuts an incised winding path through the North Central Appalachian Mountains, and then moves from the narrow mountain valley and cuts through the Allegheny Front into the Central Appalachian Ridge and Valley province. Both the surrounding landscape and the river itself changes in character as it drops 1800' in elevation from its headwaters in Carrolltown, Cambria County to the confluence with the main stem of the Susquehanna River in Northumberland, Northumberland County. The Water Trail offers an opportunity to travel with this great river and experience the diversity that the river and the distinct regional landscapes have to offer.

The upper reach of the Water Trail starts downriver from Carrolltown in Cherry Tree, Indiana County where the river begins to be navigable, and extends to the Borough of Clearfield in Clearfield County. This region of the river has a relatively small to moderate-sized streambed that flows through rural landscapes and communities that are rich in rafting and lumber heritage. Spring river flows offer segments of challenging rapids, and low summer flows offer peaceful floats in canoes and kayaks. From Lumber City to Shawville there are reports of excellent fishing in the river. This river section also supports eagles, osprey, and heron. There is a large flood control dam that creates an impoundment pool at the Curwensville Recreation Area, which provides a variety of fishing and motor boating opportunities.

The middle reach of the Water Trail is characterized as a moderate-sized streambed that flows through small communities and remote stretches of northern Pennsylvania forests. This segment extends from Clearfield Borough to Lock Haven, Clinton County, with the river flowing through a narrow valley with steep, forested mountainsides. These forests were denuded of trees during the 19th Century lumber boom; today, thanks to years of conservation and management they are a green jewel in north central Pennsylvania. The Water Trail experience here is primarily characterized as wilderness, with up to 20 miles between small communities. There are long stretches of Water Trail where the only sign of human development is the railroad that parallels the river in this deep, narrow valley. According to the *West Branch Susquehanna Subbasin AMD Remediation Strategy* the reach 'from the entry of Clearfield Creek to Williamsport, Lycoming County' is one of 'two main stretches of the West Branch Susquehanna River significantly influenced by AMD.' In spite of this water quality impairment in the region, based on comments received and observations of use at access points, it is one of the most popular sections of the Water Trail for paddlers. This remote stretch of river offers varied wildlife and bird species, scenic mountains, and exciting rapids; it is highly valued for the wilderness experience that it offers.

The lower reach of the Water Trail provides yet another river character for the Water Trail user to experience. From the City of Lock Haven to the community of Northumberland the river in this region emerges from the mountain wilderness. Here it flows in a wide riverbed through a mix of rural agricultural lands dotted with river towns and moderate-sized urban centers. The communities of this region each have their own set of stories to tell. Between these communities the Water Trail corridor has a landscape characterized by a broad river valley with surrounding farm fields, rolling hills and forested mountains. There are three impoundment areas that create pools for motor boating in this region; the Grant Street Dam at Lock Haven, the Hepburn Street Dam at Williamsport, and the Adam T. Bower Memorial Dam at Sunbury. Elevated nutrient and sediment levels in this region of the river contribute to reduced water quality. These increased levels can be attributed to inadequate sewage treatment, outdated agricultural practices, and unchecked stream and floodplain erosion.

2b. Public interests and concerns

In order to better understand public perception of the river we obtained guidance from a Steering Committee, reviewed comments from public meetings for the Middle and Lower West Branch Susquehanna Rivers Conservation Plans, conducted key person interviews, and used a limited distribution questionnaire (see Appendix A for tabulation of questionnaires). This public input and field documentation were used to determine the key issues for stewardship and conservation of the Water Trail.

Most valued assets of the Water Trail

In planning we often look at what needs to be improved and changed, but do not acknowledge what people already enjoy about an asset. It's important to note that during development of this Plan, people indicated that they appreciate the remote sections of the Trail and the wilderness experience those sections provide. Another valued aspect of the Trail is the scenic and natural beauty of the area. Other comments indicated that the diversified water experiences, from broad valleys with calm pools to narrow ravines with white water challenges, add to the enjoyment and experience of the Trail. Consideration should be given to these characteristics and assets as changes and improvements are planned.

In addition to paddling, fishing is a valued sport on this trail, and is reportedly improving as water quality issues are resolved (see conservation and stewardship challenges below for more discussion). People also noted the cultural and historical experiences of the region offer added interest, and present opportunities for promoting the Water Trail to a more diverse market.

Improvements needed to the Water Trail

Respondents to the questionnaire and key persons interviewed were asked to comment on the improvements needed to access sites and to the Water Trail in general. Comments that were received for specific access sites were incorporated into the recommendations as part of the detailed inventory and analysis in Appendix B.

In general, more river access sites are desired near the populated areas so that people can paddle in the limited time they have after work. People are looking for both shallow and deep water access. Eleven of the 39 access sites are privately owned, with only verbal consent for public use of the river access. To ensure that there continues to be adequate access along the Water Trail, long-term public access needs to be secured at these sites.

Restrooms:

Another point made was the lack of consistency between access points; this related to both the facilities/amenities available to site visitors and the level of maintenance provided. Comments received noted the fact that not all sites have restrooms. The Steering Committee discussed the issue of restrooms and indicated that it would be desirable to have restrooms at heavily used sites near larger communities, but they did not suggest restrooms at all access points. This would detract from the wilderness experience that many people seek, and increase the maintenance needs at these sites. Consensus of the Steering Committee was that lack of restrooms in remote areas is acceptable, but that information regarding the lack of restroom facilities needs to be communicated to manage Trail user expectations. The landowner's decision of whether or not restrooms are needed at a site should take into consideration the level of use of the access site, the level of maintenance available, the landscape position, and character of the area.

Camping:

The Water Trail Map and Guide shows seven (7) camping areas (one is more than a one mile drive away) for the entire 227 mile Trail. This includes both designated camping areas on public land as well as privately owned campgrounds. Based on their own observations, the Steering Committee supports the suggestion that more camping is needed, especially in the remote areas where access to the Trail by roads is limited.

Camping opportunities should be considered when the distance between access points exceeds reasonable travel for a single day. This distance will vary throughout the Trail, depending on local flow conditions. Access points in communities where overnight accommodations are available should include signage directing river users to those businesses. There was also interest expressed in having camping for multi-day river trips. Opportunities for this could be explored where landownership is conducive and local capacity exists to address the added maintenance.

As camping areas are being planned, the added maintenance needed at those sites should be factored into the decision. Regular site visits will be needed to evaluate the human impact at the site, ensure any fire rings are in good working condition, and that human waste is being properly handled. Many other water trails have had success with island camping. However, a substantial number of the islands in the West Branch are privately owned, and those in public ownership are not necessarily suitable for camping.

Presently there are conflicts with people camping on Fish and Boat Commission and State Game Lands. Both of these property owners prohibit camping on their land. The Bureau of Forestry (BOF) does allow camping utilizing the Bureau's "Primitive Camping Guidelines and Ethics" and "Guidelines for Establishing Water Trail Designated and Island & Lakeshore Campsites". No camping permit is required for paddlers. Much of the BOF land suitable for camping is separated from the River by the Norfolk-Southern Railroad. The Railroad has liability concerns about river users crossing the tracks, so they only permit the public to legally cross tracks at designated Public Utility Commission crossings.

These limitations on available camping sites and the impairment of water quality from acid mine drainage have a net effect of concentrating campers at the mouth of non-impaired tributary streams. While concentrating the camping activity can be useful for some purposes, it also compounds the impact on the natural resources at these sites. It is believed that the publicly owned river islands could provide some additional camping opportunities to relieve pressure from these other locations.

Portages:

There are four (4) dam portages required along the Water Trail, with a fifth noted as an optional route for paddlers not wanting to traverse the Chest Creek rapids. Throughout the corridor there is no consistency relative to signage, the condition, or ease of use of portages. There is a need to address these relative to both safety concerns and securing public access where needed to exit and enter the river. Where portage around dams is required, encouraging users to follow PFBC safety standards is critical. "The exclusion zone ordinarily will extend 200' upstream from the dam breast and 100' downstream from the boil of these dams." (*Sign and Buoy Guidelines for Run-of-the-River Dams*, Pennsylvania Fish and Boat Commission website.) Water Trail portages need to be marked in adherence to these standards to ensure safety of trail users.

Conservation and Stewardship challenges

The West Branch Susquehanna River has served as a transportation corridor for thousands of years. The issue of how to steward and conserve the Water Trail is not new. Working to develop a unified network to assist with the care and maintenance of the Trail's access points and features is new.

The principal stewardship and conservation challenges for the Water Trail are: water quality, aquatic habitat, water quantity, unified management and maintenance, litter, and signage.

Water Quality:

The public input process indicated that the public perceives improving water quality as an important issue facing the Trail. Specifically, the need for remediation of abandoned mine drainage (AMD) and restoration and management of fish habitat was identified. The historic coal extraction in the West Branch Susquehanna River Sub-basin has left a legacy of impaired streams. Heavy metals, low pH, aluminum and iron all leach out of improperly closed deep mines or reclaimed surface mines. The contaminants then flow into streams and ultimately the river. Once in the water system, the contaminants limit or prevent aquatic life from inhabiting the impacted system.

According to the Susquehanna River Basin Commission the two sections of the West Branch Susquehanna River most impacted by AMD are from the headwaters (Cambria County) to Mahaffey (Clearfield County) and from Clearfield Creek to Williamsport (Lycoming County) (SRBC Publication 254, 2008). Trout Unlimited (TU) is the organization leading and coordinating efforts to remediate these AMD impacts through the West Branch Susquehanna Restoration Coalition. TU provides organizational support to this group, which represents the collective efforts of watershed groups, Trout Unlimited chapters, county conservation districts, businesses and others throughout the subbasin.

Each of the Pennsylvania counties in the Chesapeake Bay watershed have been required to develop a plan for addressing their county's impacts on the Chesapeake Bay's water quality. Review of the Chesapeake Bay Tributary Strategy plans revealed that siltation, sediment deposition and erosion are issues throughout the entire corridor. Primary sources of this erosion include land disturbance for construction, agriculture, gas and mineral extraction, timbering, and stream bank degradation. In the upper reaches of the Trail, enough sedimentation has deposited in the River at Cherry Tree that it is limiting, often prohibiting, navigation of this River stretch. From Cherry Tree to Patchinville erosion of the steep banks has created major blockages in the river, including fallen trees and other debris. The United States Fish and Wildlife Service (USFWS) was contacted about this problem and the Plan recommends actions to improve the situation.

Additional sources of water quality impairment throughout the corridor (extents vary by county) include nutrient leaching/runoff from farms and fields, small residential/urban storm water, atmospheric deposition and improper disposal of human and industrial wastes. Chillisquaque Creek, a tributary entering the River below Milton is often listed as one of the top five most impaired streams in Pennsylvania because of the agricultural impacts of sediment and nutrients. Aging sewage treatment plants are handling more stormwater than anticipated and often have instances where water bypasses treatment, or is not treated for the full amount of time needed.

The Water Trail Guide cautions potable water is available only at a limited number of sites. The Trail Guide recommends that drinking water should either be carried or purified, understanding that common methods for purification available to trail users may not remove other contaminants such as heavy metals.

Aquatic Habitat:

AMD impacts go beyond the desire for clean water to use for recreation. The West Branch Susquehanna Watershed Facts compiled by TU report that "water quality degradation from abandoned mine drainage is the only factor limiting or eliminating healthy fish populations in the polluted streams of the West Branch, since nearly 90% of the river basin has been documented as containing excellent or supporting in-stream habitat for fish." Once the low pH, heavy metals, iron and other contaminants are removed (and some time passes), the streams recover and aquatic life re-establishes itself.

Another source of pollution that degrades fish habitat in specific areas is industrial thermal discharge. If an industry discharges water into the River that is too warm for the aquatic life present, the aquatic life either leaves or is killed. Thermal pollution can also occur when riparian banks are cleared and too much direct sunlight is allowed on the river surface. Many aquatic species prefer the shady edges and banks of waterways.

Even with all of these impacts, fishing opportunities still exist on the River. This is due to the many AMD treatment and water quality improvement projects being done and the numerous un-impacted tributaries that provide high quality water for dilution of the pollution. In the 2005 PA Code Chapter 93 Stream Designation, the West Branch Susquehanna Sub-basin contained 1,249 miles of Exceptional Value streams (the highest classification a stream can obtain), 5,229 miles of High Quality Cold Water Fisheries, 73 miles of High Quality-Trout Stocked Fisheries and 339 miles of Trout Stocked Fisheries.

Water Quantity:

Recent droughts and consumptive water uses by industries have people concerned about maintaining adequate water quantity in the River. There is concern that increased water withdrawals from the West Branch Susquehanna River Basin will reduce water flow in the River to a degree that further concentrates pollution and negatively affects the navigability of the Water Trail. Several Steering Committee members mentioned a specific concern related to the water withdrawals associated with Marcellus shale gas drilling which is occurring in the northern portions of Susquehanna River Basin. The Susquehanna River Basin Commission oversees water withdrawals in the Basin and is aware of the public's concern.

Interest has been expressed in pursuing the possibility for scheduled releases of water from the Curwensville Dam during periods of low flow. Scheduled releases could help stressed aquatic habitats in mid-summer and provide additional flow to assist with summer navigability.

Unified Management and Maintenance:

The Maps and Guides were developed to provide Water Trail users with information on where and how to safely use the Trail. However, there is presently no organizational structure for maintaining the long term sustainability of the Trail.

Currently, the landowner (whether public or private) is responsible for maintenance of river access and campsites and either performs it directly or secures assistance. Many of the public landowners (i.e. PFBC, DCNR, and PennDOT) are involved in a statewide working group discussing water trail issues and are already working to learn more and share information. Many of the private landowners are doing the best they can with the resources they have. Their efforts have allowed the Water Trail to be enjoyed for years.

There are differences between the challenges found and the maintenance needed at river access points, as compared to land based trails or land based recreation areas. One example is invasive species. While 'invasives' are present throughout Pennsylvania's recreational assets, the wooded floodplains of access areas are particularly prone to their establishment. The combination of erosive forces of high water events and the River's ability to transport seeds and rhizomes for propagation, provides excellent opportunities for the spread of invasive species. Additionally, the proximity to a body of water makes treating vegetation with herbicides more difficult and challenging.

By developing a stewardship network, managers and stewards of these sites could work together in a variety of ways to benefit not just their section of the river, but the overall Trail system. A unified network of stewards could share equipment to reduce costs. Supplies and materials could be cooperatively bid together to save money. Expertise could be shared to help improve maintenance efficiency and prevent others from hard-learned mistakes. Collectively, protocols could be reviewed and developed to provide a level of consistency for maintenance of river mile sections and access sites.

While much of this discussion has focused on maintenance of river access sites, it is important to note that the river corridor is just as important. The initial focus has been made on access sites because most of them are publicly held lands and/or have landowners that allow public use of their property; this will be a critical factor as stewardship efforts progress. When volunteers agree to adopt an access site ideally they will also adopt the next downstream segment of the river. However, we recognize that there may be volunteers that do not paddle but would be willing to adopt an access site, and individuals that paddle and would be willing to adopt just a river segment. This discussion is not intended to limit either of these opportunities or diminish the importance of maintaining river segments.

By tracking maintenance needs and activities, an organized network of Trail Stewards could record changes in the corridor, monitor use of the trail, develop and maintain primitive camping, and document areas needing improvement. This information would also assist in determining if (or when) there is a need to manage use on the river to protect the resource.

Litter:

Litter continues to be a problem throughout the corridor. Several members of the Steering Committee reported that they perceive the amount of new/ recent litter is decreasing. During recently organized river cleanups several members noted that more “old” litter than new has turned up; the litter’s age being reflected by the pull-tab cans and glass soda bottles being collected.

This is great news, and the hope is that the trend will continue. However, there is a need for public cleanup activities already underway to continue. There may also be need for additional clean ups throughout the corridor. Each new high water event brings new litter to the river and down the river. These events are not just important for improving the environmental quality of the river, but are also a way to engage more citizens and raise awareness of the water trail.

Signage:

There is consensus among the Steering Committee members (and others) throughout the region that improved, consistent signage for the Water Trail is needed. While people who frequently use the River can find the access points, understand where launch permits are required, and know what facilities are available at the site, this is not always easy for those unfamiliar with a particular access. PFBC and BOF have both changed their sign styles over the years, but do not update all their signs when changes are implemented. For example, the sign directing river users to a PFBC access in Loyalsock Township may be a carved, wooden sign, while the sign for the access at Chillisquaque Creek is a blue metal sign that is standard PennDOT issue. It is understandable that upgrading all the signs at one time could be cost prohibitive; however, it can also be confusing and frustrating for river users who miss the sign they are looking for because they are focused on looking for a specific type of sign.

The Lumber Heritage Region, Pennsylvania Environmental Council, and the Susquehanna Greenway Partnership have created informational signs for use at river access sites. These signs provide information about the cultural and historic resources in a river stretch, as well as information about safe behavior while on the water and any known hazards. Costs prohibited the signs from being placed at all access sites. Since much of this information can help raise awareness of River users and help them enjoy their River experience, additional sites should be considered during future signage projects.

Through other CBGN projects SGP has evaluated existing water trail orientation and safety signs and made recommendations for improved design and placement. SGP is also developing signs to be used throughout the Susquehanna Greenway for way-finding and interpretation with funding from DCNR and DCED.

During the public input process it was noted that signage along the River to help paddlers and boaters with orientation could also be useful. Suggestions were to consider signage on bridges, or on islands. This would help people track their progress, and prepare for exiting the river. Many people go to the river to lose track of time, but understanding and keeping track of where you are on the river is important.

2c. Access Site Owners and Managers

The Water Trail Maps and Guides show 39 river access points, with many sections of the trail requiring the use of private lands for access. Of the 39 sites shown on the Maps and Guide, 11 of these are privately owned, 13 are owned by Commonwealth departments or commissions, and 15 are owned at a county or local government level. During the planning phase for the Water Trail Maps (2001-2003) individual landowners were contacted to seek consent for including their river access on the maps. Based on responses from this outreach, the Maps and Guides were finalized and printed in 2004.

As part of the development of the Stewardship and Conservation Plan (2008-2009) landowner information was updated and phone calls were made. Of the 11 privately owned sites, we were successful in reaching nine by phone. Conversations included questions about their willingness to continue the use of their land for public access, whether there have been any impacts to their land associated with Water Trail use, and what if any assistance is needed for the continued use of their land. With the exception of

two access sites, all landowners contacted were agreeable to having their properties continue to be indicated as Water Trail access points; some would even consider granting an easement for public use. Generally, landowners have not had problems from people using the Water Trail, but have occasional issues with littering and parking. All landowners said they would welcome assistance from volunteers for general site upkeep and occasional site cleanups – especially after high water events.

Throughout the corridor each landowner uses their own discretion regarding the level of maintenance they perform for their site; without guidelines or protocols for maintenance of access sites there is no level of consistency throughout the corridor. It would be beneficial to develop educational information for site owners and managers regarding the identification of invasive species, the use of native plants, and the function of vegetation as river bank stabilization. Developing guidelines for access site maintenance would assist with more consistent levels of care along the Water Trail. Organizing a system of local volunteers/stewards to assist private landowners would foster stewardship and build working relationships for Water Trail sustainability.

2d. River access site inventory and analysis of existing conditions

As part of this Plan, an inventory and analysis of the access sites that are shown on the Maps and Guide was performed. The purpose of the inventory was to create a baseline of existing conditions for evaluating needs, and tracking future improvements. The inventory information was gathered using a worksheet, as shown below. A summary of the site inventory data is tabulated following the blank worksheet. This information is organized starting from the beginning of the Water Trail at river mile 227 in Cherry Tree to river mile zero (0) at the confluence with the Main Stem of the Susquehanna River in Northumberland. Analysis was performed for each site, noting observed site conditions (not an engineered analysis) and making specific recommendations for each access site. More detailed analysis can be found in Appendix B.

Note: Comments relative to access site compliance with ADA Guidelines for Universal Accessibility is based on visual observations of obvious barriers, apparent slopes, and irregular surface conditions. No detailed engineering analysis was conducted. Before any improvements are made, studies should be performed to verify site specific ADA compliance needs.

Water Trail Access Site Inventory												Date	Performed By												
Susquehanna River Water Trail-West Branch												River Mile	Access Name												
Stewardship and Conservation Plan												Site Photos													
Northcentral Pennsylvania Conservancy																									
Boat Ramp Surface		Parking		ADA	Trailer Spaces	Parking	Buffer %		Lighting	Building	Riverbank Stability		Drinking Water	Restroom	Phone	Electricity	Signage	On-site Camping	Pavilion	Picnic Tables	Benches	Solid Waste	ADA	Trails	Play Equip
S	Co	S	Co	#		Ca	Sh	L			S	Co													
<i>S: Surface</i>				<i>Co: Condition</i>				<i>Buffer:</i>				<i>Restroom:</i>				<i>Signage:</i>				<i>ADA</i>					
Gr – Gravel				E-Excellent				Ca-Canopy				P-Porta				D-Directional				G-good					
C-Concrete				G-Good				Sh-Shrub				S-Sewer				H-Historic				F-fair					
CP-Concr Plank				F-Fair				L-Lawn				Sh-Shower				I-Informational				P-poor					
A-Asphalt				P-Poor				NA-Not Applicable				L-Limited Use				L-Location									
BS-Bare Soil																R-Roadway									
R-Rock																WT-NewWtrTrail									
												<i>Riverbank:</i>				<i>Solid Waste:</i>									
												BS-Bare Soil				D-Dumpster									
												R-Rock				R-Recycling									
												V-Vegetation				C-Can									
												P-Paved													
Bank Condition/Erosion												Parking Buffer													
Canopy/Shrub/Lawn												Site Suggestions													

Summary of Site Inventory

Northcentral Pennsylvania Conservancy

Susquehanna Water Trail, West Branch
Stewardship and Conservation Plan

River Mile	Boat Ramp Surface		Parking Area			ADA Spaces			Trailer Spaces		Parking Buffer %		Lighting	Building	Riverbank Stability	Co	Drinking Water	Restroom	Phone	Electricity	Signage	On-Site Camping	Pavilion	Picnic Tables	Benches	Solid Waste	ADA	Trails	Play Equipment	
	S	Co	S	Co	#	Co	S	Ca	Sh	L	Ca	Sh																		L
227	C	G	GR		X		10		90	X					V	F					HLWT		X	X			G			
217	BS	F	GR	G	X			NA							V	F											P			
209	BSR	G	GR	F	X			NA						X	V	G					HL			X			P			
207	BS	F	GR	F			15	65	20						V	F		L		X		X	X	X	X	P		X		
204	BS	F	BS	P			70		30						BSR	F	X	P	X	X	L	X	X				P			
187c	BS	G	GR	G				40	60						V	E	X	S		X	HLWT	X	X	X	X	F		X	X	
187m	C	E	A	E	X	X			100	X	X			X	RV	E	X	S		X	HLWT	X	X	X	X	G		X	X	
185	R	G	GR	G	X		40		60	X	X			X	R	E	X	S		X	HL		X	X	X	P		X	X	
174	C	E	A	F	X		50		50	X	X			X	P	G				X	HIL		X	X	X	G		X	X	
163	BS	G	A	G			10	20	70	X	X			X	V	G	L			X			X		X	P				
162	BSR	F	GR	F			25	60	13						V	G									X	NA				
149	BS	F	GR	G					20						BSL	EG											F			
143	BSR	F	R	FP			30	40	30						BS	F				X							P			
132	CP	F	GR	G			75	25							RV	F		P			L		X			F				
110	BS	F													RV	F											P			
97	C	F	GR	F	X	2	5	95							V	F					HL						P			

S: Surface
 Gr - Gravel
 C-Concrete
 CP - Conc.Plank
 A - Asphalt
 BS - Bare Soil
 R - Rock
Co:Condition
 E - Excellent
 G - Good
 F - Fair
 P - Poor
 X - Present
Buffer
 Ca - Canopy
 Sh - Shrub
 L - Lawn
 NA - Not Applicable
Riverbank
 BS - Bare Soil
 R-Rock
 V - Vegetation
 P- Paved
Restroom
 P - Porta
 S - sewer
 Sh - shower
 L - Limited Use
S: Signage
 D-Directional
 H- Historic
 I - Informational
 L - Location
 R - Roadway
 WT - New Water Trail
ADA (*)
 G - good
 F - Fair
 P - poor
 (*) ADA comments based on general site observations, not detailed analysis

Summary of Site Inventory

Northcentral Pennsylvania Conservancy

Susquehanna Water Trail, West Branch
Stewardship and Conservation Plan

River Mile	Boat Ramp Surface		Parking Area			ADA Spaces		Trailer Spaces		Parking Buffer %			Lighting	Building	Riverbank Stability		Drinking Water	Restroom	Phone	Electricity	Signage	On-Site Camping	Pavilion	Picnic Tables	Benches	Solid Waste	ADA	Trails	Play Equipment
	S	Co	S	Co	#	Co	Ca	Sh	L	S	Co	S			Co	S													
94	GR	G	GR	F			35	65							V	E					WT						F		
90	CP	G													VF						X						G		
70	C	E	A	F	3	36	10	20	70			X			V	F	X	S		X	H		X	X	X	G			
62	C	E	A	F	1	9			100			X			V	F		P			HL		X			F			
55	A	P	A	P	1				NA						V	F					H					P	X		
53	BS	F													V	G		LSH		X		X				F			
45	C	E	A	E	2	45						X			RV	G		P								F			
42	C	G	A	E	2	15	40					X			RV	G	X	S		X	L		X	X	X	G			
37	C	G	A		1	25	50	20	30			X			RV	F		P			LWT		X	X	X	F	X		
35	C	F	GR	P		8	30	10	60			X			V	FP		P			H		X	X	X	F			
27	C	E	A	F	1	19	20		80						V	G					L					G			
23	CP	F	A	F	8	9			100						V	FG		S			L					G	X		
22	BS	F					10	5	85						BS	FG	X	LSH		X	L		X	X		F	X		
18	AP	P					40	50	10						V	G										P			
16	BS	P	A	F	2				40	60		X			V	FG				X			X	X	X	NA			

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Buffer
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BS - Bare Soil
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P - Porta
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Summary of Site Inventory

Northcentral Pennsylvania Conservancy

Susquehanna Water Trail, West Branch
Stewardship and Conservation Plan

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	S	Co	S	Co	#	Ca	Sh	L	S	Co			S	Co													
15	CP	E	GR	F		2	30	20	50	X				RV	F			X	HL						F	X	
13	C	F					5	5	90	X	X		V	F	X	L		X		X				X	G	F	
11	C	E	GR	E	8			20	80		X	X	RV	G	X	S		X						X	G	X	X
7	BS	F	A	E									V	F					I				X		F		
5	C	E	A	F			50	30	20				V	F					HL						G		
3	C/L	E					N/A						V	E	X	L				X					NA		
0dC	C	E								X	X	X	R	E	X	S	X	X	L/WT		X		X	X	G	X	
0dM	C	E	A	F			10		90	X	X	X	R	E	X	S	X	X	L/WT		X		X	X	G	X	
0c	A/C	P	GR	F			10	10	80		VR		F												1C	F	F
0b	C	E	GR	F			10	15	75				R	E											1C	G	F
0a	BS	P	GR	F			30	10	60		X		BS	P				X	I		1	11	X	2	NA	NA	

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2e. Trail Gap Analysis

Currently there are stretches of the Water Trail that have limited public access. In some of the more remote areas this can be both acceptable and desirable, as it supports the remote experience that some paddlers seek. With the economic downturn that we are presently experiencing, many people have limited budgets and are choosing to recreate close to home. However, when there is limited access near population centers, time constraints can make those sections of the trail 'out of reach' for many paddlers, especially those with school-aged children. Additional public access should be pursued in these areas, to provide equitable access to various users, and to provide options for shorter trips and a variety of Water Trail experiences that are both reasonable to achieve and pleasurable.

During the key person interview process attempts were made to contact each of the access site landowners. All the landowners except for three of the non-governmental landowners were reached and interviewed. These conversations provided additional information about how access are being managed now, future plans, and areas where assistance is needed.

As a result of the conversations with landowners, there are four sites that should be removed from the Map and Guide. These sites will be omitted during the gap analysis.

The numbers in parenthesis at the end of the recommendation corresponds to the comments on the Corridor Recommendation Maps (see Appendix E).

Remove the following access sites from the maps:

RM (217) Burnside Municipal Access (future)

County assessment data does not indicate this to be publicly owned, and landowner of record was unable to be contacted for their consent for public use of their property. (1A)

RM (163) Shawville Grocery (private)

This landowner has given verbal consent for public use of their property, but the power plant has recently posted signs reading "Warning - water temperatures may be significantly elevated - proceed with caution." (4C)

RM (162) Millstone Run Access

This is a point of common use, but while the Map and Guide list it as Pennsylvania Fish and Boat Commission, the commission has no affiliation with this site. There are also thermal discharge concerns in this area of the trail (see 2 above). (4D)

RM (110) Keating Access (private)

The landowner of record was contacted, but would not provide consent for public use of their property. (7B) Because of the distance from Karthaus to the Flaming Foliage Access (Renovo) it will be very important to locate a permanent public access in this general area.

RM (55) Jersey Shore Borough Access (future)

This commonly used access traverses six (6) parcels of land. Conversations are underway with the current landowners seeking cooperation to make this a permanent public access. (11D)

RM (3) River Edge RV Campground (Private)

This is a family campground that has a private river access for the use of their patrons. Limited tenting sites are available by reservation, and this river access will remain available in conjunction with the use of those sites. (16A)

RM (0a) Pineknott Park Municipal Access

This is a river viewing area, not an access area. (16C)

During the development of this plan, a hand launch access was installed at Bells Landing (RM 200), and DCNR Bureau of Forestry has started design for an access near Baker Run (RM 83). These sites are included as part of the gap analysis.

The following access sites need to be added to the maps:

RM (200) Bells Landing Municipal Access (hand launch)

This was constructed in June 2009. (2D)

RM (83) DCNR-Bureau of Forestry Baker Run Site

Between Hyner and Lock Haven there is presently 20 miles of Water Trail without public access. DCNR-BOF is proposing the development of an access at this site. It's location would provide day-trip opportunities to nearby population centers. (9B)

Table 2.1 illustrates the gaps in the Water Trail, with the first column representing the mileage between access sites that are in public ownership. The second column shows the mileage between access sites if we include those that presently have verbal approval for public use. This table is useful in demonstrating the need to secure some form of agreement for long-term public use of these sites and to seek additional sites to serve a wider base of trail users near the regional population centers.

Table 2.1

Miles To Next Access Site		River Mile	Name	County	Township	Status
Secured / Developed	Verbal Consent / Planned					
18	18	227	Cherry Tree/Rt.580 Bridge	Indiana	Cherry Township	Public
10	2	209	McGees Mills	Clearfield	Bell Township	Private
	3	207	Mahaffey/Rt.36 (planned)	Clearfield	Mahaffey Borough	Public
	200 yards	Rough Portage	Chest Falls Rapids	Clearfield	Bell Township	Private
	4	204	Chest Falls/Campground	Clearfield	Bell Township	Private
13	13	200	Bells Landing	Clearfield	Bell Township	Public
4 -drive		187	Curwensville Recreation Area Boat Launch	Clearfield	Pike Township	Public
	4 - drive	187 Portage	Curwensville Dam	Clearfield	Pike Township	Public
11	9	185	Irvin Park	Clearfield	Curwensville Borough	Public
	2	176	Hyde Bridge (planned)	Clearfield	Lawrence Township	Public
25	10	174	Lower Witmer Park	Clearfield	Clearfield Borough	Public
25 - drive	Portage	Portage	Lower Witmer park	Clearfield	Clearfield Borough	Public
		174	Nichols St. Bridge/200yds	Clearfield	Clearfield Borough	Private
	15 - drive	Portage	Exit for Shawville Dam	Clearfield	Goshen Township	Private
		Portage	Shawville Dam	Clearfield	Goshen Township	Private
17	6	149	Deer Creek Bridge (Frenchville)	Clearfield	Graham Township	Public
	11	143	Rolling Stone	Clearfield	Cooper Township	Private
35	35	132	Karthus	Centre	Karthus Township	Public
3	3	97	PA Flaming Foliage	Clinton	Renovo Borough	Public
4	4	94	North Bend	Clinton	Chapman Township	Public

Miles To Next Access Site		River Mile	Name	County	Township	Status
Secured / Developed	Verbal Consent / Planned					
7	7	90	Hyner	Clinton	Chapman Township	Public
13	13	83	Bakers Run - proposed	Clinton	Grugan Township	Public
8	8	70	Lockport Rec. Area	Clinton	Woodward Township	Public
portage 300 yds.	portage 300 yds.	70	Grant Street Dam	Clinton	City of Lock Haven	Public
17	9	62	Pine Access	Clinton	Wayne Township	Public
	8	53	Susquehanna Campground	Lycoming	Piatt Township	Private
3	3	45	Linden	Lycoming	Woodward Twp.	Public
5	5	42	Susquehanna S.P.	Lycoming	City of Williamsport	Public
portage 200 yds.	portage 200 yds.	Portage	Hepburn St. Dam	Lycoming	City of Williamsport	Public
2	2	37	Greevy Boat Launch	Lycoming	Loyalsock Township	Public
8	8	35	Montoursville Mill Lane	Lycoming	Montoursville Borough	Public
4	4	27	Muncy	Lycoming	Muncy Creek Township	Public
7	1	23	Montgomery	Lycoming	Montgomery Borough	Public
	6	22	Riverside Campground	Lycoming	Montgomery Borough	Private
1	1	16	Watsontown Municipal	North'd	Watsontown Borough	Public
4	2	15	Watsontown PFBC	North'd	Watsontown Borough	Public
	2	13	Fort Boone Campground	North'd	Delaware Township	Private
4	4	11	Milton State Park	North'd	Milton Borough	Public
2	2	7	Lewisburg - St. George St.	Union	Lewisburg Borough	Public
5	5	5	Chillisquaque	North'd	West Chillisquaque	Public
0	0	0b	Northumberland Point M.A.	North'd	Northumberland Borough	Public
0	0	0c	Northumberland M.A.	North'd	Northumberland Borough	Public
0	0	0d	Shikellamy State Park Marina	North'd	Upper Augusta Twp.	Public

As demonstrated by Table 2.1 if all of the sites with verbal consent for public use are considered, there are still segments of the Trail that are not of a reasonable length to paddle in a day. Some of these segments are located in remote forest areas where people value the wilderness experience. It is recommended that these areas remain remote and without additional access points, but that legally designated camping areas be provided - to accommodate paddlers and control the human impact to the natural areas. The following areas are in need of designated primitive camping:

RM (163-132) Shawville to Karthaus – Because of the lack of public land, work with private landowners to secure overnight camping.

RM (132-110) Karthaus to Keating – engage with DCNR Bureau of Forestry and the Pennsylvania Game Commission to identify areas where Water Trail camping would be appropriate and could be permitted based on their management objectives.

To sustain the viability of the Water Trail, existing river access and camping sites that are not in public ownership need to have public access secured and developed for long-term public use. (See further discussion in section 4a.) The following points along the Water Trail are in public ownership; these river trail improvements should be developed.

Develop the following river access sites (presently have secured public access):

RM (207) Mahaffey Borough

At the Borough's Scout Park. (2B)

RM (176) Hyde Bridge

Lawrence Township proposed river access located just upstream of the Hyde Bridge. This would provide deep water access near local population centers and give opportunities for trail users to be less concentrated in this region. (3D)

RM (69.8) Hepburn Street Dam

The current portage around the Hepburn Street Dam requires exiting the river and carrying the boat while walking along the face of the steep, rock-lined embankment of the levee. This is physically challenging and considered a safety concern. Extension of the portage to the top of the levee would provide connection to the Susquehanna Riverwalk and the Timber Trail, with access to downtown Williamsport for food and overnight stay. Additionally, there is a fish passage structure proposed at this location; ideally the portage would be integrated into this development. (13A)

3.0 Issues for Sustainability of the West Branch Water Trail

Water trails are recreational and educational corridors between specific locations that can be used for both single day and multiple day trips. They are comprised of access points, boat launches, day use sites, and – in some cases – overnight camping areas. They provide safe access to and information about Pennsylvania's waterways while also providing connection to our diverse history, ecology, geology, heritage and wildlife.

Pennsylvania Water Trails provide information to users about general boating safety and also local information that's necessary for enjoying the specific water trail. Information should be provided through a combination of materials including a trail map and guide, signage, website, or other format.

Water trails are positive contributors to local communities by providing economic stimulus and also protecting resources that are important to the quality of life of Pennsylvania residents. Water trails promote an ethic of caring that makes the Commonwealth a better place. Pennsylvania Water Trails embrace the "Leave No Trace" code of outdoor ethics that promotes the responsible use and enjoyment of the outdoors.

-Definition of a Water Trail from the Pennsylvania Water Trails Handbook

3a. Securing Public Access

Access to Pennsylvania's waterways is changing. Traditionally, most people allowed their friends, neighbors, family, and anyone else to access streams and rivers from their property. However, as more land is owned by absentee landowners and people are becoming more concerned about liability, "No Trespassing" signs have appeared along stream banks and at the river's edge.

This issue is also facing the Water Trail. There are many traditional access points that are not in public ownership, or do not have secured public access, such as an access easement. Examples include, (RM217) Burnside Municipal Access (not municipally owned), (RM 209) McGees Mill, (RM 204) Chest Falls Campground, (RM 162) Millstone Run Access (not PFBC, though Guide shows as PFBC), (RM143) Rolling Stone, (RM110) Keating Access, and (RM55) Jersey Shore Borough Access (not Borough owned).

Additionally, the Guide lists several private campgrounds as public access points. While the public using the campground can access the River at these points, these were not intended to be used by day users or individuals not staying at the campground. These campgrounds are (RM53) Susquehanna Campground, (RM22) Riverside Campground, (RM13) Fort Boone Campground, and (RM3) River Edge RV Campground Private Access.

As landowners change, or liability concerns are raised, these traditional points of access disappear. The new landowner doesn't want people using the property. A landowner hears of a lawsuit in another part of the state and decides it's too much to risk and posts their property. This is an issue of sustainability for several reasons. One is - if you don't have access to the river people (residents and visitors) will not be able to get on the river to enjoy the resource, gain more understanding about it, and increase their appreciation of it. What people don't understand or appreciate, they don't value.

Another could be a safety issue. If people lose the ability to use one access point, they may begin using another point where water conditions are not conducive to public access, the bank is too steep or unstable, or they begin parking along a roadway where it is not safe.

Community relations can also be impacted by a lack of access, or loss of access. If a property owner feels that people are not respecting their property rights and their posting of the property - that can generate ill will toward the Water Trail. If a Trail user has a bad experience in trying to get to the river, they may become frustrated and choose not to enjoy the resource again. Ensuring adequate, and safe, public access needs to be a priority for the Trail Manager. Traditional access points where the landowners are willing to secure public use, must be formalized in some way (ownership, easement, right-of-way, long-term lease, etc.). River stretches that are lacking public access need to be examined for opportunities to add access points.

Presently the Water Trail maps show a total of 39 river access points, with 11 of these being privately owned, 13 owned by one of the Commonwealth departments or commissions, 15 owned at a county or local government level. Efforts need to be made by the Water Trail Manager to build relationships with these 11 private landowners.

In the early planning stages of the map development many of the private landowners were contacted and asked for a letter of agreement to include their access point on the Water Trail guide. During development of this Conservation and Stewardship Plan many of these landowners were interviewed, and their questions primarily related to public use of their land to access the Water Trail. These conversations were also used to assess the landowner's concerns or needs. The landowners were asked if they are willing to continue the public's use of their land. Of the 35 landowners contacted, all - except for two - were agreeable to the concept of allowing the continued use of their land for Water Trail access.

These recent phone calls were the only contact made since the original letters were sent. This lack of communication needs to change. The conversations revealed the need to develop a working relationship with these landowners and, where possible, secure formal public access.

To help gauge their level of interest and commitment, the landowners were asked if they would be willing to sign a letter of agreement to allow public access to the Water Trail through their property. All (but two) of the private landowners said they would be willing to sign a letter of agreement on an annual basis; however most were reluctant to consider long-term agreements. There were a few who would be willing to

consider a partnership and/or an access easement with a public entity or their Township to permit public use of their land for accessing the river. By developing a working relationship with these landowners it could be possible in the future to secure long-term public access in some form.

Currently there are stretches of Trail that have limited public access. This does support the remote experience that some paddlers seek. However, when there is limited access near population centers, the time required to either travel to an access point, or to paddle between access points, often poses a constraint that makes those sections of the trail 'out of reach' for many people because of their hectic schedules. Another benefit of having additional access (with shorter trip options) is that these are more suitable for engaging both younger children and aging adults in Water Trail activities.

Pennsylvania's Recreation Plan update is currently well underway. The update should be complete this Fall. For this plan's purpose, the 2004-2008 Recreation Plan was reviewed and used. That plan notes, "In 2003...Lack of time was the principal barrier (to recreation), followed by lack of information, and then a lack of money." Considering this, having more access points within short driving (and paddling) distance of our population centers will foster water trail use during evening hours and on weekends. More access points will also help alleviate congestion along the Water Trail during high use periods as people will have additional options for trips of shorter lengths, or be able to slightly extend a trip.

Additional public access should be pursued in the following areas to improve this situation. It will be important to secure written consent for public river access where verbal consent has been given:

RM (209) – the landowner of the McGees Mill access site has given verbal consent for continued public use of this property for river access, and has expressed a need for assistance with day-to-day maintenance. (2A)

RM (204) – the Chest Falls Campground is an area of common use for both hand launching boats and to portage around the Chest Falls is low water. The landowners have given verbal consent for public use of their property for river access at the campground, but there is limited site capacity. The launch area and parking are not formally developed, if these areas were to receive heavy use, stabilization would be needed to prevent erosion. Arrangements for tenting sites and parking should be made in advance of using this site. (2C)

RM (143) - landowners of the Rolling Stone access have given verbal consent for continued public use of this property, but have expressed the desire for that consent to be revocable. Therefore, this site should not be considered a permanent access without having further negotiations with the present landowners. (5B)

As outlined above, the private campgrounds in the area are currently providing access. However, this access is not "permanent" and the owners may choose, understandably, to disallow the general public who are not camping to access the River. Therefore, consideration and evaluation need to determine if additional public access is needed in any of the following areas:

RM (53) – Susquehanna Campground (12A)

RM (22) – Riverside Campground. (14B)

RM (13) – Fort Boone Campground (15B)

3b. Conservation

Based on field observations and public responses, the key conservation concerns presented can be grouped under two general headings – environmental integrity and diversity of the Water Trail corridor. Detrimental changes or impacts on either of these qualities are threats to the Water Trail.

Protecting the environmental integrity of the corridor is essential to providing the Water Trail user with a safe, healthy, and positive experience. Diversity along the corridor provides a variety of experiences for users and helps serve different user groups, and user needs.

Section 2b, Public Interests and Concerns, provides background information on many of the Water Trail characteristics needing conservation. Rather than repeat that information here, it can be referred back to as needed.

Environmental Integrity

Water quality

The water quality of the River impacts both the public perception of the resource, and the experience of people recreating on or along the River. During the public participation process for the Lower West Branch Susquehanna River Conservation Plan people at public meetings noted that the River's quality was improving, but many other people still viewed the river as dirty, unhealthy, or not suitable for recreation. This perception of the River as unhealthy, while not accurate, shaped how people viewed the River, the value they placed on it, and how interested they were in improving the recreational assets of the River. As long as people perceive the River as being unhealthy, or the River is unhealthy, people won't fully value it as a community asset and won't support recreational and community improvements at or along the River.

Impaired water also can impact other aspects of the environment. This then affects the Water Trail user's experience. There are fewer aquatic animals, birds, and small mammals to observe. Plants along the River's edge may be negatively impacted by the impaired water and not fully function as a buffer. The paddler or boater does not see the variety of flora and fauna the River has to offer and which they may be expecting from river experiences in other sections of the West Branch, the main stem of the Susquehanna, or other Pennsylvania rivers.

Water quality also can have human health impacts. The water itself could contain high, unsafe bacteria levels that can cause infections. Other containments could cause medical problems for people. Additionally, fish and other aquatic animals can absorb various toxins. As the toxin levels increase in their muscle tissue and organs, the toxins can be passed on to humans who consume the animals.

There are numerous groups collecting data, designing remediation projects, and advocating for improved water quality. Trout Unlimited, PFBC, and the various members of the Susquehanna River Heartland Coalition for Environmental Studies all are gathering data this summer. Additionally, bank restoration projects are being implemented to further reduce sedimentation and AMD impacts. The success of these efforts will directly impact the success of this Water Trail. It will be important for these efforts to be supported by the Water Trail Manager while not detracting from the direct stewardship and conservation needs of the Water Trail.

Habitat Restoration

As explained in Section 2b, AMD remediation offers opportunities for improved aquatic habitat. As the heavy metals leave the river bottom, the insect habitat will re-establish. As the insects return, so will other aquatic animals and fish.

Another exciting prospect is the proposal to add a fish passage structure at the Adam Bower Dam on the main stem of the Susquehanna River at Sunbury, PA. Currently, the lack of a fish passage prohibits American shad from completing their migration up the West Branch Susquehanna. The American shad migrations played a key role in the Early American settlement of this region; return of this species to the West Branch of the Susquehanna River will mark a new environmental landmark.

If the passages also allow eel migration, additional environmental improvements could be realized. Eels serve as a host for very young mussels. The mussels attach to the eels and reside there until they reach a level of maturity. These mussels then provide an environmental benefit by filtering water. Researchers at the United States Geological Survey (USGS) Research Station at Asaph have been examining the

condition and distribution of mussels throughout Pennsylvania's watersheds. This research led to a recent eel release in Pine Creek, a major tributary to the West Branch.

Riparian Buffer Preservation and Restoration

An important element that contributes to environmental integrity is stable and diverse riparian buffers. Riparian buffers provide floodwater retention capabilities, filtering for surface runoff, good root structure for stabilizing riverbanks, stratified plant ecology that provides shading and cooling of surfaces and water, and food and habitat for many levels of the food chain.

Invasive species are dominating riparian areas at an alarming rate, creating monocultures of non-native plants on our floodplains. These invasive species lack important values that native riparian species provide, such as food and habitat for native birds and mammals. As an example, Japanese knotweed is rampant throughout the West Branch watershed. It creates a nearly impenetrable thicket along miles of shoreline. This plant does not provide food or habitat for birds, insects, or small mammals.

One of the challenges will be in balancing the various management techniques with the ability of landowners and managers to implement them effectively. Many techniques are labor intensive and require repeat application. Other techniques are costly and need extensive follow-up. Landowners and managers will need to evaluate their situation and their ability to dedicate resources to the issue.

Often riparian buffers are removed because they look "messy." Landowners and managers need to understand the role and function of the buffers. Various programs already exist to educate the agricultural community. These programs could also benefit non-agricultural and agricultural landowners along the River.

Stable river banks help reduce and prevent erosion and sedimentation. This in turn keeps trees and large brush on the river bank and out of the river. While woody debris serves an important role in water systems by providing a food source and habitat for organisms, too much woody debris can be a problem. Woody debris can help change and form the channel and water flow which allows for various types of habitat to be created. However, as detailed earlier in the Plan, (see section 2b, water quality) sedimentation and log jams have reduced the navigability of the Water Trail from Cherry Tree to Patchinville. Other sections of the Trail also have problems with gravel bars and sedimentation especially during the summer months when water levels drop. Projects to stabilize river banks, or maintain their stability will help keep the overall river channel stable and reduce navigability issues. These projects may also help create or improve aquatic habitat in the River.

Diversity of experiences

Diversity is an important aspect of the Water Trail and needs to be conserved, maintained, and protected. Public response indicates that scenic landscapes, options for varied trip lengths, and diverse user experiences are all valued characteristics of this Water Trail.

This Water Trail is 227 miles long, with distinct landscapes and characteristics. There are remote areas where you can travel 20 miles of trail and only see forested mountains and a train. Conversely, there are river towns along the trail, and as paddlers may see toddlers playing at the community park, commuters heading to work, and people loading groceries. These are very different experiences, but both serve paddlers and boaters on the River. As management decisions are made, the decision makers should consider and evaluate the character of the River section and work to maintain this diversity of experience.

It is also important to provide options for varied trip lengths along the Trail. This can serve to widen the base of Trail users and make recreation more accessible. As discussed earlier, people feel their hectic lifestyles often limit recreational time. Travel time to and from access points, as well as the ability to paddle shorter distances, may increase the number of users and advocates for the Trail. To achieve this, it may require developing additional access points along the Trail. (see gap analysis, section 2e) By providing river access points throughout the Water Trail, paddlers have options of paddling after work, taking short day trips, overnight and weekend trips, or a corridor-long sojourn.

The West Branch of the Susquehanna River also offers a variety of river character and paddling skill challenges. There is easy to moderate paddling on a narrow river bed, moderate to challenging paddling with rapids in a deeply incised river bed surrounded by steep wooded mountainsides, and calm pools for casual paddling interspersed throughout the corridor. The impoundment areas within the corridor permit motor boating in some areas, which offers even more recreational opportunities to a different set of Trail users.

When providing additional Water Trail facilities (access sites, restrooms, larger parking areas, etc.) development decisions need to consider the fact that some regions are remote “wilderness” and some regions are developed population centers. Recognize and acknowledge that these differences create the ‘sense of place’ that people value. These regions have different needs for river access based on what the user experience should be; respect the varied diversity of experiences and the opportunities they represent.

3c. Stewardship

The greatest stewardship needs for this Water Trail include: improving water quality, reducing littering, and education and management of human behavior. Most of the Water Trail users are local residents who regularly use segments of the trail that are close to their home. ‘Their piece of the river’ (Water Trail) is what they know, what they care about, and what they will work to sustain. Based on this understanding of relationship to the river, it makes sense to address stewardship locally, with some overarching support.

Improved connectivity between the local communities and the river can be a catalyst for engaging more people with the resource. This can also help to instill a sense of ownership that can lead to stewardship commitment. To foster dedication to the Water Trail, community ties to the river need to be strengthened in all river towns.

At the present time, the Susquehanna Greenway Partnership serves as the Water Trail Manager of record, but there is no formal structure in place and limited resources for organizing volunteers and championing their efforts throughout the corridor. Development of a volunteer stewardship network would build a strong foundation to implement the recommendations of this plan for sustainability of the Water Trail. People are reportedly willing to work, but they need good direction, leadership, and specific tasks to accomplish. Working with the Steering Committee, a list of potential volunteers, both organizations and individuals was created. Only the organizations are listed because not everyone has been contacted. Additional information about volunteer stewards and the manager’s role can be found under Management of the West Branch Water Trail (section 4e.)

There are two liability issues that the Water Trail Manager (WTM) will need to address, liability for private property owners who allow the Volunteer Trail Stewards to assist with, or perform maintenance tasks, and liability for all the volunteers that serve as part of the stewardship network for any injuries they may receive while performing their duties. The WTM needs to evaluate these issues and create a risk management plan to ensure partner landowners and volunteers are aware of any liability issues they may face.

Pennsylvania does have a Recreational Use of Land and Water Act (RULWA). The Act needs to be reviewed for applicability to this Water Trail. The Act distinguishes between “developed” land and/or facilities and open space and provides protection at varying levels based on the level of development on the property. The Water Trail Manager needs to know and understand what activities the volunteers should and should not undertake and how those activities may impact the landowners.

The landowner agreement that defines the terms and conditions of assistance private landowners will accept from the volunteers should address liability. The landowner will need to maintain adequate insurance coverage based on recommendations from their legal advisor(s), and the stewardship network will need to maintain liability insurance for its volunteers.

The Water Trail Manager will need to work with appropriate legal counsel and insurance providers to research and determine how to address volunteer liability. While many volunteers will have their own medical coverage, the stewardship network should carry volunteer accident insurance. This will demonstrate that the Network cares about its volunteers, and will supplement any coverage the volunteers may have for things like missed work, etc. At a minimum, a waiver of responsibility should be drafted and reviewed by legal counsel. All volunteers should be required to sign the waiver prior to conducting any work. Any volunteer under 18 should sign it as well as their legal guardian. The Water Trail Manager should maintain these waivers.

In discussions with the Steering Committee several options were identified based on partnering for coverage with State agencies. Some examples include: DCNR Conservation Volunteer Program, PennDOT and PFBC 'adopt-a-site' programs.

Additional discussions with appropriate legal counsel and insurance agents should be held to determine if other insurance coverage is needed. These discussions should be held every 3 to 5 years to ensure any changes in law or other conditions are addressed.

Education needs to be provided to further the understanding of trail users' responsibilities. Human impacts to the trail could be better managed if trail users were better informed. Guidelines and principles for low-impact use of the land should be posted at all access sites to raise environmental awareness. Information regarding "next available restroom/ port-a-pot" and other facilities needs to be communicated at access points so that proper planning can be done and user expectations can be managed. The promotion of "Leave No Trace", and ethics for primitive camping and Water Trail use could also assist in managing human impacts to the Trail. When performing site visits, Trail Stewards may also serve as ambassadors of these principles; this would be particularly effective on heavy use and holiday weekends.

There is a need to record observations of and on the Water Trail, so that impacts of trail use on the environment can be managed. The Water Trail Manager should develop and implement a program for installing and maintaining log books at Trail access and camp sites, to monitor use and collect anecdotal information.

4.0 Taking the West Branch Water Trail to the Next Level

Key areas identified for taking the Water Trail to the next level include securing additional public access, creating primitive camping, adding signage and way-finding, strengthening connectivity to communities, making map revisions, and organizing a formal management structure.

4a. Additional public access and camping

The enhancement of this Water Trail will depend on working with both public and private landowners within the identified gap areas (section 2e) to identify specific locations for public access and camping. (see note below) Develop these sites using low-impact design so that minimal disturbance is achieved. Designate specific areas of use by providing stabilization to prevent erosion, and restore or enhance riparian buffer areas to support natural diversity. Where appropriate, provide informational signage to communicate the benefits of low-impact development to educate people about the properties that they are using. Update the Water Trail maps and guides when areas are ready for public use.

Note: See the Corridor Recommendation Maps for identified segments of the trail needing additional access. A list of potential (specific) sites was generated during an exercise with the Steering Committee, and site visits were performed to determine if opportunity currently exists. The list is not included in this report because the landowners were not contacted; this was outside the scope of this project.

Secure and/or develop camping opportunities at the following areas along the trail:

RM (187) Curwensville Lake Recreation Area

Upgrades and improvements are needed to the existing camping facilities. (3B)

RM (152 to 147)

This is a popular section for ending day trips, but there are no overnight accommodations near this site. (5A)

RM (143 to 132)

This would provide overnight stay opportunity for through-paddlers and potentially relieve camping pressure at RM 132-Karthus. (5C)

RM (126 to 118)

This would provide overnight stay opportunity for through-paddlers and potentially relieve camping pressure at RM (132) Karthus and on State Game Land. (6A)

NOTE: this is a very popular 2-day trip through remote areas without roadway access. Designating areas for camping could help to discourage illegal camping activities and limit human impact to specific locations where it is appropriate

RM (113 to 110)

River camping is needed in this region to support the heavy trail use from Karthus to Keating. That section of trail is a very popular 2-day trip through remote areas without roadway access. Designating areas for camping near the end of this section would accommodate through paddlers, and could help to discourage illegal camping activities and limit human impact to specific locations where it is appropriate. (7A)

RM (97 to 94)

River camping at access points or islands in this region would provide overnight stay opportunity for through-paddlers. (8A)

RM (89 to 81)

River camping on islands or at the (proposed) DCNR Bureau of Forestry Baker Run site would provide needed overnight stay opportunity for through paddlers. (9A)

RM (67 to 58)

There is a need for river camping between Lock Haven and Jersey Shore; camping in this region would provide overnight stay opportunity for through paddlers where lodging is not available. Wayne Township is proposing to develop an access site in this region, with potential for overnight camping. (11A)

RM (12)

River camping on the islands near Milton would provide overnight stay opportunity for through paddlers. Presently camping may be made available on the islands for specific educational, large group activities or special events by permit through DCNR Bureau of State Parks; this option is not available to individual recreational paddlers. (15C)

RM (27-24), and RM (21-19)

Interest has also been expressed for having designated camping in these sections of the Water Trail. However, there are privately owned campgrounds in close proximity to some of these areas, so the need, suitability, and ability to monitor and maintain these sites should be examined by the landowners and managers. (13B, 14A, 14C)

Secure and develop additional / alternative public access:

RM (222 to 214)

This will provide options for shorter trips and provide an option for bypassing seasonal, slow moving water. Local trail users report that most of the season the river upstream of Burnside is very slow with exposed sandbars. (1B)

RM (195 to 192)

Additional public access in this area of the Trail would provide a rest area, and access for paddlers who prefer not to paddle the flatwater of Curwensville Lake. This area is commonly used for exiting the river, but there are steep banks and signs of erosion from use without developed access. (3A)

RM (183 to 176)

Additional river access in this area would provide residents of local communities including Curwensville, Hyde and Clearfield, options for shorter trips, especially during slow flow periods. (3C)

RM (174.5)

Public river access for re-entering the river after portaging around Dudley Tonkin Raftsmen's Memorial Dam is needed. Presently there is no clear indication of where to re-launch, and hydraulic currents below the dam make this a safety concern.(4A)

RM (165 to 164)

There is a need to secure and develop public river access for exiting above the Reliant power plant dam. This dam has dangerous hydraulic currents and elevated water temperatures making it a hazard area. The area of common use for exiting is on private land, where the landowner has given verbal consent for public use. Securing long-term public access that meets the current safety standards above this dam is critical to long-term sustainability of the Water Trail. (4B)

RM (163 to 160)

Secure an alternative public access for re-entering the river after portaging around the Reliant Power Plant dam. The landowner at River Mile 163 has given verbal consent for public use of their property, but parking is limited and the power plant has recently posted signs reading "Warning - water temperatures may be significantly elevated - proceed with caution." An alternate site should be secured downstream, where more parking is available and water temperatures are lower. (4C)

RM (144 to 134)

The trustee for the estate that owns this property has given verbal consent for continued public use of this property, but has expressed the desire for that consent to be revocable. This site should not be considered a permanent access without having further negotiations with the present landowners; alternate sites should be explored. (5B)

RM (114 to 110)

There is a current area of use at RM (110), but this is private property and the landowner would not give consent for continued public use of his land. This region of Trail is the ending section of a very popular 2-day trip through remote areas without roadway access; secured public access in the location is critical to the Water Trail. (7A)

RM (104)

Secure and develop river access near Westport (on Kettle Creek). This would provide a stopping point for food, and an overnight stay opportunity for through-paddlers. (7C)

RM (78 to 73)

Public river access here would provide residents from the Lock Haven area options for shorter day trips, and paddlers wishing to avoid the motorized boat traffic above the Grant Street Dam could use this as an exit point. (10A)

RM (69.5 to 68)

Secure and develop public river access to provide resting area and additional access below the Grant Street Dam in the Lock Haven area, and to give opportunities for Trail users to be less concentrated in this region. (10C)

RM (66 to 64)

Additional public access in this area would provide opportunities for shorter trips. This would be beneficial to the nearby communities of Woolrich, Avis, McElhattan and Jersey Shore. Wayne Township is proposing to develop an access site in this region. (11B)

RM (56 to 55)

A developed public river access at Jersey Shore would provide access to food and overnight stay in this community for through paddlers, and additional access near local population centers with opportunity for Trail users to be less concentrated in this region.

Jersey Shore Borough has a project proposed to connect the riverfront to the Pine Creek Trail – “one of the state’s longest and most popular.” (DCNR news release, 06-0802-pinecreektrail). (11C)

RM (52 to 49)

An additional public river access in this area would provide an area for resting and options for shorter trips. This would increase access opportunities for the local communities of Jersey Shore, Linden and Williamsport, and would provide opportunity for Trail users to be less concentrated in this section of Trail. (12B)

RM (20 to 18)

An additional public river access in this area would provide an area for resting and options for shorter trips. This would increase access opportunities for the local communities of Muncy, Montgomery, Dewart, Watsontown and Milton and would provide opportunity for Trail users to be less concentrated in this section of trail. Conversations are underway with local partners and the Union County Industrial Development Corporation (UCIDC) to develop a river access area at the UCIDC property known as Great Stream Commons. If this project does not come to fruition, other opportunities should be explored. (14D, 15A)

RM (4 to 1)

An additional public river access in this area would provide options for shorter trips. It would also allow trail users to be less concentrated in this section of trail, and to relieve pressure from the Chillisquaque Access during the summer months. This area is part of the popular motor boating area of the Adam T. Bower Memorial Dam; there is an expressed need to provide additional access and public restrooms to serve boaters in this area. (16B)

4b. Signage and Way-finding

As reflected in the access site inventories and analysis, there is a need to develop a system of signage and way-finding to get people to the Trail, to provide orientation while on the Trail, and to communicate information at access sites. Presently, signage is at best eclectic, with no consistency from site to site, or even within a single site. Informational signage about upcoming features of the Water Trail, local land-based resources, trail expectations and portages, and safety would enhance the Water Trail experience. Many sites have signage that has not been maintained and is in a state of disrepair. This reflects poorly on the sense of pride and stewardship for the site and Trail in general. A consistent system of discreet signage could help to orient and educate Trail users, and in general help to unify the Water Trail from site to site.

Various state agencies have, or are developing, sign standards for land under their management. There are discussions and projects underway to determine sign standards for the Pennsylvania Wilds, for

various Heritage Regions, the Susquehanna Greenway Partnership, and other efforts, with various groups embarking on a project to address consistency of signage throughout the State. Once these signage standards are developed, it will be important to update existing signs and install additional signs. If signage is added, whether roadway, informational, or for tracking progress, it will be important for it to be consistent along the entire Trail.

Adding signage adds to the needed maintenance. Signs need to be installed, repaired, and replaced, and mowing may need to be supplemented with weed whacking. Vandalism may require repair or replacement. These considerations should also be weighed as signs are suggested, being discussed, and being selected. (See section 2b for further discussion.)

4c. Connectivity to Communities

Over time, river communities have become disconnected from the West Branch of the Susquehanna River. Many residents along the shores view the River as something that encroaches on their lifestyle with periodic flooding; it has been forgotten that floodplains are actually a part of the river, and that river towns are built within the river itself. Some communities no longer view the River as an asset.

Native Americans and early farming communities had an intimate relationship with river system. Life depended on eating the fish, fowl, and wildlife along the waters, and people were in tune with the river's seasonal cycles. The dynamic floodplain provided rich, fertile soils for growing crops, and flooding was viewed as a renewing of the resource.

As we became an industrialized society, our culture adopted a relationship of dominance over rivers, losing our harmonic balance of co-existence. As we "progressed" as a society, we turned to using the River as a resource for further development, often constraining the natural cycles that are the lifeblood of the River system.

In this mode of thinking we've distanced ourselves from the River. Residents no longer have a sense of reliance on the River as their life-sustaining resource, and with that have lost the harmonic relationship of life within the River's floodplain; we've lost our community connection within the ebbs and flows of this dynamic, natural system. If properly managed, the Water Trail could serve as a mechanism for reconnection – bringing people to the river for positive interactions for recreation and stewardship.

There is a need to strengthen the bond between local residents and the River; to develop a relationship built on understanding and respect. This region is rich in history – history that can come alive through the stories of the people who lived and worked on the river; understanding how their lives depended on it adds dimension to the river traveler experience. Active engagement with the River may foster a sense of connection to the resource, and for some a sense of ownership that can lead to stewardship involvement.

Local communities should have direct access to the River for paddling, fishing, scenic viewing, and skipping stones. This type of connection would also provide through paddlers amenities and potentially support the local economy. Local resources along the corridor and within the river communities can enhance the river traveler's experience – if information about them is provided. The river towns of this region host businesses for paddling supplies, food, lodging, and many cultural and historical experiences, however many of the towns are either not directly connected to the Water Trail, or information about what they have to offer is not provided. Where community/Water Trail connections are developed, provisions will need to be made for securing boats while visitors patronize local businesses.

4d. Mapping Revisions

Making changes to maps to correct and revise Water Trail conditions is a challenging task, but as access points are added or removed it is important to convey what facilities have changed. This can be both time consuming and costly, especially to reprint water-proof maps. One option is to consider a web-based

mapping system, so that changes can be updated and made readily available. Another option would be to break up the map into sections, to reduce the cost by reprinting updates in segments.

4e. Organizational Structure for the Water Trail

Throughout the length of the Water Trail there are many volunteer groups dedicated to protecting and enhancing the River corridor in various capacities - but not necessarily with a focus on the Water Trail. These volunteers and their work provide a valuable information base for Water Trail management, but they are just the beginning. To maximize the effectiveness of this existing strength, the volunteers of the region need a network of support dedicated to - and focused on - maintaining and enhancing the Water Trail.

General Management Needs

A long-term management strategy for the Water Trail that is compatible with the resources of the region would help to unify these activities and improve long-term viability of the Trail. A unifying structure to oversee and facilitate the overall management of the Water Trail will be critical to the sustainability of this trail over time. In addition to providing cohesive leadership to the Water Trail structure, additional general management needs to include the following:

- a. Build and strengthen partnerships with public agencies, non-governmental organizations, local government, businesses, communities, landowners, and volunteers for stewardship and maintenance.
- b. Provide education and training for water safety, stewardship, 'Leave No Trace' principles, primitive camping and Water Trail ethics. Seek support to integrate this into public school curriculum.
- c. Provide conservation information to public officials and landowners regarding the importance of protecting and enhancing water quality, riparian buffer areas, historic features, and viewsheds.
- d. Provide training for regional coordinators, volunteers and access site landowners about site maintenance, best management practices, invasive species and vegetation management.
- e. Provide web-link to water gauge data; supplement this information with local knowledge of how gauge readings relate to Trail usability.
- f. Provide feedback opportunities for Trail users and stewards.

Internet research of operational Trail organizations was performed to compare management structures and determine which models best align with the needs and resources of this trail system. The organizations reviewed were:

- The Allegheny Trail Alliance
- Pennsylvania Parks and Forest Foundation (Friends of Milton State Park and Friends of Shikellamy State Park)
- MITA- Maine Island Trail Association
- Northern Forest Canoe Trail
- SRTA – Susquehanna River Water Trail Association – Middle Section
- Lower Susquehanna Riverkeeper / Waterkeeper Alliance
- The Yough River Trail / Regional Trail Corporation

4f. Models of Management Structure

This Water Trail is not confined by municipal or county boundaries. This Trail flows through seven (7) counties: Indiana, Clearfield, Centre, Clinton, Lycoming, Northumberland and Union Counties. There are 227 miles of trail and 34 currently viable access sites (based on Gap Analysis in section 2) that need to be maintained and monitored. There is a need to provide some level of consistency throughout the Trail, while acknowledging the individual character and needs of specific regions. The organization or person serving as Water Trail Manager must have the capacity to serve a large area.

To better understand functioning management structures, research of operational multi-county trail organizations was performed. Through a combination of contacts made, internet searches and phone conversations, the following organizations were reviewed:

- Lower Susquehanna Riverkeeper / Waterkeeper Alliance
- Hiawatha Water Trail / Noquemanon Network
- Northern Forest Canoe Trail
- The Allegheny Valley Trails Association
- The Yough River Trail / Regional Trail Corporation
- Pennsylvania Parks and Forest Foundation (Friends of Milton State Park and Friends of Shikellamy State Park)
- Susquehanna River Water Trail Association – Middle Section (SRTA)

Phone calls were made to the organizations to discuss benefits, challenges, and functionality of these trail systems. Of these organizations, the following three do not appear to serve as appropriate models for the reasons noted below, but provide value for comparison of management options.

Lower Susquehanna Riverkeeper / Waterkeeper Alliance (world-wide with local keepers)

A discussion with Michael Helfrich, Lower Susquehanna Riverkeeper, revealed that the mission of these organizations is to provide public advocacy for waterways to protect ecosystems and water quality. Since it did not relate to trail maintenance they were not considered during the analysis.

Hiawatha Water Trail (HWT) / Noquemanon Network (Michigan)

According to Nikki Dewald, operations coordinator for the Noquemanon Network, they are a 501(c)(3) that both run their own system of trails (land and water) and support their affiliates. They form partnerships to provide these groups limited liability insurance; they have no formal agreement or structure with the affiliates.

The HWT is an affiliate of the Noquemanon Network and a 501(c)(3) that promotes stewardship – but they are characterized more as an activist/educational group that provides information and education. While the structure of this organization didn't apply to this analysis, they could be a resource for potential stewardship and educational programming.

Northern Forest Canoe Trail (NFCT) (multi-state coverage)

This trail traces Native American travel routes traversing from New York to Maine for a total of 740 miles to expand awareness and understanding of the Northern Forest region's history, identity and potential, while honoring Native American culture and traditions.

According to Walter Opuszynski, Trail Director, this is a 501(c)(3) organization that works through partnerships and in collaboration with local and regional stakeholders. The primary focus is stewardship of the trail and waterway. They are currently working to develop a stewardship and conservation plan.

This management structure is tiered, with 3 full-time staff; an executive director, a trail manager, and a program director, and 3 summer intern positions. The executive director is responsible for outreach and memberships. The trail director oversees youth programs, community outreach and education. The program director focuses on grants, membership and donations. Grants received often provide stipends for summer interns, who coordinate and support projects, membership activities, youth involvement, and field work on the trail.

Volunteers as part of an Adopt-a-Section program provide maintenance including clearly marking the water route at conveniently located camping sites. In the spring existing campsites are opened, trail markers replaced, and access areas and portage paths are inspected. In the summer, interns are used for checking the trail and providing general trail maintenance.

The multi-state structure requires administration tasks not needed on the Susquehanna River Water Trail-West Branch. With respect to this aspect of the organization, there is limited value to the present

analysis, but may prove worth re-visiting in the future as consensus is built for the Water Trail, and on-the-ground improvements are made.

The following organizations have both missions and management structures that could be applicable to this Trail. Brief summaries of the organizations are provided below for comparison.

Allegheny Valley Trails Association (multi-county area of service in Pennsylvania)

Jim Holden, President of the Allegheny Valley Trails Association (AVTA), shared insights regarding this 55-mile long land based trail system. The AVTA is an all volunteer, non-profit organization with a mission to acquire abandoned railways in the Allegheny River watershed for the purposes of developing multipurpose, non-motorized trails.

The activities of the AVTA are guided by a board. The board's responsibilities are planning, grant writing, fund raising, acquisition of railways, and enhancement/maintenance of trails. Large development and acquisition projects are funded by grants, and local community and business support. The Association purchases Directors and Officers insurance, as well as providing liability insurance to volunteers.

There is a formal Adopt-a-Mile program in place for this trail. Typical maintenance tasks include picking up litter, trimming branches, clearing the edge of the trail, reporting problems and obstacles that require larger tools, trimming around mileage markers, signs and benches. (They do not mow, but help prepare the site to facilitate ease of mowing.) Members support the organization with annual dues, the majority of which go directly to maintenance and advancement of the trails, which is all done by volunteers. A small portion of dues are used to fund the regional Greenways and Open Space (GOS) coordinator position.

As the GOS Coordinator, Deb Frawley is able to provide the AVTA (and the affiliates) assistance with grants and provide a live phone presence for inquires. This position was created as recommended in a peer-to-peer study for advancing trails and recreation in the Venango and Crawford County region, and is funded in part through the DCNR Circuit Rider Program. While a formal organization is in the process of forming, the management is presently done through a Steering Committee (SC) with terms and bylaws. This provides an independent, 'non-political' entity to make the decisions. The Steering Committee is responsible for establishing a work plan for the Greenway.

The Yough River Trail / Regional Trail Corporation (RTC) multi-county, Pennsylvania

The Regional Trail Corporation was formed to acquire, construct and manage the Yough River Trail, which passes through three counties. According to Malcolm Sias, Vice President of the RTC, they have a Board of Directors with representatives of the three counties and nine members from Chapter volunteers. The Chapters formally associated with the RTC are required to have the following:

- a. Membership of 25 committed individuals, organizations, or businesses willing to work together to establish a trail or accept responsibility for a segment of trail.
- b. Partnerships with the municipalities that the trail traverses. This partnership is shown through a simple resolution that commits the municipality to assisting with trail maintenance and construction to the best of their ability and capacity.
- c. Organizational partners willing to provide support and assistance.
- d. A designated and defined trail segment that the Chapter is associated with and willing to accept responsibility of.

The RTC is funded by dues from Chapters, with one part-time office manager. Chapters are 501(c)(3) entities that raise funds for their own on-the-ground projects. All trail work is done by Chapters or Affiliates, sometimes with grant monies to assist with funding of larger projects or acquisitions. The RTC provides benefits to Chapters including:

- Serve as the fiscal agent
- Provide assistance with grants
- Provide coverage under their liability insurance
- Purchase equipment/tools that can be shared by chapters

Pennsylvania Parks and Forest Foundation (PPFF)

This organization has a mission “To enhance Pennsylvania’s parks and forests, protect Pennsylvania’s natural resources, and *support conservation and environmental programs.*” From the Foundation website the organization is “a state-wide non-profit organization supporting the 117 state parks and 2.2 million acres of forest land.”

In discussion with the Foundation president, Marci Mowery, the organization has 2 paid staff and 2 contractual employees that are funded through grants and donations, with additional fundraising for projects. Funds of chapters go directly to their projects.

PPFF serves as the umbrella 501(c)(3) providing administration and fiscal services to the Chapters. The Chapters are not independent 501(c)(3) groups. Each Chapter has its own Board to determine the work plan for the Chapter, and to set a fundraising plan to ensure that they have supplies and materials to complete their projects.

The value that this organization provides to affiliate groups is many-fold. PPFF requires all organizations to sign a memorandum of understanding, which directs all funds for the organizations pass through them. In this capacity PPFF acts as the fiscal agent, which frees organizations from administrative obligations so that they can focus on the actual field work that needs to be done. PPFF also holds contracts and provides assistance with grants, training and research. Since this organization limits its work to Pennsylvania State Parks and State Forests, volunteers register as Conservation Volunteers (under DCNR) and thereby have liability coverage under that program, with PPFF offering organizations limited liability insurance for events via a rider on their policy. PPFF has 21 chapter friends groups and supports an additional 14 independent groups throughout the Commonwealth.

Friends of Milton State Park and Friends of Shikellamy State Park (Pennsylvania)

Within the West Branch Water Trail corridor, there are currently two friends groups that function in partnership with PPFF - Friends of Milton State Park and Friends of Shikellamy State Park. These groups are Chapters of PPFF that have membership drives and special fundraising for specific projects for conservation and stewardship; funds of Chapters and groups go to their specific projects.

Maine Island Trail Association (Maine)

“In 1987 the concept of a water trail on the Maine Coast took form in the Maine Island Trail. Concerned that increasing visitation could damage the natural environment on these islands, the Trail’s early proponents created the Maine Island Trail Association (MITA) to manage and care for the Trail sites and help maintain their wilderness character.”

“MITA was founded on the belief that recreational visitors can and should serve as stewards of Maine’s wild islands. From its inception, MITA has fostered a community of volunteer boaters and island users who monitor conditions on the Trail, participate in island clean-ups and other work projects, track recreational use of Trail properties and spread the word about environment-friendly low-impact practices.” (MITA website)

Originally started under the Island Institute (non-profit organization), MITA formed an independent 501(c)(3) membership organization in 1993. Since then, MITA has grown and evolved into an organization with eight staff members, governed by Trustees. In phone conversations Dave Mention and Doug Welch shared how during the last 22 years the organization has grown to hundreds of stewardship volunteers. They also partner with the Maine Bureau of Parks and Lands and serve as the primary manager of the public trail islands. The Trail includes over 150 islands and mainland sites, with more than half of these being privately owned, with no binding agreements for the use of these private lands. Since the character of this trail is not linear, individual sites are not as critical to the overall viability of the trail.

This organization funds most of its activities by member dues, grants and other contributions. This organization has grown slowly, which allowed it to evolve, building local support through individual and community involvement.

MITA provides boats to their Monitor Skippers, and report forms for island stewards. Volunteers are required to sign a waiver, and liability coverage is provided. Common tasks performed include recording observations of trail use (number of boats, number of people), removing debris from the shoreline, dismantling fire rings and removal of litter.

Susquehanna River Trail Association, Inc. (SRTA - Pennsylvania)

This group was formed to provide stewardship for the islands in the 55 miles on the Susquehanna River main stem from confluence at Sunbury to dam at Harrisburg (middle section). Quoting from the bylaws of this 501(c)(3) group...“the SRTA shall promote sustainable use of the river and work toward the continued stewardship of the river and surrounding watershed in partnership with private individuals, environmental and recreational organizations, and government agencies at local, county, state, and federal levels.” Discussion with Bruce Bishoff and Brooke Lenker indicated that their organizational structure was partially inspired by the activities of the Maine Island Trail (MITA).

This is a completely volunteer organization, with monthly business meetings and occasional topical meetings as the opportunity occurs. Trail work projects include acquisition, improvement, and maintenance of the trail. Grants, donations and membership fees are all used to provide funding to steward island resources.

SRTA only manages campsites on the trail. These sites are all on islands owned by Pennsylvania under the supervision of the Bureau of Forestry (BOF). SRTA meets annually with BOF Director of Stewardship and more frequently with BOF Recreation and Safety to discuss ongoing maintenance of islands.

SRTA has a group of “island stewards” that are responsible for light maintenance of assigned campsites and report monthly on their visits. They are backed up by a “heavy duty” maintenance crew that cover tasks such as fire ring installation, large trash and tree removal, etc. Each island is supplied with a permanent Forest Service style fire ring and a post mounted box containing a waterproofed log book plus identification signs. They have also produced an Island Steward Manual that details responsibilities and gives examples of reporting materials and procedures they should use. SRTA accepts the monthly island campsite inspection/cleanup reports as e-mail, verbal message or postcard.

The SRTA has volunteers sign liability waivers when they go on maintenance trips, as they have limited administrative liability coverage through Pennsylvania Organization for Watersheds and Rivers (POWR), now under the wing of the Pennsylvania Environmental Council (PEC).

The Association has acquired the following that can be made available to Volunteers for use on “heavy duty” maintenance trips: a jon boat, motor and trailer plus some maintenance tools.

As demonstrated by the examples above, there are many benefits realized by having a parent organization: to assist with cohesion of the individual projects, provide leadership and guidance, provide liability coverage to volunteers, and in some instances provide administrative support, and serve as fiscal agent.

While there are noted differences between these models, the one thing that is consistent is that the strength of each organization is their committed volunteers. A network of volunteers is truly the foundation of any successful trail. Additionally, by building capacity at the local level, pride in the trail and sense of ownership can be fostered. If local communities become more involved, that could demonstrate the value of the trail to local and county governments.

Members of the Steering Committee felt that the coordination and management of this Water Trail and its volunteers will require more work than is reasonable to expect a volunteer to perform. However, they felt

that with a paid position it would be possible to attract good candidates with the needed skills and qualifications from within the corridor to perform the required work. By building the volunteer base you are insuring the stewardship occurs regardless of funding. Paid staff positions require active fundraising programs and open up management and administrative issues. By focusing on the volunteer stewardship base for first several years, a more sustainable network will be built.

To better understand how these models relate to the West Branch Water Trail, we need to look at the region that the Trail passes through, and evaluate some options for using existing capacity to support the trail.

4g. Existing Regional Capacity for Management

The population of the Water Trail corridor is found in rural villages, small river towns, and a few urban centers. Since this Water Trail is 227 miles long, a regional approach for organizing needs would be beneficial, but initially efforts will need to focus on building a strong foundation of local support. Presently, people throughout the region know and use the Water Trail as it relates to their locale, but they do not really perceive it as an entire trail system. It will be essential to raise awareness and to build consensus for the Water Trail as a whole prior to embarking on the creation of a paid position to manage it. After community support has been built for this trail through local stewardship efforts, further consideration can be given to establishing a long-term management position. Communities need to see it first as “their trail” – developing a sense of local ownership that fosters stewardship values to care for the resource.

For this Trail, a hybrid of the model organizations reviewed makes the most sense. At the local level, the PFFF model could serve the portion of the trail on State Forest and State Park lands, and MITA / SRTA model could be applied to the remaining area. There is a need for someone or some organization to provide administrative coordination and consistency of care and design throughout the entire trail. However, development at the ground level with volunteers should be the priority step for building a volunteer stewardship network. This would depend on solidifying the base of volunteers and providing them the level of regional leadership and guidance they need to effectively begin implementing this Plan at the local level. A tiered approach could be used, beginning with empowering local volunteers, and eventually building to provide full-scale management at the system-wide scale.

The first priority for stewardship should be working with volunteers, landowners and managers, partners and stakeholders to identify stewards who are willing to accept responsibility for maintenance and recorded observations at specific sites and/or segments of the Water Trail. Mobilizing the volunteers at the local level and working toward unifying them in a focused approach will lay the groundwork for implementing this Plan. By addressing consistent maintenance throughout the corridor, a first step will be taken toward sustaining this Water Trail.

The Steering Committee agreed that the initial focus should be on developing a network of volunteers, with an emphasis on maintaining the existing access sites. They felt this would foster positive, on the ground, action without the need to fundraise for any paid staff positions. The Committee thought this methodology would allow for leadership to develop within the group. Several of the organizations discussed section in 4f have used, or are using this approach to organizational development.

The Second priority should be to develop and strengthen relationships with access site landowners, working toward a goal of securing some form of long-term public access. This may take time, but having local stewards to help them with site maintenance will demonstrate to landowners how their generosity and good will is valued by others.

As local stewardship increases, consensus and support for the Water Trail should also increase in local communities. By the time this has happened, it is likely leadership for Water Trail management will be emerging from within the active group of participants. If this is allowed to grow from the grass-roots level up, a more sustainable organization will evolve, built on the foundation of the committed volunteers.

Once this has happened, consideration for some formal organization to manage the Water Trail would be appropriate.

At the present time there are several existing organizations that could be approached to serve as the Water Trail Manager. Obviously any of these organizations may feel the tasks are too far removed from its core mission, or that they currently do not have the capacity to take on the role. A commitment would be needed from the governing Board of Directors from any of these entities to ensure organizational dedication to the task.

This Plan provides characteristics and work tasks the Water Trail Manager will need to undertake for the Susquehanna River Water Trail–West Branch to be successful. However, the Plan does not recommend one individual or organization over another, but instead provides a suggested “first step” and alternatives to consider. This was done intentionally because of the time lag which may occur between Plan development and Plan implementation. The organization or individual that is currently (as of summer 2009) agreeable to serving as the Water Trail Manager, and has the capacity and skills to do so, may not be in the same position in six months, a year, or even in five years. The following organizational summaries will provide an overview of where to begin the Water Trail Manager search process.

The Susquehanna Greenway Partnership (SGP) is currently the Water Trail Manager of record and the obvious place to start discussions. SGP’s mission is “developing and sustaining the Susquehanna Greenway to connect communities and enrich lives through enhanced recreation, healthy living, economic prosperity and environmental stewardship.” The organization considers the entire West Branch of the Susquehanna River to be within its focus. A discussion with the Executive Director and Board of Directors would be a logical first step. The Board recently took action to create a water trail committee. This was in part to acknowledge the value of the water trails along the Susquehanna River (including the main stem and West Branch).

If the SGP defers serving in the role of the Water Trail Manager, other organizations to consider include the Pennsylvania Environmental Council (PEC), the Lumber Heritage Region (LHR), North Central Pennsylvania Regional Planning and Development Commission (NCRPC), and SEDA-Council of Governments (SEDA-COG).

PEC is a statewide organization that “protects and restores the natural and built environments through innovation, collaboration, education and advocacy. PEC believes in the value of partnerships with the private sector, government, communities and individuals to improve the quality of life for all Pennsylvanians.” PEC promotes river recreation as a sustainable, local recreation opportunity. As explained earlier in the Plan, PEC is involved with water trail efforts at the state wide level, and also assisted with the water trail working session held in April 2008.

The Lumber Heritage Region includes coverage of all the service area except Northumberland and Union Counties. The charge of this organization is “to preserve, relate and enhance the history and heritage of the people and their relationship with the Pennsylvania Forests.” As explained in the beginning of the Plan, LHR managed the project to create the Maps and Guide for the Trail.

The North Central Pennsylvania Regional Planning and Development Commission is the designated Local Development District for the counties of Cameron, Clearfield, Elk, Jefferson, McKean and Potter, with a mission of “partnering for local opportunities”. This organization submitted the original application for designation as part of the Chesapeake Bay Gateways Network. NCRPC also served as the incubator for the LHR and the Pennsylvania Wilds Planning Team.

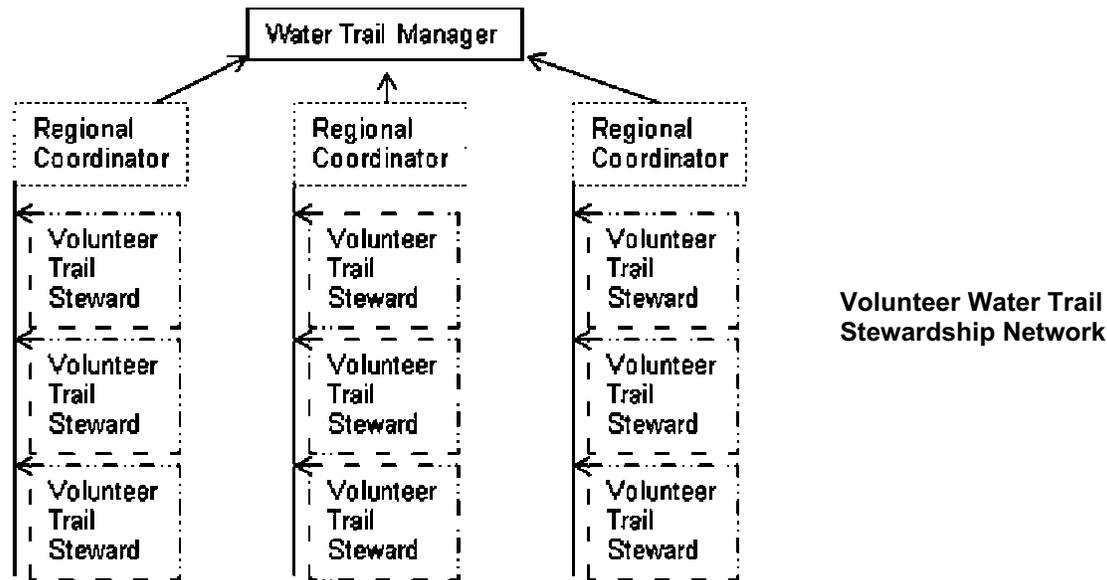
SEDA-COG serves all the counties within the Trail corridor except Clearfield and Indiana Counties. Its mission is to serve as a “regional multi-county development agency which, under the guidance of a public policy board, provides leadership, expertise and services to communities, businesses, institutions and residents.” The Community Resource Center (CRC) within SEDA-COG has provided technical assistance and administrative support to projects and communities along the West Branch Susquehanna

River. The Friends of Milton State Park as well as the Muncy Historical Society's effort to develop a canal heritage site have both benefitted from CRC staff's knowledge and expertise.

It is clear that the process to identify an appropriate Water Trail Manager needs to begin concurrently with development of the Volunteer Trail Steward network. The local volunteers will be the backbone of the stewardship network; however in order for the Water Trail to be viable as a unified trail network, a Water Trail Manager will need to help coordinate activities and projects, and secure Trail-wide funding.

4h. Recommendation for Management Structure

The recommendation of an effective management structure for this Water Trail would be a tiered approach, built on the strong foundation of local volunteers. Volunteer Trail Stewards would be used to make site visits, record observations and provide maintenance at sites. Regional Coordinators would be "go to" people for the Trail Stewards, organizing regional information and providing coordination with the Water Trail Manager. The Water Trail Manager is responsible to 'see the whole picture'. The Water Trail Manager must provide leadership to unify the local and regional efforts, and support to assist them to follow through with their tasks. Together, these individuals and groups will form the Volunteer Water Trail Stewardship Network.



Volunteer Water Trail Stewards – local level

Susquehanna River Trail Association (SRTA) volunteers, Pennsylvania Fish and Boat Commission (PFBC) adopt-an-access program, and the Maine Island Trail Association (MITA) adopt-an-island as models.

Trail Stewards are the eyes and ears of the Water Trail; the worker bees that perform the tasks that maintain and improve the Water Trail. These are individuals and groups that know the local segments of the river and Water Trail and care enough to make a commitment to sustain and improve it. Ideally, Trail Stewards should possess some of the following characteristics:

- Personal dedication and commitment to the sustainability of the Water Trail.
- Willingness to invest time and effort to maintain trail and access sites.
- Physical ability to perform maintenance tasks
- Commitment to recording observations and reporting to the Regional Coordinator
- Good 'people skills' to interface with the general public during site visits.

Responsibilities of the Volunteer Trail Stewards:

1. Conduct a minimum of three site visits annually, however, ideally this would be done monthly during the April – September paddling season, or relative to the following events (at a minimum):
 - a. Before Memorial Day weekend
 - b. After Memorial Day weekend
 - c. Before Labor Day weekend
 - d. After Labor Day Weekend
 - e. After high water events
2. In conjunction with each site visit, fill out the standardized report of observations and submit to the Regional Trail Coordinator. (see Appendix C for forms)
 - a. Human impacts – note: areas of litter/dumping, fire rings, observed heavily used areas, vandalism, human and pet waste, firewood depletion, etc.
 - b. Environmental observations
 - i. Erosion, flood impacts, navigation blockages/deposition, invasive species
 - ii. Wildlife observed
 - c. Safety concerns
 - d. Improvement projects needed
 - e. Actions taken while on site and number of hours given
 - f. Retrieve log book entries (when in place)
3. Maintain access sites at a level approved by the landowner and appropriate for the volunteer.
4. Contact Regional Trail Coordinator on a quarterly basis to share needs for local improvement projects and to help plan for implementation (annually at a minimum).
5. Serve as the local contact person for improvement projects.
6. Attend annual meeting of Trail Stewards and coordinators (corridor-wide) with the Water Trail Manager.
7. Attend volunteer/stewardship training as provided by the Water Trail Manager.
8. If working on a DCNR or PFBC site, volunteers will need to additionally register and follow the terms and conditions of those programs.

There are many paid staff members working for municipalities, counties, the Pennsylvania Fish and Boat Commission, DCNR Bureau of Forestry and Bureau of State Parks that provide maintenance and make improvements to access sites along the Trail. The value of these services has been a major contribution to the Trail. The goal of this plan is to provide assistance to them as appropriate. For the purposes of this Plan, the paid staff members are included in the Volunteer Stewardship Network.

Regional Trail Coordinators- regional level

River Steward and MITA Skipper programs as models

Trail Coordinators are the regional point persons for collecting the local information from the volunteers and paddlers regarding the Water Trail, coordinating the local efforts by the Volunteer Trail Stewards, and reporting information to the Water Trail Manager. For the purposes of manageability, the Water Trail can be divided into the following six regions.

Region 1: Cherry Tree to Curwensville (RM 227 to RM 186)

Region 2: Curwensville to Deer Creek (RM 186 to RM 149)

Region 3: Deer Creek to Keating (RM 149 to RM 110)

Region 4: Keating to Jersey Shore (RM 100 to RM 55)

Region 5: Jersey Shore to Muncy (RM 55 to RM 28)

Region 6: Muncy to Northumberland (RM 28 to RM 0)

To be effective, the Regional Coordinators will need to have the following skill set:

- Personal dedication and commitment to the sustainability of the Water Trail.
- Willingness to invest time and effort to advance the Water Trail.
- Regional presence as well as a local presence with paddlers and volunteer Trail Stewards.
- Good 'people skills' to build working relationships with the general public.
- Organizational skills to manage local feedback in a useful format.
- Capacity to help coordinate local needs with local resources.

- Leadership skills to help organize Volunteer Trail Steward efforts.
- Communication skills for interacting with public, other volunteers, and the Water Trail Manager.

The Regional Coordinator's Responsibilities:

1. Ensure the region is paddled twice annually to assess overall changes to the Water Trail.
2. Make annual contact with Trail Stewards, requesting local reports of observations.
3. Work with Water Trail Manager to develop an annual work plan.
4. Keep a file/record of comments from Trail Stewards and paddlers.
5. Develop a yearly work plan for the region.
6. Relay local needs and interests to the Water Trail Manager on an annual basis.
7. Provide standardized reporting forms to Volunteer Trail Stewards.

Water Trail Manager –corridor level

SRTA-Middle Region as model

The Water Trail Manager is the umbrella for the entire West Branch Water Trail. The Manager facilitates cohesiveness throughout the trail corridor, with a committed dedication to enhancing the Water Trail and user experiences. The Manager acts as a repository for local information; then organizes, analyzes, prioritizes and takes the necessary steps to implement what needs to be done to enhance and sustain the West Branch Water Trail. The Manager should have the following:

- Dedication to the successful future of the West Branch Water Trail
- Capacity to support the Regional Water Trail Coordinators and Trail Stewards
- Eligibility to apply for funding to implement projects
- Good working relationships with federal and state agencies that support the development and promotion of Water Trails
- Skills to coordinate the publication of Water Trail information in a variety of formats
- Sensitivity to work effectively with private property owners as Water Trail partners

The Water Trail Manager responsibilities:

1. Sign a Memorandum of Understanding (MOU) with the National Park Service, Chesapeake Bay Gateways and Watertrails Network. (See Appendix D for the MOU and its commitments). This will allow the manager to seek assistance and apply for funding through the Gateways Network.
2. Provide support for Regional Trail Coordinators and Stewards.
 - a. Engage with Coordinators quarterly to collect local resource information and inquire as to what assistance they may need. Contact Stewards as necessary to supplement information.
 - b. Provide standardized materials needed to the Regional Trail Coordinators including a log book for organizing data and copies of evaluation forms for volunteers and paddlers.
 - c. Discuss potential projects for implementation suggested for their region and to better understand the present needs for prioritizing projects corridor-wide.
 - d. Provide technical assistance to local and regional groups for development projects. This assistance should be in the form of: visioning/conceptual project planning; partnership building between federal and state agencies, county and local governments, businesses, and volunteers; grant writing assistance; serving as the fiscal agent for grants.
 - e. Host an annual meeting of trail monitors and coordinators. This meeting would facilitate identifying priorities for upcoming grant rounds, promote consistency throughout the entire Water Trail, discuss corridor-wide needs, opportunities and issues, provide a forum for exchanging ideas, networking and potential collaboration, acknowledge on-going efforts, and set goals that are attainable for the upcoming year.
3. Develop and organize volunteer training workshops annually, or more frequently as needed.
4. Develop and/or make available information for general public education on Stewardship and Conservation topics such as:
 - i. Water Trail Use Standards and Guidelines (work with PEC)
 - ii. Primitive Camping Ethics (with DCNR BOF)
 - iii. Respecting private property
5. Provide volunteer and coordinator recognition
6. Maintain and document annual contact with private landowners of access sites.

7. Serve as liaison between federal and state agencies, county and local governments, businesses, and volunteers to identify partners and potential funding sources for project implementation.
8. Keep an inventory of the information that is provided to users (signage, trail map and guides, web information) and assure that information is updated. Collect information from regional and local contacts to assure that information is correct.
9. Engage with the other Susquehanna River Water Trail Segments to help provide consistency throughout the Susquehanna River system, and participate in statewide water trail sessions.

Pennsylvania Water Trail Working Group

At the statewide level, consideration should be given to establishing a working group of Water Trail Managers that are dedicated to the advancement of the Water Trails in a cohesive and consistent way. In April 2008, a Water Trail Working Session was held to convene Water Trail Managers to share ideas, network, and collaborate on how to improve water trails statewide (see section 7). Under the leadership of the Pennsylvania Environmental Council (PEC), Water Trail Managers meet periodically to identify key issues and share their working knowledge. The West Branch Water Trail Manager needs to have active participation in these events. The formation of a working group of this type could serve as an overarching entity to unify the development, effective management, and long-term viability of Pennsylvania Water Trails collectively. This would allow the distinct organizational entities to pool resources and combine efforts, in order to advance common goals and secure common interests relative to Water Trails in Pennsylvania. The following are functions that this group could serve:

1. Convene to develop strategies for consistency throughout the collective segments that comprise the Pennsylvania Water Trail system
 - a. Marketing Water Trails
 - b. Signage: on-river orientation, directional to river access points, way-finding to local points of interest.
 - c. Web-based information sharing
2. Address key Water Trail issues that are prevalent throughout the entire system
 - a. Water Trail Safety
 - b. Long-term Water Trail sustainability
 - c. Diversifying user base
3. Actively engage with the PA Water Trails Partnership to represent the individual trails and entire system

Partnerships for Implementing Trail Management

Maintaining and enhancing water trails involves planning, hard work, and commitment to the cause. The amount of effort could initially appear overwhelming, but with effective partnerships support can be available from many sources. Partners can help to break the work into smaller tasks of manageable size, and bring knowledge, experience, and funding to water trail projects.

The Volunteer Water Trail Stewardship Network will be used to give organizational structure, built on a strong foundation of local volunteers. The Trail Stewards will carry out tasks to maintain and improve the Trail with Regional Coordinators providing local leadership. The Water Trail Manager must provide cohesion between the regions.

There is not a single organization, entity, or individual that can successfully implement this Plan by acting alone. It will take partnerships, cooperation, communication, and multiple partners working toward a common goal. Nearly all of the recommendations in this plan will require some level of collaboration. The key will be keeping these collaborations focused on the common goal while acknowledging the individual efforts that make each collaboration a success. The Water Trail Manager must be capable of facilitating connections between partners and coordinating activities and efforts.

Federal and state level support is available through The Pennsylvania Water Trails Partnership. This group was formally established in September of 2008. An excerpt from The Partnership statement

indicates that it was formed..... "In order to ensure the ongoing stewardship and sustainability of our Water Trails..., the Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish & Boat Commission, National Park Service-Chesapeake Bay Gateways and Watertrails Network, National Park Service-Rivers, Trails & Conservation Assistance Program and the Pennsylvania Environmental Council agree to work together in a coordinated effort with local and regional organizations to achieve collaborative goals of the Pennsylvania Water Trails Partnership."

Additional partners for long-term Water Trail sustainability

Public Agencies that have a role and interest:

- Chesapeake Bay Gateways and Watertrails Network (CBGN)
- National Park Service Rivers, Trails & Conservation Assistance Program (NPS-RTCA)
- Susquehanna River Basin Commission (SRBC)
- United States Fish and Wildlife Service (USFWS)
- Pennsylvania Fish and Boat Commission (PFBC)
- Pennsylvania Department of Conservation and Natural Resources (DCNR)
- Pennsylvania Department of Environmental Protection (DEP)
- Pennsylvania Department of Transportation (PennDOT)
- County Conservation Districts (CCD)
- County Planning Staff

Non-governmental Organizations that can provide support in the form of information, being a source of manpower, and providing management:

- Susquehanna Greenway Partnership (SGP) -the Water Trail Manager of record
- Pennsylvania Environmental Council (PEC) -PA Water Trail Coordinator
- North American Water Trails, Inc. -a non-profit organization in partnership with the Chesapeake Bay Gateways Network
- Conservancies and Land Trusts: Northcentral Pennsylvania Conservancy (NPC), The Nature Conservancy (TNC), Clearwater Conservancy, Western Pennsylvania Conservancy (WPC), and Rocky Mountain Elk Foundation (RMEF)
- County and Local Recreation Authorities and Commissions
- Local Tourist Promotion agencies and Chambers of Commerce
- Clinton County CleanScapes (an independent affiliate of PA CleanWays)
- West Branch Restoration Coalition (WBRC)
- Correctional Facilities and Boot Camps
- University Groups such as: Lock Haven University's Recreation Department, Biology Club, Outdoor Recreation Club, Fly Fishing Club, and Catholic Campus Ministries; Lycoming College's Cleanwater Institute, Lycoming Environmental Awareness Foundation, and the Flyco (the fly fishing club); The Susquehanna River Heartland Coalition for Environmental Studies; and various service clubs, fraternities and sororities.

There are other volunteer organizations and informal groups that may be interested in helping steward the Water Trail. This list includes churches, service clubs, local paddling groups, Bassmaster's clubs, garden clubs, Boy Scouts, Girl Scouts, sportsmen's clubs (Western Clinton County Sportsmen and Curwensville Anglers Restocking Program were two mentioned repeatedly) as well as churches, and Trout Unlimited Chapters.

Note: Potential local and regional partners to serve as Trail Stewards have been identified through the Steering Committee, but only the organizations are listed because not everyone has been contacted.

5.0 Water Trail Working Session

The Water Trail Working Session that was held in Danville, PA in April 2008 brought together over 70 Water Trail stakeholders from across Pennsylvania including partners from New York. The session helped to invigorate Water Trail activity at the statewide level and was a great opportunity for project managers to learn from each other's projects. In addition to general sessions about the PA Water Trails Program, session topics included:

- stewardship and sustainability
- rainbow of users/diversifying the audience
- making Water Trails more family oriented and increasing user base
- insurance/liability
- log jams
- long-term management strategies
- marketing, maintaining the primitive nature of a campsite
- creating realistic expectations for the public
- signage for Water Trails
- creating a whole system of Susquehanna Water Trails (Susquehanna Greenway) – help us plan the NY segment.

The Pennsylvania Fish and Boat Commission (PFBC) and Pennsylvania Recreation and Parks Society (PRPS) provided funding to sponsor this session.

Following are some specific action items that have resulted from the Working Session:

PA Water Trails Partnership Agreement

The Pennsylvania Environmental Council (PEC) developed both a vision for the future of Water Trails in Pennsylvania and a Statement of Purpose for the Pennsylvania Water Trails Partnership. The Statement was approved by all partners (PEC, National Park Service, PFBC, and DCNR) and signed at the Fourth Annual Greenway and Trails Summit at Pocono Manor on September 2008.

PA Water Trails Handbook

The Pennsylvania Water Trails Partnership published the PA Water Trails Handbook that includes a definition of Water Trails in Pennsylvania and technical assistance materials. This information is available to project managers and will be updated on a regular basis as new resources are available. To download a copy of this handbook visit: <http://www.pecpa.org/watertrails>

Susquehanna River Water Trail System

The project managers of the Susquehanna River Water Trail have continued to work together including a face-to-face meeting held in the Harrisburg area in March 2009. PEC has surveyed all of the Water Trails in the Chesapeake Bay Watershed in Pennsylvania using a survey tool to understand the current state of Water Trails. A report is available with a summary of the findings; this information is being used for the development of technical assistance components of the Pennsylvania Water Trails Program including workshops.

Water Trail Working Session - April 2008

Open Space Discussion Groups

MAJOR RECOMMENDATIONS

Stewardship & Sustainability

1. Volunteer recruitment, retention and training programs to define what's needed of volunteers and how they can help.
2. Improve marketing efforts related to Water Trails by forming partnerships with the media to assist in spreading the word.
3. Conduct educational outreach programming, particularly with local schools.
4. Provide information to users about access point ownership issues, where camping is available and other private property concerns so that users know where to and where not to go.

Rainbow of Users/Diversifying the Audience

1. Make sure that programs and activities are culturally appropriate for everyone considering differences in cultural expectations.
2. Develop and implement additional models for working with school districts.

Making Water Trails More User Friendly

1. Consider distances between access points to assure that Water Trails are accessible to families with small children.
2. Engage the younger generations and inner city/urban populations through educational programming with schools.
3. Develop creative marketing strategies to attract new users (i.e., geocaching).
4. Improve water quality so that new users have a quality recreation experience.
5. Provide free opportunities for people to use Water Trails and grant programs for organizations to get free equipment.

Insurance Liability

1. A risk management entity is needed to provide assistance for problem areas along trails.
2. Develop multi-county authorities to provide umbrella insurance policies.

Log Jams

1. Work with property owners for access to blocked areas, for permission before applying for grants and to determine ownership of the trees.
2. Leave root structure intact to prevent erosion.
3. Get statewide agencies involved.

Long-Term Management Strategies

1. Provide training for volunteer managers.
2. Identify successful models.
3. Coalitions as a model for long-term management.
4. Provide templates for: management plans for sustainability and forming a functioning coalition.

Marketing

1. Coordinate statewide marketing within and throughout the PA Water Trails System taking into account local considerations.
2. Focus on safety, stewardship and participation.
3. Develop a new web site that is a coordinated effort among state agencies including a database of groups.
4. Use new methods of advertising.
5. Market all of the ways that people can get involved with Water Trails including habitat and invasive species.

Maintaining the Primitive Nature of a Campsite

1. Policy recommendation – for islands develop a policy that facilities are on the shore at a PFBC access point.
2. Marketing strategy – “You pick up after your dog don’t you?”, “Going to the bathroom is fun.”
3. Develop guidelines for the minimal components that are needed for a primitive campsite.

Creating Realistic Expectations for the Public

1. Provide information to users about what they can expect so that users are prepared for the current conditions. First time users are not going to want to purchase a guide so there should be free information readily available.
2. Provide adequate signage to users and development of a statewide template for signage.
3. Develop educational components to Water Trail development.

Signage for Water Trails

1. Circulate standard sign templates to all organizations.
2. There is a need for a committee to look at the standardization throughout the Water Trails signage system and develop uniformity.
3. Coordinate with PennDOT to get signage in place.
4. Provide resources of where and how to get signage made.

Susquehanna River Water Trail System

1. Work together on funding applications to avoid competition among groups.
2. Establish guidelines for consistent signage.
3. Initiate an interstate coalition of Water Trail groups.
4. Develop a forum for connecting all of the Water Trails.
5. Develop a joint system or organization for management of the Water Trails (i.e., Susquehanna River Trail Association or Susquehanna Greenway.)

6.0 Stewardship and Conservation Plan Recommendations

In order for the Susquehanna River Water Trail-West Branch to be viable for future generations, the following are key issues needing to be addressed:

- Develop a volunteer stewardship network
- Secure reasonable and safe access to and along the trail
- Sustain and enhance the environmental integrity of the trail and corridor
- Provide safe, pleasurable and diverse trail experiences
- Adopt a functional organizational structure for management of the trail

The following recommendations were developed to address these needs.

Priority: High (1-3 years); Medium (3-5 years); Low (5-10 years)

Develop a Volunteer Stewardship Network	
1. Create a network of volunteer Water Trail Stewards to “adopt” access sites and/or sections of the Water Trail. (Steering Committee, County Conservation Districts, Water Trail Manager)	High
2. Perform seasonal and routine access site checks (see form in Appendix C) and submit to regional coordinator. (Trail Stewards)	High
3. Conduct access site maintenance as needed, and permitted by the landowner. (Trail Stewards)	High
4. Install and monitor log books at access sites to collect anecdotal information and develop a baseline of data related to trail use. (Water Trail Manager, Steering Committee, Trail Stewards)	Medium
5. Participate in, and/or organize, cleanup events as needed for problem litter areas. (Water Trail Manager, County Conservation Districts, Clinton County CleanScapes, Solid Waste Authorities, Municipalities)	High
Secure Reasonable and Safe Access	
1. Research ownership of land at portages; contact and work with landowners to develop safe, convenient means for portage around obstacles, dams and potentially hazardous areas. Work with PFBC for buoy placement that is safe and best serves Water Trail users. (Water Trail Manager, PFBC, Landowners/Managers)	High
a. River Mile 174.5 - public river access for re-entering the river after portaging around Dudley Tonkin Raftsmen’s Memorial Dam is needed. Presently there is no clear indication of where to re-launch, and hydraulic currents below the dam make this a safety concern.(4A-Corridor Recommendation Maps)	High
b. River Mile 165 to River Mile 164 – there is a need to secure and develop public river access for exiting above the Reliant Power Plant dam. This dam has	High

dangerous hydraulic currents and elevated water temperatures making it a hazard area. The area of common use for exiting is on private land, where the landowner has given verbal consent for public use. Securing long-term public access that meets the current safety standards above this dam is critical to long-term sustainability of the Water Trail. (4B-Corridor Recommendation Maps)	
c. River Mile 163 to River Mile 160 - secure public access for re-entering the river after portaging around the Reliant power plant dam. The landowner at River Mile 163 has given verbal consent for public use of their property, but parking is limited and the power plant has recently posted signs reading "Warning - water temperatures may be significantly elevated - proceed with caution." An alternate site should be secured downstream, where more parking is available and water temperatures are lowered. (4C-Corridor Recommendation Maps)	High
d. River Mile 69.8 – the current portage around the Hepburn Street Dam requires you to exit the river and carry your boat while walking along the face of the steep, rock-lined embankment of the levee. This is physically challenging and considered a safety concern. Extension of the portage to the top of the levee would provide paddlers connection to the Susquehanna Riverwalk, with access to downtown Williamsport for food and overnight stay. Ideally, the portage would be integrated into the proposed re-design of the fish passage structure at this location. (13A-Corridor Recommendation Maps)	High
2. Establish designated takeout areas in case of medical, flash flooding, or other emergencies. (Water Trail Manager, Steering Committee, County and Local Emergency management)	Medium
3. Work with landowners to develop river access sites as needed where there is presently public ownership or control of land. (Water Trail Manager, local conservancy/land trust, landowners, PFBC, DCNR, SGP)	(see the following)
a. River Mile 207 - at Scout Park in Mahaffey Borough. (2B-Corridor Recommendation Maps)	High
b. River Mile 176 – at the Lawrence Township proposed river access located just upstream of the Hyde Bridge. This would provide deep water access and day-trip opportunities to local population centers. (3D-Corridor Recommendation Maps)	High
c. River Mile 69.8 – this would allow for extension of the portage at the Hepburn Street. For more information see Recommendation 1d above. (13A-Corridor Recommendation Maps)	High
4. Develop working relationships with landowners and secure public ownership or long-term agreements for continued public use of river access areas where verbal consent has been given: River Mile (RM) 204, RM143, RM53, RM22, RM13. (Water Trail Manager, local conservancy/land trust, landowners, PFBC, DCNR, SGP)	High
5. Develop working relationships with landowners and managers at campgrounds within the corridor. Secure, develop, and improve the following camping opportunities: (Water Trail Manager, local conservancy/land trust, landowners, PFBC, DCNR, SGP)	(see the following)
a. River Mile (RM) 187, RM152 - 147, RM143 – 132, RM126 - RM118, RM113 – 110, RM 89 – 81. For detailed information on these sites refer to the trail gap analysis, section 2e, and the Corridor Recommendation Maps.	High
b. River Mile (RM) RM97 – 94, RM 67 – 58, RM12. For detailed information on these sites refer to the trail gap analysis, section 2e, and the Corridor Recommendation Maps.	Medium
6. Seek additional river camping opportunities including conducting an inventory of public lands and research of island ownership. Contact landowners to secure consent for designating camping on these lands. (Water Trail Manager, DCNR, PGC, landowners, local conservancy/land trust)	Low
7. Secure and develop potential additional / alternative public access: (Water Trail Manager, local conservancy/land trust, landowners, PFBC, DCNR, SGP)	(see the following)
a. River Mile (RM) 144 – 134, RM114 – 110, RM56 – 55. For more detailed	High

information refer to the trail gap analysis, section 2e.	
b. River Mile (RM) 222 – 214, RM195 – 192, RM183-176, RM104, RM69.5 – 68, RM66 – 64, RM20 – 18, RM4 –1. For more detailed information refer to the trail gap analysis, section 2e.	Medium
c. River Mile (RM) 78-73, RM52 – 49. For more detailed information refer to the trail gap analysis, section 2e.	Low
Sustain and Enhance Environmental Integrity	
1. Maintain contact with key agencies and organizations including the DEP, PFBC, West Branch Restoration Coalition, Clean Water Institute at Lycoming College, Susquehanna River Heartland Coalition for Environmental Studies, and the County Conservation Districts to keep abreast of current water quality conditions and initiatives. (Water Trail Manager)	Medium
a. Share relevant field observations with key agencies and organizations. i. Support the efforts of the West Branch Restoration Coalition to remediate AMD and County Conservation Districts to improve water quality. ii. Keep informed of the Susquehanna River Basin Commission’s approval of withdrawals that could affect navigable river levels.	Low
b. Collaborate with water quality partners; provide letters of support, offer them opportunities at Water Trail training to provide education about water quality projects, improvements and needs.	Low
2. Develop and implement a strategy to work with municipalities to raise their awareness of landscape character as a valuable resource. (DEP, DCNR, County Conservation Districts, SGP, local conservancy or land trust, County Planners)	Low
a. Recognize and conserve viewsheds	Low
b. Maintain and enhance the integrity of floodplain and riparian corridor functions	Medium
c. Minimize impacts to water quality as related to the draw down from consumptive industrial processes, thermal discharges, habitat fragmentation from land development for transmission pipelines, etc.	Low
3. Work with county and local governments to identify potential areas for riparian buffer restoration on publicly held lands, starting with Water Trail access sites. (Access site owners/managers, County Conservation Districts, PFBC, DEP, USFWS)	Medium
4. Promote the use of conservation easements for protecting riparian areas. (Water Trail Manager, SGP, County Planners, County Conservation Districts, local conservancy or land trust)	Medium
5. Protect threatened and endangered species by maintaining, restoring, and /or enhancing native riparian habitats. (DCNR, USFWS, PFBC, SGP, County Conservation District, local conservancy or land trust, Water Trail Manager)	Medium
a. Preserve ecologically diverse riparian areas; plant with native species that provide diversity in the plant strata and support the local food chain	Medium
b. Limit the removal of natural vegetation to the greatest extent possible	Medium
c. Provide buffer areas and filtering/infiltration areas between parking areas and waterways	Medium
d. Encourage landowners along the river to maintain vegetative buffers	Medium
e. Create conditions that allow for natural re-colonization of native plants	Low
f. Re-establish an ecologically functional shoreline/riverbank with locally native plants	Medium
g. Educate Water Trail users as to responsible action and/or protocols when encountering species of concern (threatened or endangered) within the corridor	High
h. Develop and improve access sites using low impact methods that demonstrate habitat value and work with natural systems. i. Promote the adherence to the “Sustainable Sites Initiative - Guiding Principles of a Sustainable Site.”	High

ii. Grade sites to minimize earth disturbance, and promote runoff as sheet flow across undisturbed land.	
i. Angle river access ramps upstream to reduce impacts from hydraulic scouring during high water conditions.	Medium
6. Develop an action plan for invasive species control.	(see the following)
a. Provide training opportunities for landowners, managers, Water Trail users and stewards to recognize invasive species (Penn State Cooperative Extension, USFWS, DCNR BOF, DEP, County Conservation Districts, SGP, Water Trail Manager)	Medium
b. Engage USFWS, DCNR BOF, Biodiversity, and local universities to provide guidance for invasive species control. (Water Trail Manager)	Medium
c. Assist with monitoring pilot restoration projects (Trail Stewards in collaboration with local universities.)	Low
d. Provide educational information to volunteers and access site landowners regarding best management practices, including land development practices, invasive species and vegetation management, the use of native plants, the function of riparian areas and the use of vegetation as river bank stabilization. (Penn State Cooperative Extension, USFWS, DCNR BOF, DEP, County Conservation Districts, SGP, Water Trail Manager)	Medium
7. Support the construction, upgrade, and maintenance of fish passage structures at three dams that currently create impediments for migratory fish and aquatic species. The construction of these facilities will help to restore viable habitat for migratory species on the West Branch, which would enhance the overall Water Trail experience. (PFBC, USFWS, ACOE, DCNR, SGP, Water Trail Manager)	Medium
8. Promote sustainable development of trail facilities by promoting the principles of the "Sustainable Sites Initiative", Best Management Practices (BMP's), and the Chesapeake Conservation Landscaping Council's "Conservation Guidelines" for developing site improvements such as access sites, parking, and camping. (Water Trail Manager, PFBC, PennDOT, DCNR, site owners/managers, county planners)	Low
a. Provide signage to increase public awareness of site sensitive design for improving water quality and relating their experience to the Chesapeake Bay.	Medium
9. Request DEP and other appropriate state and federal agencies research and evaluate concerns over thermal discharges with excessive temperatures. (Water Trail Manager)	High
Provide Safe, Pleasurable and Diverse Experiences	
1. Work with PFBC, Trail Stewards, and landowners/managers to continue identifying safety concerns on the trail; post safety warnings at known points of concern including dams and other structures, rapids and other areas that are challenging to navigate, degraded or unsafe water conditions. (Water Trail Manager, PFBC, owners/mangers)	High
2. Convene state and federal agencies to develop and implement plan to address river degradation caused by bank erosion, deposition, and river obstructions (example: the upper region of the River from Cherry Tree to Patchinville). Identify and remove areas of debris and sediment that pose a threat to the Water Trail navigability. (USFWS, DEP, PFBC, SGP, County Conservation Districts, County Planners, Water Trail Manager)	Medium
a. Work to restore a healthy river channel, stabilized stream banks and navigable waterway.	Low
b. Maintain contact with SRBC regarding observed changes in water levels.	Medium
3. Convene stakeholders to explore the possibility of controlled releases from the Curwensville Dam to mitigate the impacts of thermal discharges during low flow periods and to provide river flow for special river-paddling events. (Clearfield County	Medium

Recreation Authority, ACOE, DEP, PFBC, SRBC, Water Trail Manager)	
4. Adopt signage design standards for consistency along the Water Trail. Coordinate with the other Susquehanna Water Trails to ensure signage consistency. (Water Trail Manager, steering committee)	Medium
a. Provide signage at portages to clarify use areas and promote public safety. (Water Trail Manager, landowners/ managers and PFBC)	High
b. Provide discreet signage for: orientation on the trail (on bridges), roadway and directional information to sites, site identification, local land-based resources, and education/interpretation.	Low
5. Explore opportunities, including livery services, to provide connectivity to local food, lodging and local businesses and for attracting diversified user groups to the Water Trail. (Water Trail Manager, local business owners)	Low
6. Develop a Water Trail website to serve as a clearinghouse for centralized information and keeping information current. (Water Trail Manager, local universities)	Medium
c. Provide link to river gauge readings. Develop and post information regarding what river levels mean in terms of local Water Trail viability.	Medium
d. Post information about local and regional history, points of interest, and local businesses to promote and support local economies.	Low
7. Work with landowners and managers to implement recommendations of the access site inventory and analysis (section 2d) to address issues of ADA compliance for Universal Accessibility, adequate parking, signage and way-finding. (Water Trail Manager, site owners and managers)	Medium
8. Identify or develop additional sites along the trail for obtaining potable water. (Volunteer Trail Stewards, Water Trail Manager)	High
9. Communicate information about existing facilities -or lack thereof- at access sites and on the trail website, to manage trail user expectations. (Water Trail Manager, site owners/managers)	Medium
e. Post 'distance to next port-a-pot', educational information about 'leave no trace' principles, primitive camping ethics, proper disposal of human wastes, and litter control.	High
f. Provide signage at access point parking areas directing people to use the next access site if the parking lot has reached capacity.	High
g. Identify 'respite areas' along the trail – public parks and spaces for stopping, resting or stretching.	Low
h. Identify and communicate cell phone reception areas to trail users.	Low
10. Update maps and guides on a regular basis to keep information current about existing accesses and to add new access and camping areas as they become available. (Water Trail Manager)	Medium
11. Evaluate the Trail corridor to determine if any special regulation areas are appropriate. (Water Trail Manager, PFBC)	Medium
Adopt a Functional Organizational Structure for Trail Management	
1. Create a functioning management organization to provide leadership, raise funds for Water Trail improvements, and actively support and unify local groups of Water Trail volunteers. (Volunteer Trail Stewards, Water Trail Manager)	High
2. Develop and implement membership campaign to build a network of constituents and raise funds for the Water Trail. (Water Trail Manager, Volunteer Trail Stewards)	Medium
3. Provide report forms for recording site observations and work accomplished. (Volunteer Trail Stewards, Water Trail Manager)	High
4. Research liability issue(s) related to volunteers performing maintenance, and create a risk management plan (may include waivers, insurance, etc.). (Water Trail Manager)	High
5. Monitor levels of use on the trail at access points and camping areas using trail steward reports, trail registries, and web-based data input. (Volunteer Trail	High

Stewards, and Regional Coordinators)	
6. Analyze trail use levels as related to site impacts to determine if there is a need to control overuse and over-crowding. (Landowners/Managers, Water Trail Manager)	Medium
7. Work with public access site managers to evaluate maintenance protocols that can also be applied to private sites. Provide local volunteers with training and a checklist to be used as guidance for providing consistent standards of care for access sites throughout the river trail. (public site managers, Water Trail Manager)	High
8. Develop a landowner agreement to document the level of maintenance and tasks that the landowner will allow, and the duties that the Volunteer Trail Steward will undertake. (Landowners/Managers, Water Trail Manager)	High
9. Re-evaluate the MOU for the Water Trail Manager a year prior to renewal/signing. (Water Trail Manger, DCNR, PFBC and CBGN)	Medium

7.0 Conclusion

Presently the stewardship of the Susquehanna River Water Trail-West Branch is by voluntary compliance, and it is recommended to remain that way. Integral to the success of this model for stewardship is the development of a volunteer stewardship network to assist with monitoring trail use and conditions. Equally important is the need for the Water Trail Manager to provide public education for low-impact trail use and “Leave No Trace” ethics, to promote people to voluntarily care for the properties that they visit. It is the intention of this plan to continue with a voluntary model, monitoring use, impacts and change.

This plan is intended to establish a benchmark of existing conditions, identify potential opportunities and recommend desired improvements for making the Susquehanna River Water Trail-West Branch a viable and sustainable recreation resource for future generations. This plan will need to be evaluated periodically to reflect new opportunities, challenges, and changes within the corridor, and to determine new recommendations for continued improvement. At a minimum this review process should occur every five years.

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Maine Department of Conservation, Bureau of Parks and Lands, December 2003.

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<http://www.fishandboat.com/anglerboater/2000/nd2000/volropr.htm>

PennDOT Adopt-a-Highway Program
<http://www.dot.state.pa.us/Internet/Bureaus/pdHwyBeau.nsf/infoAdoptHighway?readform>

Adopt-a-Mile Program: Allegheny Valley Trails Association (AVTA)
<http://www.avta-trails.org/adopt-a-mile.html>

DNR - Division of Natural Resources Education Center: Adopt-A-River Publications
<http://www.in.gov/dnr/nrec/8361.htm>

<http://www.dcnr.state.pa.us/forestry/wildplant/invasive.aspx>

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"Common invasive species in riparian areas:" (Alliance for the Chesapeake Bay)
<http://www.acb-online.org/pubs/projects/deliverables-145-1-2004.pdf>

<http://www.naturalbiodiversity.org/invasives.shtml>

<http://www.naturalbiodiversity.org/handbook.shtml>

APPENDIX A

Questionnaire Tabulation

The following is a summary of comments received through the distribution of a questionnaire to key stakeholders and people throughout the region associated with the Water Trail. Total numbers may vary throughout, reflecting the fact that everyone did not answer all questions. Many of the questions required written comments (not multiple choice); these comments have been organized under general headings for organizational purposes. These are comments received from the public. The recommendations being made from this plan can be found in section 6 on page***.

1. What are the WBWT's strongest assets?

Experience of Natural Environment

- 9 Wilderness, remoteness; Karthaus to Keating is probably the most remote area in Pennsylvania and gives paddlers a great opportunity to escape the sounds of civilization; serenity.
- 8 Scenery/natural beauty/fall foliage
- 2 Undeveloped riverside land
- 2 Interesting flowing water, but not dangerous; floatable for long periods in most years
- 2 Length of a beautiful waterway
- 2 Wildlife
- 1 American shad reintroduction
- 1 Chest Falls white water
- 1 Lack of development
- 1 Bilger's Rocks
- 1 Curwensville Lake
- 1 Very few jet skis
- 1 Limited use by people

Ease of Use

- 5 Accessibility to river; accessibility by many residents in the river towns (lower region)

Water Quality

- 3 AMD impacts are reversing; improving quality of water
- 3 Fishing (in some parts)
- 1 Volume of water flow even in a drought (Williamsport to Muncy)

Cultural/Historical Experiences

- 3 Cultural history
- 2 Sights on the river, diversity of backwoods country and small city areas
- 2 Small village/towns adjacent to river

Community Benefit

- 1 Untapped resource to promote area businesses

2. What elements/aspects of the WBWT would you like to see modified or improved?

Camping needs

- 5 More camping areas; reconcile the land management / ownership issues to allow camping in State Game Lands – possibly implementing a land management overlay (similar to Appalachian Trail) or remove pressure from State Game Lands; provide alternative camping. Lack of legal / approved campsites: considerable amount of

camping does occur upstream from Karthaus on State Game Lands and PFBC sites in violation of PFBC regulations, or on private land without permission.

Access Needs

- 4 More boat launch facilities (every 3-5 miles) so you can paddle the river after work or school
- 3 Access points vary from excellent (Karthaus) to awkward and without future certainty (Rolling Stone Bridge), need better access at Keating.
- 2 More parking areas
- 2 Some of the boat launches could be improved
- 1 More restrooms; port-a-pot at every access
- 1 Both shallow AND deeper water access
- 1 Portage at Williamsport is a safety issue, especially for sojourns; need a stabilized surface to walk on
- 1 Need a safe portage around Shawville Dam

Stewardship Needs

- 3 Trash removal, stream clean ups; dumping over banks
- 2 AMD remediation; fishing impacted
- 2 The river itself – much is being done now, and it takes time; water quality improved, it continues to improve over time -let's help it continue getting better
- 1 Greatly increase the amount of river frontage and river corridor land in conservation easements and public ownership
- 1 Heightened awareness of thermal impacts from Shawville power plant. Public pressure applied upon DEP and Reliant Energy to set thermal limits

General Trail Needs

- 4 More and better signage; roadway directional, on river, points of interest identified
- 2 Centralized information web site with current conditions; stream flow = ease of navigation. charts and links to USGS gauge stations, local schedule of events, places to stay/eat, etc.
- 1 DCNR-BOF is proposing to build an access near Bakers Run (halfway between Lock Haven and Hyner)
- 1 Funding request forms
- 1 Scheduled releases of water from Curwensville Dam; need ACOE collaboration.
- 1 Logging/river rafting history more noted on next edition of trail guide
- 1 Headwater area (10 miles above water trail) should be noted on next edition of trail guide

3. To what degree have you noticed water trail use increase since the publication of the Water Trail maps?

Very Significantly	Significantly	Moderately	Insignificantly	Not at All
0	5*	7	5**	1

*Majority from outside the region; water trail is on list of people's list of "things to do". Many are interested in the historic aspects of the trail.

**It would be higher if it was promoted as family/couple package mini-vacation deals (i.e. travel agency or outfitter advertising weekend/week-long all inclusive trips with camping or overnight accommodation choices, etc.)

4. Please indicate the importance of the following amenities associated with your use of a trail. (Please check the appropriate column for each amenity listed)

Amenity	Very Important	Important	Not Important
Restrooms	8	6	4
Picnic Areas	3	9	6
Parking Lot with Trailer Spaces	6	9	3
Scenic Landscapes	12	3	3
Remote Nature Experience	14	2	2
Historic and Cultural Points of Interests	12	6	
Camping Areas	10	8	
Trail Access to Overnight Lodging	4	5	9
Trail Access to Restaurants	5	3	9
Viable fishing waters	7	7	2
Cellular phone service	3	6	9
Other - Turn-a-round for trailers	1		
Other -System for Emergency Management (vs. cell service)	1		
Signage	1		

5. Do the access site amenities influence your decision regarding which access sites to use?
 Yes - 5 No - 10 N/A - 2 (don't have them yet)

6. Please list amenities in order of importance (i.e. restrooms, trailer parking, picnic area, access to food etc.)

#1 importance

- 5 Restrooms (cleaned and maintained)
- 3 Location; launches, strategic access to river
- 2 Parking
- 2 Camping
- 1 Level ground
- 1 Cell phone reception
- 1 Scenic landscapes

#2 Importance

- 2 Scenic landscapes / aesthetics/nature experience
- 2 Parking
- 2 Trailer parking
- 2 Access to food (and directions)
- 2 Picnic areas
- 1 Trash drop-off for river travelers
- 1 Overnight accommodations with food and adult beverages
- 1 Reasonable access to the river
- 1 Restrooms
- 1 Historic points of interest

#3 Importance

- 5 Restrooms
- 2 Picnic/shore access areas
- 1 Clean and maintained campsites that are easy to find from the river

- 1 Passive recreation; shade, places to site, rest, look at river
- 1 Scenic landscapes/remote nature experiences
- 1 Access to lodging (and directions)
- 1 Access to food
- 1 Public access

(#4 Importance)

- 1 Picnic
- 1 Parking
- 1 Historic features
- 1 Trailer parking
- 1 Camping

(#5 Importance)

- 1 Restrooms

7. Does the landscape character/experience influence what section of WT you use?

Yes - 12 No - 5 N/A - 1

8. Please list the top five characteristics that influence what section of WT you use. (i.e. distance from home, distance between access points, parking for trailers, remote experience, historical intrigue, etc.)

#1 importance

- 6 Distance to river access (from home)
- 3 Remote experience
- 3 Distance between access points
- 2 Water levels; water features; current, rocks
- 2 Launches; ease of access
- 1 Scenery

#2 importance

- 3 Remote experience
- 3 Distance from home
- 2 Historical intrigue
- 2 Parking locations
- 1 Trailer parking / turn-a-round
- 1 Ease of access
- 1 Water depth dependability
- 1 Type of outdoor setting (may change seasonally)

#3 importance

- 2 Remote experience
- 2 Distance from home
- 1 Water character (current, rapids)
- 1 Is it fishing season?
- 1 Historical significance with an educational component
- 1 Distance between access points
- 1 Experience on the river

#4 importance

- 3 Distance between access points

- 1 Reasonable access
- 1 Historical experience
- 1 Ability to park safely
- 1 Parking
- 1 Restrooms

#5 importance

- 2 Distance from home
- 1 Scenery
- 1 Can I do multiple activities there?
- 1 The productivity/health of the river – i.e. can fish be caught for dinner, etc.
- 1 Remote experience

9. What capacity issues exist along the WB Water Trail? (note location by WBWT map river mile or landmark)

Access needed:

- 4 RM110 Keating, at the confluence of the Sinnemahoning and West Branch
- 2 RM 143 Rolling Stone – this is informal and rough
- 1 RM 94 North Bend
- 1 RM 90 Hyner
- 1 RM 97 develop river access at Bucktail Medical Center (Renovo, river right)
- 1 A planned access between Renovo and Lock Haven (Baker's Run access)
- 1 RM69 in the City of Lock Haven in their Memorial Park
- 1 RM69 - RM62 Between (Lock Haven) and (Pine Access); excellent fishing and paddling in this area but no access.
- 1 RM 217 Burnside has no access
- 1 RM 209 McGees Mills
- 1 RM164 Upstream of Shawville
- 1 Areas have been identified in the Clearfield County Comprehensive Plan. Although many launches do exist, many are commonly accepted launches, rather than official. They need stabilization of stream banks and other improvements. The only launches not in need of modification or improvement are at the Hyde Bridge, and Clearfield Borough – since they were just completed.
- 1 Every 'river town' should have a highly visible river access that is used by a wide range of residents (not just boaters)

Parking needed:

- 5 RM 110; Keating, road to river (needed for fire access) is often blocked.
- 2 RM 143; Rolling Stone
- 1 RM 193; Lumber City
- 1 RM 164 and 162 ; upstream and downstream of Shawville
- 1 RM 132; Karthaus (heavy use on holiday weekends)
- 1 There is enough parking now (lower region); this won't be an issue if parking is included with improvements
- 1 RM 94; North Bend
- 1 RM 90; Hyner
- 1 Parking areas should be environmentally sensitive (fitting in and complimenting the river landscape and not dominating the view)

Camping needed:

- 6 RM 132 – 110; upstream from Karthaus on State Game Lands; not clear to trail users. most camping occurs illegally on State Game lands at the mouth of Bougher and Spruce Runs. Bureau of Forestry land ground suitable for camping exists across the river from these drainages, but is inaccessible due to limitation on crossing the existing railroad tracks it would be nice to see a MOU with the Game Commission to allow camping on SGL 100 and 321.
- 1 RM 143; Rolling Stone, private
- 1 RM 149; Deer Creek, FBC
- 1 RM 97-70; overnight camping is needed between Lock Haven and Renovo (majority of people paddle Karthaus to Keating and end at Renovo because there is no camping)
- 1 RM 70-42; camping needed towards Williamsport
- 1 RM 132-62; between Karthaus and McElhattan people are camping wherever they want
- 1 Camping may also occur at Coleman Siding. Camping is proposed for the new Bakers Run access and several islands in the middle of the river are being evaluated for suitability.
- 1 RM 35-27; island camping needed between Montoursville and Muncy
- 1 RM 27-0; primitive, overnight camping options needed in Lower West Branch (Muncy –Confluence with Main Stem). A primitive camp site should be developed on either Milton State Park or on the adjacent Davis island (between Milton and West Milton).
- 1 Indicate permissible camping areas along water trail
- 1 RM 187; cabins at Curwensville Lake and other points along the West Branch. Adding camping near Mahaffey, Shawville and in the Karthaus areas would stimulate multiple day ventures – current available camping area are so few and far between that it makes longer continuous sojourns impossible.

Signage needed:

- 4 Along the river: consider mile markers ever 5 miles. Being addressed in part, but consistent low-impact educational/wayfinding signage is needed along the entire corridor
- 2 Along highways
- 1 Access at Rolling Stone is ambiguous; no signage bur obvious usage previously by others.
- 1 RM 90 Hyner
- 1 With changing water levels the signage must be durable and still blend with the environment; tough task
- 1 Bridges that cross the West Branch – signage that can be read by paddlers that state the river mile and name of bridge, town, county. All camping sites should have universal and subtle signage, etc.
- 1 Signage needed at all points
- 1 Alert paddlers of upcoming access points, camping areas, etc.
- 1 Mile markers and hazard warnings
- 1 We need better signage on Interstate and all major highway bridges that celebrate the Susquehanna River, Susquehanna Greenway, and the River Trail.

Other:

- 1 We must keep the river clean of garbage
- 1 Kayak storage along the river at cities is going to become an issue if the cities want the travelers to visit the downtowns
- 1 Renovo to Jersey Shore there's state lands, and local access connected to the river. I would like to see those locations improved
- 1 Need to indicate emergency access points (medical attention etc.)
- 1 We need to better interpret the natural and cultural resources of the river. This can be done with signage, packaged tours, guidebooks and maps.
- 1 Need to establish designated takeout areas in case of medical or other emergencies

- 1 Need to designate "safe spots" in case of flash flooding
- 1 need to identify and disseminate cell phone reception areas

10. Which access sites in your river region most need improvements? What improvements?

Access site river mile...

RM 227 (Cherry Tree)

- 1 Remove sand bar at canoe access

RM 217 (Burnside)

- 2 Develop access
- 2 Provide directional signage to site
- 1 Determine ownership of land
- 1 Explore potential access at previous PennDOT bridge site (iron bridge)
- 1 Identify private land

RM 209 (McGees Mills)

- 1 Clear undergrowth
- 1 Explore potential site downstream that would be more Universally Accessible

RM 207 (Mahaffey)

- 1 Develop access

RM 193 (Lumber City)

- 1 Develop access
- 1 E&S controls

RM 183 (Curwensville)

- 1 Develop access
- 1 E&S controls

RM 182 (Hogback/Porter Bridge)

- 1 Develop access
- 1 E&S controls
- 1 Improve parking to accommodate multiple uses types since this is also along Rails to Trails.

RM 164 (Shawville)

- 1 Develop access

RM 143 (Rolling Stone)

- 1 Private land, secure access site use
- 1 Signage needed, access is ambiguous
- 1 Improve parking
- 1 Develop access

RM 110 (Keating)

- 3 Develop access
- 3 Parking is needed

RM 97 (Renovo)

- 1 Access is a mess

RM 94 (North Bend)

- 4 Parking is needed
- 1 Launch improvements
- 1 River bank needs stabilized
- 1 Picnic area

RM 90 (Hyner)

- 3 Parking is needed
- 2 Maintain sediment deposits – (possible structure for control of stream erosion/deposition)
- 1 New launch is needed
- 1 River bank needs stabilized

RM 83.4 (Baker's Run)

- 1 Parking is needed
- 1 New boat access

RM 27 (Muncy)

- 1 Develop new access at the Muncy Heritage Park
- 1 This site fills with sediment, it can be impossible to use at lower water levels

RM 16 (Watsontown)

- 2 The in-town (not FBC access) was basically destroyed during highway bridge construction. Clear brush and address mud at bottom of lawn road. Clear and stabilize path directly down bank to the water; construct steps with wooden slide for 'pulling' boats up and down the slope.

RM 11 (Milton)

- 1 Need a river landing in the heart of the town (east side of the river just north of the Route 642 bridge).
- 1 Silt deposition at access makes canoe/kayak launch difficult

RM 7 (Lewisburg)

- 1 Develop a public access at the Route 45 bridge.

General

- 1 Between Renovo and Jersey Shore needs improvements.
- 1 Renovo to Lock Haven needs additional access.

Conservation – the “planned management of a natural resource to prevent exploitation, destruction or neglect.”(Webster’s Collegiate Dictionary)

11. What do you believe are the three biggest “conservation” needs or challenges for the WBWT?

Water Quality

- 5 Clean up Abandoned Mine Drainage (AMD); restoring fishable streams to the West Branch
- 3 Improve water quality
- 2 Siltation, sediment deposition and erosion; especially within Clearfield County
- 2 Gas leasing activities, especially any permitted waste water discharge that includes salt and heavy metals flowing into the West Branch
- 1 Pharmaceuticals reaching the wastewater treatment plants and not being removed from the water before being discharged into the river.

- 1 Limit thermal discharge from Shawville power Plant – kills fish and is injurious to boaters

Stewardship

- 3 Litter control
- 3 Keep it clean and natural; litter: not just small items, but large items left along the river bank, these get washed into the river at high water times
- 2 Carrying capacity and quality experience; balance of providing quality nature / recreation experience without harming the resource.
- 1 Strategically preserving (for public access and recreation) land in the watersheds, and stream corridors being restored
- 1 Human waste
- 1 Educate boaters about the hazards of drinking and boating, and the environmental and aesthetic impact of littering campsites and sinking beer cans (river bottom is lettered with cans from Shawville through Sproul Access.)
- 1 Approved refuse and recycling points
- 1 Too much development along the river ruining the wilderness experience
- 1 Management
- 1 Protect land from future development
- 1 Maintain and protect the riparian buffer that exists
- 1 Responsible industrial development that doesn't further harm water quality
- 1 Enhancement – stocking fish, aquatic bug life, plant life

Access Issues

- 5 Maintain reasonable access; conserve and keep the existing access points; act now to acquire land for additional access points
- 1 Random parking
- 1 Provide transport service with possible guide service. (Reduce parking issues along trail, expose first timers to appropriate use and turn them into guides themselves.)

Camping

- 2 Develop primitive camping on the island at the mouth of Pine Creek/Jersey Shore (at tips of islands)
- 1 Impacts of heavy camping at mouths of stream drainages
- 1 Camping issues (cleanliness)
- 1 Island ownership/camping. Renovo to Lock Haven – allow primitive camping on islands

General Issues

- 1 Scheduling water releases from ACOE dam
- 1 Agencies must work closely with the local river groups. (FBC, DCNR, DEP, Game Commission, PennDOT)

12. What areas in your region have special conservation needs? What are those needs?

Corridor

- 2 AMD remediation; Clearfield County; scattered tributaries
- 1 Improving water quality
- 1 Protecting the wild and scenic values
- 1 Maintain riparian buffers along the trail; logging permits should acknowledge and respect the riparian buffers
- 1 Managing access and user behavior
- 1 Acquire land along the river for public access and trails (with special focus on rail corridors)
- 1 Water conservation

RM 227

- 1 Island that formed (sediment deposition) in river after Cherry Tree canoe launch was dedicated is causing problems for canoeists, especially in low water.

RM 222 to 224

- 1 Large trees and brush are obstructing the river. This is a difficult area to portage because of high river banks. Indiana County prepared a study to identify the problems, but there has been no action to remove the river blockages.

RM 193

- 1 Lumber City Bridge – clean up and restoration will take multiple agency partnership. PennDOT roadway creates part of E&S problem, RJ Corman Railroad parallels the river.

RM 186

- 1 Facilities at Curwensville Lake are in deplorable condition and cannot handle the current capacity. Also, camping and other amenities need improvements to their respective areas to prevent further earth disturbance. Selective plantings need completed to discourage invasives.

RM 164

- 1 Limit thermal discharge from Shawville Power Plant. Impacts 11-mile stretch of river; this kills fish and is injurious to boaters.

RM 136

- 1 Mine drainage at the confluence with Red Moshannon

RM 123

- 1 Heavy impact from too much camping (Spruce Run)

RM 121.5

- 1 Heavy impact from over-use (Bougher Run)

RM 93

- 1 River bank erosion (downstream of Renovo)

RM 41.8

- 1 Lycoming Creek/Route 15 Highway work. PennDOT needs to protect the river also, hand – in – hand.

RM 27-30

- 1 Great Bend near Muncy – brush and vegetation are damaging historic canal wall

RM 25

- 1 The old chimney from a former hotel stop along the canal (across from Montgomery Boat Club); this is a nice site for resting. Is this private or public? Can this be preserved or used for camping?

RM 16

- 1 White Deer Creek was majorly changed at the river during a flood event

RM 11

- 1 Purchase of Davis Island (island located immediately upstream of Milton Island State Park) for conservation and primitive camping uses.

RM 8

- 1 Lewisburg Railroad bridge could be used as a walking bridge; keep abreast of old bridges as they are decommissioned.

RM 7.6

- 1 Montandon Marsh –work with the Sand and Gravel operation to plan for the reclamation / restoration of the quarry site; potential to create a high-quality wetland habitat that will enhance and buffer the existing (protected) section of the marsh.

Case Studies: As part of our work we will prepare four (4) case studies for WT access sites. We will develop site-specific examples for improvements that protect water quality, promote “green” land development, and could be readily implemented to improve these sites.

13. Are there specific West Branch WT access sites that you would nominate as Case Study sites?

RM 227 – Cherry Tree

- 1 Remove sand bar from river

RM 209.8 - McGees Mills

- 1 Universal accessibility is needed
1 On-going maintenance needs addressed; site caretaker recently passed away

RM 207 - Mahaffey

- 1 Develop river access

RM 183 – Curwensville Community Center launch

- 1 Opportunity to partner with the community center to showcase a green building with pervious pavement parking, rain water recycling (preventing storm water runoff) and natural landscaping to prevent further stream bank erosion.

RM – Shawville

1

RM 143 -Rolling Stone

- 1 Develop river access

RM 132 - Karthaus

- 1 Improve river access

RM 110 – Keating

- 1 Secure and develop public access

RM 104 - Westport

- 1 Improve river access (private); would like to build a better launch site in Westport, but do not know how to proceed. (DEP, grants, design and construction etc.)

RM 97 Bucktail Medical Center

- 1 Develop river access

RM 94 -North Bend

- 1 Improvements to access area would lead to more use. This access area could be developed to include camping and would benefit local business located within walking distance.

RM 83.5 - rr(Baker's Run)

- 1 Develop river access

RM 73 - rr(Peddie Park)

- 1 Develop river access

RM 11 – Milton

- 1 Develop river landing on Milton side of river (river left)

RM 26.6 – Muncy Heritage Park

- 1 Develop river landing (river left)

General

- 1 Renovo through Jersey Shore, we could have the next Pine Creek (and even better)
- 1 Secure ownership of islands and river frontage for public use
- 1 Environmental case study – upper end (AMD)

RM 132 to 97 to 70 (Karthus to Renovo to Lock Haven)

- 1 Currently this is a popular route for multi-night trips. Develop a trip planner with overnight /amenities and resources.
- 1 Develop on-line water height website - water trail is not always usable due to low water.

Stewardship – “the individual's responsibility to manage his life and property with proper regard to the rights of others.” (Webster's Collegiate Dictionary)

14. What do you believe are the three biggest “stewardship” needs or challenges for the WBWT?

Water Quality

- 3 Improve water quality, AMD remediation
- 1 Clean up mine drainage
- 1 Low water levels – if held back too much fish habitat is destroyed
- 1 Management of waterway for fish
- 1 Continued improvement of the watershed, the less pollutants that flow into the river, the better.
- 1 Address AMD
- 1 Gas leasing and how it will affect the streams and river
- 1 Over a 30 year period water levels appear to be lower – especially in summer

Preservation of Natural Experience

- 1 Protect the corridor wild and scenic values
- 1 Control over proposed activity that could dramatically affect the West Branch: Marcellus shale gas extraction, proposed ethanol plants, geothermal heating
- 1 Protect it for history (within reason) for our future generation
- 1 PFBC needs to be diligent in enforcing jet ski use; designating zones for specific watercraft to reduce conflicts... (north of Farrisville, and Montoursville to Muncy)

Education / Building Relationships

- 2 Managing access and user behavior. Educating public against littering (access areas, campsites and river bottom)

- 2 Trail users need to be encouraged to get more involved with maintenance of the trail and access areas
- 2 Instill sense of ownership of resources. Downstream citizens don't feel responsible for problems or clean up of upstream impacts (AMD)
- 1 Garnering cooperation of private landowners to permit access, and garner cooperation of water trail users to ensure they practice stewardship which will reinforce the good relationship with the landowners.
- 1 Responsible development to ensure we protect the very resource we are promoting
- 1 General population appreciation of the river. "It's beautiful and we like it", and then act accordingly.
- 1 Get more people onto the river, to see it, and feel it
- 1 Respect what we have been given
- 1 Respect the rights of property owners

Water Trail Management

- 1 Developing a unified network of river stewards to share equipment, costs and expertise to maintain the resources of the water trail and the evolving Susquehanna Greenway.
- 1 Adoption of protocols for river mile sections – litter control, boat launch area maintenance (litter control, mowing the grass...)
- 1 Coordinate with area businesses that would benefit/assist with AT activities
- 1 Manage use on the river
- 1 If access points are not adopted or adequately cleaned – this is an opportunity.

General Trail Issues

- 4 Clean-up activities, litter control. "Clean-up cruises" would be fun, informative and provide a good service to the Water Trail (there are multiple dump site areas along the route). Two times per year, litter pick up. Assistance from motor boating community; in higher water they could reach debris hanging in trees. When water is low, paddle for tire cleanup.
- 3 Water trail promotion, Publicity
- 1 Equitable promotion of enjoyable activities along and on the river; do not promote one industry (user type) as "exclusive" (i.e. fishing or paddling)
- 1 Without sustainable economy people do not appreciate the resources
- 1 Signage (directional and on river)
- 1 Kettle Creek Inn in Westport, wants to sponsor a river race, lodging food, along river and Kettle Creek; food and lodging in Renovo; restaurant in Farewell, lodging food, near river; motel in North Bend, near river, lodging, food; Outfitter in Lock Haven.

APPENDIX B

Access Site Inventory and Analysis– Detailed Site Descriptions

As part of this plan, an inventory and analysis of the existing access sites was performed. Summaries of these are below, organized in order from the beginning of the trail at River Mile (RM) 227 in Cherry Tree to RM zero (0) at the confluence with the main stem of the Susquehanna River in Northumberland. Recommendations have been noted for improving access sites to serve as gateways that enhance personal experiences and promote sound land use practices. While it is hoped that this information is helpful to landowners and managers, there is no obligation to implement any of the following recommendations.

RM(227) Cherry Tree - Cherry Tree Borough, Indiana County
Owner: Cherry Tree Borough

Inventory/Analysis:

This site is in a small community park located river left, just past the Rt. 580, Cherry Street bridge. In addition to the canoe/kayak launch, there are seating and picnic areas that can be accessed by a short trail stabilized with pervious grass pavers. This river access appears to meet Universal Accessibility guidelines, as long as the sediment is removed from the grass paver surface following high water events. Existing parking is limited to three cars, with only the universally accessible spaces being marked. Since parking is not clearly defined, site users park randomly along the driveway, making circulation through the site awkward. Need for more parking was observed, as the park is often used as an outdoor lunch location. This site is almost entirely lawn, including the steep river banks. Sediment deposition has created a gravel bar immediately off shore from the launch area; this deposition combined with low water limit this access to seasonal use, serving only canoes and kayaks.

The Water Trail between Cherry Tree and Patchinville has several areas with fallen trees that create river obstructions. This creates impassible obstacles during low flow and dangerous currents and snags during high flow. The land in this area is all privately owned and the banks are steeply eroded; these conditions prohibit safe and responsible portaging around the debris. According to the findings of the Indiana County Planning Commission, use of this access has diminished greatly due to these downstream river obstructions. Many more trees with visible bare roots are likely to add to this problem if erosion and undercutting of the river bank that is creating the hazard is not addressed.

There is a nicely maintained location sign with landscaping at the park entrance, but there are no roadway or directional signs indicating the river access. The Lumber Heritage sign at this site is missing the sign plate, and the wooden base is visibly deteriorated. Informational signage would be helpful to trail users for finding local businesses. This site is adjacent to a small downtown area which does provide access to food and overnight lodging. The Tonkin Museum on North Main Street will offer a wealth of local and regional historical information (anticipated to open in 2009) regarding the lumbering history and the role of the West Branch Susquehanna River which might also be of interest to Water Trail users, and enhance their Water Trail experience.

Recommendations:

1. Provide roadway, directional and location signage.
2. Define parking area and spaces.
3. Replace lawn on steep river banks with native species for stabilization. This will retard flood waters, reduce mowing /maintenance, and provide diversity of habitat along the river bank.
4. Remove lumber heritage wooden sign base, as this sign is damaged beyond repair.
5. Install educational sign indicating location of West Branch Susquehanna River headwaters.
6. Maintain grass pavers in walkway area to comply with ADA Accessibility Guidelines. Presently this surface is uneven and unsightly: weedy vegetation is established in the porous pavers (not lawn) and walking surface is irregular.

7. Remove gravel and sediment deposition at access area. Address upstream bank erosion to prevent recurrence.
8. Prepare feasibility study for downstream bank stabilization and debris removal. Downstream debris removal is needed to clear fallen trees from across the Water Trail.
9. Develop signage strategy for providing trail users with helpful information about local points of interest.

RM(217) Burnside - (future) Burnside Township, Clearfield County

Owner: Private

Inventory/Analysis:

This site is noted as a “future” site on the West Branch Water Trail Maps; there is presently no developed access at this site location. There is a 6'-8' high river bank, with a cleared area vegetated in lawn where soil compaction and lack of vegetation indicated the areas of common use for this river access. A stabilized stone parking lot is available for approximately 20 cars (except for Sunday mornings) at the Church of God, located approximately 100 yards off-site. This stretch of river has 18 miles between access points, and this site is central to that stretch. This is a very rural location, and any access development should be of low impact design and in character with the rural locale. This access could be suitable for hand launching canoes and kayaks. The existing site topography and limited area of land will present challenges for making this site a universally accessible boat launch. Otherwise, the characteristics of this site are such that volunteers could reasonably develop a canoe/kayak access here with minimal technical assistance.

Recommendations:

1. Foster relationship with landowner and secure agreement for development of a river access site. If landowner cannot be reached for consent, remove access from the Water Trail maps.
2. If consent for access site is given, secure formal agreement with Church of God for shared use of their parking area. Provide pavement markings on S.R. 219 to improve the safety of crossing from the parking lot to the access.
3. Develop a small hand launch access using site appropriate stabilization on areas of use, complying with ADA accessibility guidelines as viable.
4. Explore alternative sites for developing an access.
5. Provide roadway, directional and location signage.
6. Update mapping as appropriate.

RM(209) McGees Mill- Bell Township, Clearfield County

Owner: Private

Inventory/Analysis:

There is no roadway, location, or directional signage for this river access. This historic site has minimal development that fits with the local character, but it is not universally accessible. Approximately six gravel parking spaces are available along Covered Bridge Road (T322) on the north side of the bridge, on an abandoned railroad grade. There are an additional two gravel spaces available on the south side of the bridge (a very rural stretch of road). The river access is reached by walking across the last covered bridge on the West Branch Susquehanna River, and then turning right at the Lumber Heritage sign and walking upstream approximately 100' along a wooded trail. The Lumber Heritage sign base is in fairly good condition, but the surface of the fiberglass sign plate has deteriorated and is difficult to read. The river bank is approximately 5' high, with flat shale rocks stepped down the bank to provide bank stability in the area of use. There is a large, natural shale outcrop of rock in the river that provides a back-water eddy for hand launching canoes and kayaks. This outcrop has an engraving from the rafting era of the river; “Ray Swanson 8-1-29” is still clearly visible on the rock surface today. As soon as you launch you have a picturesque view of the covered bridge that you will paddle under. A small, privately owned park is maintained alongside the bridge (accessible from land not water) that offers a small, shaded lawn area with benches and signage that explain the history of the bridge. Maintenance of the river access and the

wooded trail is by the Covered Bridge Association who owns the land. The small park (river left downstream of bridge) is owned and maintained by the private property owner, who permits and encourages public access.

Ideally parking should be developed adjacent to the pathway to the river access site. Low volume traffic was observed at this site, but discussions with Bell Township regarding traffic flows and pedestrian safety while walking across this bridge should occur. Long-term parking strategies should consider developing alternative parking for the access site to reduce the potential for pedestrian and vehicular conflicts. This site does not meet universal accessibility guidelines due to the slope of the river launch area and wooded trail, and the lack of properly stabilized surfaces in these areas.

Recommendations:

1. Secure maintenance and use agreement with private landowner or adjacent landowners.
2. Discuss public safety and alternative options for parking with Bell Township. If appropriate, secure parking agreement with landowner for parking along (T322) Covered Bridge Road.
3. Address site issues to comply with ADA Accessibility Guidelines.
4. Explore alternative opportunities for access downstream at the State Route 219 bridge.
5. Remove or replace lumber heritage sign.

RM(207) Mahaffey - (proposed) Mahaffey Borough, Clearfield County
Owner: Mahaffey Borough

Inventory/Analysis:

This site is located at the end of Water Street, just west of the State Route 36 bridge in a stretch of river with 5 miles between access points. Presently there is no developed boat launch, but the river can be accessed by this site. A boat launch on this property will not only serve the West Branch Susquehanna River, but could potentially also serve as an access for boaters on Chest Creek (confluence of Chest Creek is approximately 100' downstream). Stone remnants of an old picnic pavilion exist along the river flood plain; local residents reported that this site used to be a community gathering place for an annual town picnic. The property for the proposed river access is part of the Scout Park that is owned and maintained by Mahaffey Borough. Port-a-pots are provided in the park from April 1 through October 31 and would be available to paddlers. The boat launch and parking are being planned by the Borough with anticipated construction in 2010. This boat launch is envisioned as a ramped launch for canoes, kayaks, and small fishing boats. There is a privately owned residence at the end of Water Street; project development will need to be sensitive to private property rights.

This site presents opportunity to develop a new site that connects an existing municipal park to the river and demonstrate the green design concepts utilizing USFWS models for channel and bank stabilization, Best Management Practices (BMP's) for Stormwater Management and the Chesapeake Conservation Landscaping Council's "Conservation Guidelines".

Recommendations:

1. Develop boat launch for river access, providing site design to comply with ADA Accessibility Guidelines.
2. Provide roadway, directional and highway signage.
3. Develop this access site based on green design concepts, utilizing USFWS details for ramp construction and river bank stabilization, DEP's Best Management Practices (BMP's) and the Chesapeake Conservation Landscaping Council's "Conservation Guidelines".
 - a. Develop parking for cars and small trailers using site grading that encourages infiltration of sheet flow for storm water runoff
 - b. Provide shading for parking area to decrease the heating of surfaces and runoff
 - c. Minimize lawn areas; use native vegetation where practical to reduce mowing operations.

- d. Maintain a vegetative buffer / habitat enhancement area between river and parking
 - e. Use site sensitive bank stabilization (not rip-rap) that can provide usable surfaces for fishing or sitting and encourage human interaction with the river
 - f. Develop in-stream channel elements to enhance river access and protect banks from erosion.
4. Update access site information on maps when project is complete.

RM(204.3) Portage: Chest Falls Rapids - Bell Township, Clearfield County

Owner: Private

Inventory/Analysis:

The Water Trail map and guide states that these are "Class II rapids at 3.5 on the Bower gage". You are recommended to "scout before running". Recommendation is for running falls in the center of river. These are noted as "challenging whitewater with greatest elevation drop on the West Branch. Optional rough portage on river right (200 yard carry)." The Water Trail Map shows arrows river left (RL) but the guide indicates the portage to be river right (RR). Local paddlers have verified that it is RL, and that the guide needs to be corrected to reflect RL. There are no markers on the river for either the rapids or the portage; there is no developed portage, just an area of common use. This "portage" is on privately owned land, and there is no agreement with the landowner for this use.

Recommendations:

1. Secure maintenance and use agreement with private landowner or adjacent landowners.
2. Provide river signage indicating 'rapids, scout before running.'
3. Update access site information on maps when project is complete.

RM(204) Chest Falls - Bell Township, Clearfield County

Owner: Private

Inventory/Analysis:

This river access is located in a privately owned campground, just downstream from the Chest Falls class II rapids. There is roadway and directional signage for the campground, but no river access signage. The site contains rental lots for seasonal recreational vehicles and has a playground, large pavilion, and a port-a-pot. The river access is not clearly evident to non-locals; discreet directional signage would help trail users more efficiently approach the river access with less intrusion to campers. There is no formal parking area for this site, but there is an undeveloped (wooded) area where the landowners allow Water Trail users to park near the river access; there is room for two cars. The river access is reached by walking down a sloped riverbank to a natural rock surface commonly used by locals for launching boats. This access is suitable for hand launching canoes and kayaks. The riverbank has some signs of erosion, with exposed roots and bare soil visible. Natural rock stabilization along the bank would stabilize the area of use for boat launching. This access site is not universally accessible, as the embankment at the river launch area is steep, having rocks 'stepped' into the bank for accessing the river.

Recommendations:

1. Secure public use agreement with private landowners.
2. Develop bank stabilization plan that incorporates the use of natural stone and native plants.
3. Address site issues to comply with ADA Accessibility Guidelines.
4. Install discreet, directional signage identifying areas for public use.

RM(200) Bells Landing - Greenwood Township, Clearfield County

Owner: Army Corps of Engineers and Greenwood Township

Inventory/Analysis:

This river access site is located upstream of the newly constructed SR 3005 Bells Landing river bridge. This access was constructed as part of the new bridge construction project, at the site of the former bridge abutment structure. This access is proposed as a cleared area that slopes to the water for launching small water craft, with parking along the access road. The parking area along the vacated road (former bridge approach) is jointly used by visitors to the river access and to the adjacent lands managed by the State Game Commission. There is a gate restricting vehicular access to these State Game Lands. This access is suitable for launching canoes and kayaks, and small fishing boats during periods of seasonal higher water.

Recommendations:

1. Update access site information on maps when project is completed.

NOTE: This river access was completed in June of 2009, therefore, no in-depth analysis was performed.

RM(187) Curwensville Lake ACOE Access - Pike Township, Clearfield County

Owner: ACOE, with a 25 year lease to Clearfield County Government

Inventory/Analysis:

The large dam at this site is owned and maintained by the Army Corps of Engineers and creates an impoundment area for larger motorized boating. The dam was built as a flood control project, with water releases from the dam being controlled by the Susquehanna River Basin Commission (SBRC). Because of the dam, Water Trail users must exit here and portage four miles to Irvin Park; transportation assistance for this portage is available by calling (814) 236-2320 at least 48 hours in advance. There is highway, directional, location and Lumber heritage signage at this site. The lumber heritage signage is deteriorated and difficult to read.

There is a large recreation area surrounding the normal water level that is managed by the Clearfield County Recreation and Tourism Authority. Here trail users will find camping areas available for overnight stays and day use facilities including picnic tables, pavilions, public restrooms, public beach, trails for day hikes, and three launch areas for fishing and boating. There are boat launches for larger power boats, and two smaller hand launches for small fishing boats, canoes and kayaks. The hand launch areas (upstream of the beach area) are not universally accessible due to lack of stabilized surfacing. This site has large expanses of mowed grass that could be replanted as riparian buffer zones to shade the paved parking areas, reduce mowing, and cool and reduce storm water runoff. Undertaking this type of planting will require careful coordination with ACOE relative to and restrictions of flood zones, management of flowage easements and the impoundment area. This recreation area has potential to host large regional events, and could be used as part of a river related event. Opportunities related to controlled water releases from the dam should be evaluated. Collaboration between SBRC, ACOE, PFBC, and CCRTA should explore potential benefits to habitats and recreation, as well as economic benefits to surrounding communities that could realized by attracting visitors to the region.

Recommendations:

1. Remove or replace Lumber Heritage Signage. Install directional signage within the recreation to clarify boat launch areas.
2. Explore opportunities to upgrade hand launch area to meet ADA Accessibility Guidelines.
3. Pursue partnership opportunities with Clearfield County Conservation District, ACOE and Chesapeake Bay Foundation for reforestation of extensive lawn areas and shading parking areas.
4. Explore opportunities with SRBC for controlled releases from the dam for special recreational events.
5. Work with local businesses and regional tourist promotion staff to develop events that utilize this recreation area and river access and support the local economy.

RM (187) Portage: Curwensville Recreation Area - Pike Township, Clearfield County

This is a 4 mile portage by vehicle around the Curwensville Dam. You must portage by vehicle. Assistance with camping and/or transportation around the dam is available by calling (814) 236-2320 at least 48 hours in advance. This information is provided on the maps and guides, but not apparent from the trail.

Recommendations:

1. Install informational portage signage within the recreation area.

RM(185) Irvin Park - Curwensville Borough, Clearfield County
Park Owner: Curwensville Borough
Access site owner: Private

Inventory/Analysis:

There is roadway and location signage to the park, but there is no river access signage. This boat launch is accessed via a wooded trail off Smith Road, just downstream of the jack dam at Irvin Park. The access is not immediately visible to non-locals, and simple directional signage would be an improvement to this access site. The launch is not formally developed, but provides access via flat rock outcrops near the river bank. The embankment leading down to the river launch is steeply sloped, and an alternative trail approach would be required to make this site universally accessible. This river access is suitable for hand launching kayaks and canoes. The community park provides many site amenities including restrooms, picnicking, playgrounds, pavilions, a stage/band shell, and a large parking area. The Clearfield Grampian Rail Trail is located approximately 1 mile north of the park (via Susquehanna Avenue), running parallel to State Route 879 in Curwensville. This park/river access site has potential to host large regional events, and could be used as part of a river related or triathlon type event.

Recommendations:

1. Provide directional signage to river access site.
2. Develop alternative trail down the riverbank to the access site to meet ADA Accessibility Guidelines.
3. Work with local businesses and regional tourist promotion staff to develop events that utilize this park and river access and support the local economy.

RM(174) Lower Witmer Park - Clearfield Borough, Clearfield County
Owner: Clearfield Borough

Inventory/Analysis:

This site is located river right, before the Market Street bridge. There is no roadway or directional signage for this site. This boat access has a steep concrete approach ramp, with a pedestrian ramp with railing to provide accessibility to the boat launch and portable dock. This access was just reconstructed in 2008 to provide ADA accessibility. This site serves as the exit point for a 0.7 mile portage around the Dudley Tonkin Raftsmen's Memorial Dam, so all Water Trail users must exit here. There is a Lumber Heritage educational sign on the site. Presently there is no directional signage for the portage nor to local businesses for food, supplies, and points of interest. Downtown Clearfield is known for its outdoor recreation retailers including Grice's Gun Shop, Bobs Army Navy, and Jim's Sports Center. Clearfield is considered a Pennsylvania Wilds Gateway community, and also offers a library, courthouse, historical society and food venues. This boat launch is suitable for canoes, kayaks, and small fishing boats.

Recommendations:

1. Work with the Clearfield County Recreation and Tourism Authority and local businesses to develop opportunities for paddlers to visit and explore the downtown and community areas.
2. Collaborate with Clearfield Borough to provide means for securing boats while paddlers visit town.
3. Update access site information on maps when project is complete.

RM(174.5) Dudley Tonkin Raftsmen's Memorial Dam - Clearfield Borough, Clearfield County

Owner: Clearfield Borough

Inventory/Analysis:

This site is located river right at the Dudley Tonkin Raftsmen's Memorial Dam. There is no signage or clear indication as to the specific river access point, as this is presently just an existing point of use and not a developed river access area. There is no known formal agreement for use of this site. There is a parking lot for a commercial building adjacent to this site. Presently people are accessing the river just downstream of the dam by scaling a rocky bank. At the dam there is a well-worn path that indicates frequent use for going around the dam, but there is no signage. This commonly used access does not meet PFBC Commission safety setbacks of minimum 200' distance upstream and 100' minimum distance downstream from dams and should not be used for this purpose.

Recommendations:

1. Develop boat launch for river access at least 100' below the dam for this portage that complies with ADA Accessibility Guidelines.
2. Explore potential for securing public access from private property owner that developed Elliot's Park, a river access, where they permit public access below the dam (river left.)
3. Verify safety distance below dam and address ADA Accessibility Guidelines.
4. Explore potential for alternative launch site by securing public access from private property owner that developed Elliott's park, a river access, where they permit public access below dam (river left.)
5. Upgrade portage by providing clear directions and improving access.
6. Update access site information on maps when project is complete.
7. Meet with dam owner to discuss the posting of safety warnings at existing points of use at the dam.
8. Update access site information on maps when project is complete.

RM(164) Shawville Portage - Goshen Township, Clearfield County

Owner: Private

Inventory/Analysis:

This portage is located river left on private property immediately upstream of the Reliant Energy Electric Generation Plant dam. Dam hazards make exiting the river imperative, but there is no formal agreement with the property owner for public access. After exiting the river you must portage by vehicle 0.5 miles. State Route 879 is a narrow road with heavy truck traffic that is not conducive to walking. Local outfitter, McCracken Canoes, can provide portage transportation if arrangements are made 48 hours in advance.

Recommendations:

1. Explore potential for securing public access from private property owner that presently permits public access above dam (river left.) Approach Goshen Township regarding being an easement holder for a public access.
2. Upgrade portage by providing clear directions and improving access.
3. Update access site information on maps when project is complete.

RM(163) Shawville Grocery - (existing) Goshen Township, Clearfield County

Owner: Private

Inventory/Analysis:

This river access is privately owned, located river left just downstream of the SR970 bridge behind the Shawville Grocery Store. There is no roadway, directional or location signage, nor is there a parking area for this site. There is potential to use the parking lot near the Post Office; this should be explored with the landowner. This access site is not universally accessible, as the embankment at the river launch area is too steep, and there is no stabilized surface at the river launch area. Recently signs have been erected

on this site warning that there are elevated water temperatures that can be harmful (from Reliant Energy Power Plant discharges).

Recommendations:

1. Test water temperatures to determine if this site should be removed from the map and guide.

IF water temperatures do not pose as safety threat...

2. Secure public use agreement with private landowners.
3. Explore off-site parking alternatives; and secure public use agreement with private landowners.
4. Improve access area with stabilization, and designate use areas.
5. Develop bank stabilization plan that incorporates the use of natural stone and native plants.
6. Address site issues to comply with ADA Accessibility Guidelines.
7. Install discreet, directional signage identifying areas for public use.

RM(162) Millstone Run - Bradford Township, Clearfield County

Owner: (incorrectly shown as PaFBC)

Inventory/Analysis:

This river access is located river right downstream of the SR970 bridge off Millstone Road at the confluence with Millstone Run. There is no roadway, directional, or location signage for this river access. There is no formal parking area for this site, but there is area along the shoulder of the township road where 2 or 3 cars can park. Access to the river is for hand-carry only, down a steeply sloped, earthen embankment. This site is heavily used as water levels remain deeper for launching, which also helps to offset the thermal impacts from Reliant Energy Power Plant discharges in Shawville.

There are signs of erosion on the site and deposition of material from Millstone Run, creating an alluvial fan. Japanese knotweed is established, limiting native species diversity. This access site is not universally accessible as the embankment at the river launch area is too steep, and none of the surface areas are properly stabilized.

Recommendations:

1. This should be removed from the Water Trail maps. This is a point of common use, but not a PFBC site.

RM(149) Deer Creek - Graham Township, Clearfield County

Owner: PFBC

Inventory/Analysis:

This river access is owned and managed by the PFBC, located river right just upstream of the SR1009 bridge. There is location signage on this site, but no directional or roadway signage. The approach road is stabilized with stone and drains directly into the river, with no diversion or filtering of runoff. Access to the river is via a gently sloped river bank, with no developed launch. Lawn and grasses in the area of boat launch provide riverbank stability, with only minor erosion evident in heavy use areas (where vegetation cannot be sustained). Japanese knotweed is established in areas of the site. There is no formal parking area for this site, but there is evidence of parking near the river access. There is no camping permitted at this site, but history of this use is evidenced by fire rings and numerous 'no camping' posters on trees. This access site is not universally accessible, as the surface is not stabilized at the launch area.

Recommendations:

1. Improve access area with stabilization to address erosion and to comply with ADA Accessibility Guidelines.
2. Develop plan for control of invasive species (Japanese knotweed) at this site.
3. Utilize natural stone and native plants for river bank stabilization.

4. Redirect access road runoff so that it does not directly flow into river. Ideally this would involve overland flow to a recharge trench or a level, shaded area of the site where runoff could be filtered and cooled before entering the river.
5. Install discreet, directional signage identifying areas for public use.
6. Explore potential alternatives for river camping to relieve pressure from this site.

RM(143) Rolling Stone - Cooper Township, Clearfield County

Owner: Private

Inventory/Analysis:

This river access is privately owned, located river right just upstream of the SR1011 bridge. There is no roadway, directional, or location signage for this site. There is no formal parking area for this site, but there is area along the shoulder of the State Road where there is evidence that cars park (space for approximately 7 cars). There is a stony area off the approach road that could park approximately 6 cars, and a grassy area that would accommodate approximately 3 more cars. Approach road to the river access consists of a steeply sloped woods road that drains directly to the river, with no filtering of runoff. This road is extremely eroded, with exposed rock and moderately sized stones as the surface; recommend only 4-wheel drive vehicles on this approach road. Access to the river is for hand-carry only, with a gently sloped river bank and no developed launch. There is minor erosion on the river bank in areas of heavy use. Orange/oxidation sediment deposits indicate evidence of mine drainage impacting the river in this area. This site also has evidence of heavy camping use. This access site is not universally accessible, as the parking approach road is steep and the stream bank river launch area does not have a stabilized surface.

Recommendations:

1. Secure public use agreement with private landowners.
2. Explore off-site parking alternatives; and secure public use agreement with private landowners.
3. Improve access area with stabilization, and designate use areas.
4. Develop bank stabilization plan that incorporates the use of natural stone and native plants.
5. Address site issues to comply with ADA Accessibility Guidelines.
6. Improve road surface, installing water bars or other means of diverting runoff from flowing down the road surface.
7. Redirect access road runoff so that it does not directly flow into river. Ideally this would involve overland flow to a recharge trench or a level, shaded area of the site where runoff could be filtered and cooled before entering the river.
8. Install discreet, directional signage to the site and identifying areas for public use.
9. Develop specific areas for camping
10. Seek volunteer group to adopt this access site for maintenance and stewardship.

RM(132) Karthaus - Karthaus Township, Clearfield County

Owner: DCNR Bureau of Forestry

Inventory/Analysis:

This access area is owned and maintained by DCNR BOF and has 3 camping sites that are available by securing a permit (570) 923-6011. This site has a stabilized stone parking area for 20 cars, and a concrete plank boat launch. The approach leading down to the launch is moderately sloped, with stabilized stone surfacing. Footpaths through the woods to the camping areas are used heavily enough to prohibit vegetation from being established. This river access is suitable for kayaks and canoes, dependent on seasonal water levels. There are port-a-pots and picnic tables available. Rock art and pool impoundments were visible, made from the round river stones. Local businesses offer food and minor services in nearby Karthaus.

This access is essential to the Water Trail and is heavily used on holiday weekends for embarking on the 22 mile trip to Keating. The river experience between Karthaus and Keating is very much wilderness and much desired by paddlers. For 22 miles the only signs of human development are a few developed lots,

the remains of coal boney piles, a few cabins and the railroad. There are no roads or traffic sounds to encroach on your experience with the river.

Recommendations:

1. Stabilize parking and access drive surface, directing runoff as sheet flow onto well-vegetated surfaces.
2. Address site issues to comply with ADA Accessibility Guidelines.
3. Remove rock art and pool impoundments. Promote the stewardship principle of leaving the site as you find it.
4. Consider designating paths and camping areas, to limit the impacts at this popular access site.
5. Work with local businesses and develop a partnership that uses this river access to support the local economy.

RM(110) Keating - East Keating Township, Clinton County

Owner: private

Inventory/Analysis:

This river access is privately owned, located river left just upstream of the Keating Mountain Road bridge. There is no roadway or directional signage to this site. This is not officially an access area, but merely privately owned land that is commonly used for river access. There is no formal access or parking area, so the access road is often used for parking. East Keating Township has concerns for the continued use of this site for public access as the road that people use to launch boats was constructed to draw water for local fire company trucks, and often this road is blocked by parked cars. Access in this area is crucial to the Water Trail, as the last access is 22 miles upstream in Karthaus, and the next access site is 13 miles downstream in Renovo. The river region between Karthaus and Keating is a wilderness experience and much desired by paddlers. For 22 miles there is a narrow river valley with steep wooded mountains; there is the railroad, but no roads or traffic to encroach on the peaceful experience with the river. This access site is not universally accessible, as the river launch area is not stabilized.

Recommendations:

1. Secure maintenance and use agreement with private landowner, and develop site to accommodate user needs.
Or...remove from maps and secure alternative public access.
2. Provide roadway, directional and location signage.
3. Improve access area with stabilization, and designate parking and use areas.
4. Develop bank stabilization plan that incorporates the use of natural stone and native plants.
5. Address site issues to comply with ADA Accessibility Guidelines.
6. Install discreet, directional signage identifying areas for public use.
7. Update access site information on maps when project is complete.
8. Revise directions on map: State Route 120 is incorrectly noted as State Route 220.

RM(97) PA State Flaming Foliage - Renovo, Clinton County

Owner: Flaming Foliage Association

Inventory/Analysis:

This access area is located just off SR 120 at the Flaming Foliage Visitors Center; from the roadway there is a location sign for the Visitor's center, but no river access indications. There is a new Orientation and Safety sign on this site at the edge of the parking area. There is a small stabilized stone parking area for 2-3 cars, but parking is not clearly delineated. The parking area is elevated on a bench above the river level, with a concrete plank boat launch into the river. The approach leading down to the launch is very steep (same as existing river bank), with a very irregular surface. When you leave the river and travel up the access ramp toward town there is a weather-worn sign that reads "use boat landing at your own risk" - not much of a welcoming sign to the community. The river bank appears well-vegetated and stable, but

Japanese knotweed is prevalent on this site. This river access is suitable for launching kayaks and canoes.

Renovo is struggling economically, but could offer food, hardware, lodging and services that could be utilized by paddlers. Local resource information and improved pedestrian paths to businesses could enhance Water Trail and promote the local economy. The access drive to the river is steeply sloped. This site could provide universal accessibility if the paddlers are driven to the level area below the concrete planks and if the boat launch surface is improved.

Recommendations:

1. Provide directional signage to site from SR120.
2. Clarify parking area, on Water Trail guide location plan/map and on site.
3. Improve access drive surfacing from parking area to boat launch.
4. Address site issues to comply with ADA Accessibility Guidelines.
5. Develop plan for control of invasive species (Japanese knotweed) at this site.
6. Improve pedestrian ways to downtown resources.
7. Work with Flaming Foliage Visitor Center to develop and post a map on the outside of their building indicating local businesses and services available to help support the local economy.
8. Provide means for securing boats while paddlers visit town.

RM(94) North Bend - Chapman Township, Clinton County

Owner: PFBC, pending lease to local municipality.

Inventory/Analysis:

There is no roadway or directional signage to this access; it is located 4 blocks south of SR 120, off of Reese Road. This is a small-scale access area with two stabilized stone parking spaces and a stabilized stone boat launch. The approach leading down to the launch is gently sloped, with stabilized stone surfacing; the driveway drains directly to the river. The riverbank appears stable, with vegetative cover. However, Japanese knotweed is the dominant understory on this site, prohibiting the growth of native vegetation. This river access is suitable for kayaks and canoes, and depending on seasonal water levels, sometimes small fishing boats. There are local businesses that offer both food and lodging; these are within walking distance (two blocks) from this river access. Informational signage (Lumber Heritage and PFBC) have been vandalized and are in poor condition.

Note: grant applications were submitted in 2009 for developing parking at this access site.

Recommendations:

1. Provide directional signage to site from SR120.
2. Develop additional parking spaces.
3. Redirect runoff from access road so that it drains as sheet flow over vegetated land prior to entering the river.
4. Remove or replace damaged signage.
5. Install discreet signage to identify areas for public use.
6. Address site issues to comply with ADA Accessibility Guidelines.
7. Work with the Township and regional tourist promotion staff to support the local economy by developing a link between this river access and nearby businesses.
8. Provide means for securing boats while paddlers visit local businesses.
9. Develop plan for control of invasive species (Japanese knotweed) at this site.

RM(90) Hyner - Chapman Township, Clinton County

Owner: PFBC, pending lease to local municipality.

Inventory/Analysis:

This site is located at the southeast quadrant of the SR 120 river bridge at Hyner. There is no roadway or directional signage. This access area has a steep, bituminous paved access drive off SR120 that goes directly to the river. There is a newly stabilized stone parking area for 2 cars, and a concrete plank boat launch (completed in the fall of 2008). This river access is suitable for kayaks and canoes, and depending on seasonal water levels, sometimes small fishing boats. Sediment deposits were evident at this access site; these appear to restrict seasonal usage of the boat access. The Western Clinton Sportsmen's Association recently built an environmental education center near this access, but it is on the opposite side of SR120. The river bank appears stable, but Japanese knotweed is prevalent on this site. This boat launch is universally accessible.

Recommendations:

1. Provide directional signage to site from SR120.
2. Redirect runoff from access road so that it drains as sheet flow over vegetated land prior to entering the river.
3. Maintain navigable conditions at the boat launch by removing sediment deposits.
4. Develop plan for control of invasive species (Japanese knotweed) at this site.
5. Explore the possibility of developing a trail that connects to the Sportsmen's education center on the upstream side of the SR120 bridge.

RM(70) Lock Haven - Woodward Township, Clinton County

Owner: Woodward Township

Inventory/Analysis:

There is no roadway or directional signage to this site. This river access is part of the Lockport Recreation Area, located off SR 664. This site is across the river from Lock Haven, a moderate-sized urban center for this region. Site improvements to this river access and boat launch were completed in 2008 to extend the boat ramp, resurface the parking area, and create a soft launch for canoes and kayaks. This access is (river left) and just upstream of the Grant Street Dam. This dam is owned and maintained by the City of Lock Haven and creates an impoundment area for larger motorized boating. There is a concrete boat ramp for boats with trailers, and there is a separate 'soft' launch for canoes and kayaks. There is a bituminous paved parking lot that accommodates 20 cars and 36 vehicles with trailers. This access has restrooms with public water and sewer, and open lawn areas with benches and picnic tables and mature shade trees. This site is used heavily by boaters and also by local residents seeking a respite from their day. This site is universally accessible.

Funding is being sought for constructing a fish passage at the Grant Street dam to permit aquatic species such as American shad and eels to navigate over the dam and complete their migrating lifecycles. Adjacent to this site is a historic lock-keepers house, with a restored canal lock. While this property is privately owned and not open to public access, these site features can be clearly viewed from the public access area. These structures are remains of the canal era of this region and serve as reminders of the importance of that historical period. This access area hosts large regional events which provide entertainment, recreation, and economic benefits to the surrounding communities.

Recommendations:

1. Provide roadway and directional signage to the site.
2. Develop signage for educating the public about the significance of American shad and the canals to early American settlement.
3. Work with regional schools to develop programming that utilizes site features.
4. Install low landscaping or fencing to delineate property line between lock-keeper property and public land.
5. Remove or replace Lumber Heritage signage.

RM (70) Portage: Grant Street Dam - City of Lock Haven, Clinton County

Owner: Lock Haven Flood Protection Authority (portage), Grant Street Dam (City of Lock Haven)

Inventory/Analysis:

Because of the dam, Water Trail users must exit and portage more than 200' upstream of the dam structure. The maps indicate: "must exit river right 600' upstream of the Grant Street Dam and portage around". At this point water travelers would need to traverse the flood control levee embankment to get to the river walk on top of the levee. At a point just more than 200' upstream of the dam there is a designated portage river right, but there is no signage to clarify this. As part of the levee construction a paved walkway was installed that angles up the levee embankment, traverses past the dam, and slopes back down to the water more than 100' below the dam for re-entering the river. Buoy placement above the dam is sometimes in excess of 200' from the dam, making this portage legally inaccessible.

Recommendations:

1. PFBC and Lock Haven Flood Protection Authority should collaborate and cooperate regarding buoy placement; angling buoys (river right) would provide legal access to the developed portage walkway.
2. Upgrade portage by providing clear directions, and adding signage to buoys.
3. Correct maps when project is complete.

RM(62) Pine Access - Wayne Township, Clinton County

Owner: PFBC

Inventory/Analysis:

This access area is located at the Alan Gardner Memorial Park and is maintained by Wayne Township. There is no roadway or directional signage to this access. Parking area and drives are bituminous paving, which drains directly to the river. The river access drive is steeply sloped bituminous paving, with a poured concrete boat ramp into the river. Surfacing of this area meets universal accessibility requirements, but assistance would likely be required for traversing the slope of the drive. There is a pavilion with picnic tables, a restroom, and parking for 11 cars and 9 vehicles with trailers. This river access is suitable for kayaks and canoes, and small motorized boats.

Recommendations:

1. Provide directional signage to the site from SR220.
2. Redirect runoff from access road and parking area so that it drains as sheet flow over vegetated land prior to entering the river.
3. Develop a plan for control of invasive species (Japanese knotweed) at this site.

RM(55) Jersey Shore Borough - (future) Jersey Shore Borough, Lycoming County

Owner: private, with multiple parcels

Inventory/Analysis:

This future river access is located just upstream of the SR44 river bridge. There is no roadway, directional or location signage for this site. There is a Lumber Heritage sign that is in fair condition. The site of this proposed river access is comprised of multiple privately owned parcels between Main Street and the Susquehanna River. Interest has been expressed within the Borough to develop the riverfront for recreational access and special events, but to date there are no specific plans for immediate development. There is an existing narrow drive that angles down the river bank; this access is commonly used by the public to access the river, but there is no legal access secured from the existing landowners. In its current, undeveloped condition, this access site is not universally accessible due to slope and irregular surfacing. The riverbank is very steep with a mix of grasses, small tree seedlings and Japanese knotweed. Parking for 14 vehicles is available in a municipal lot across Main Street, and there is also a community park with lawn and open space. This access is at a strategic location for the Water Trail since there are 7 miles between the last access site and this point. Downtown Jersey Shore, just one block from this access, offers food, beverages, and overnight lodging. This future riverfront development could be an asset to both paddlers and local businesses.

Recommendations:

1. Secure riverfront land or easements for public use from the private landowners.
2. Develop this site to accommodate user needs. Or...remove from Water Trail maps and secure alternative public access
3. Construct access drive and boat launch area.
4. Develop bank stabilization plan that incorporates the use of natural stone and native plants.
5. Develop a plan for control of invasive species (Japanese knotweed) at this site.
6. Address site issues to comply with ADA Accessibility Guidelines.
7. Work with the local businesses and regional tourist promotion staff to support the local economy by developing a link between this river access and businesses.
8. Provide means for securing boats while paddlers visit town.
9. Install discreet, directional signage identifying areas for public use.
10. Provide roadway, directional and site location signage.
11. Remove or replace Lumber Heritage signage.
12. Update access site information on maps when project is complete.

RM(53) Susquehanna Campground - Woodward Township, Lycoming County

Owner: Private

Inventory/Analysis:

There is no roadway or directional signage for this site. This river access is located off SR 220 in a privately owned campground, 2 miles downstream from Jersey Shore Borough. The campground offers rental lots for parking seasonal recreational vehicles, cabin rentals, and open area within the floodplain for approximately 60 tenting sites. There is a parking area at the top of the slope for 10 cars, with restrooms and coin operated showers available for campers. The river is accessed by a stabilized stone lane that leads down a sloped hillside onto a very flat floodplain to the river's edge. Runoff follows the land down the slope, eroding the stabilized driveway surface and flowing directly into the river. The boat launch is simply two concrete pads extending out into the river from a very flat floodplain. If sediment is kept removed from the driving lane, this site could be universally accessible for a boater drop-off area. This access is suitable for launching canoes, kayaks, and small fishing boats. The area has mature canopy trees, with mowed herbaceous understory and some Japanese knotweed. The riverbank shows no real signs of erosion, but sediment deposits from high water events were visible.

Recommendations:

1. Secure public use agreement with private landowners.
2. Redirect runoff from access road so that it drains as sheet flow over vegetated land prior to entering the river.
3. Develop a plan for control of invasive species (Japanese knotweed) at this site.
4. Install discreet, directional signage identifying areas for public use.
5. Educate landowner about floodplain and stream bank vegetation management.

RM(45) Linden - Woodward Township, Lycoming County

Owner: PFBC

Inventory/Analysis:

This site has roadway, directional and location signage. This site is owned and maintained by the PFBC in the upper reaches of an impoundment area for larger motorized boating. This site is located just outside of the City of Williamsport, an urban population center for the region. There is a large, bituminous paved parking lot for 47 vehicles with trailers on land that is elevated above the river. Paved surfaces are not shaded. A paved drive slopes down to a concrete ramp for trailer access. There is also a removable dock for fishing and boat launching. The slope down to the access is steep, but if paddlers were driven down to the water edge, the dock would provide universal accessibility. There is site lighting at the launch area, and port-a-pots are provided for access site users. This site has large expanses of mowed

grass, with the majority of paved surface sheet flowing to grass-lined swales. Japanese knotweed is present on river bank slopes.

Recommendations:

1. Consider re-developing this site as a model/educational demonstration area based on green design concepts, utilizing Chesapeake Conservation Landscaping Council's "Conservation Guidelines"
 - a. Utilize site grading that encourages infiltration/overland sheet flow of storm water runoff for filtration and cooling
 - b. Provide shading for parking area to decrease the heating of surfaces and runoff
 - c. Minimize lawn areas; use native vegetation where practical to reduce mowing operations and diversify habitat areas.
 - d. Maintain a vegetative buffer between river and parking area
 - i. Visually buffer cars and parking area from river view
 - ii. Provide habitat enhancement area
 - e. Use site sensitive bank stabilization (not rip-rap) that can provide usable surfaces for fishing or sitting and encourage human interaction with the river
 - f. Develop a plan for control of invasive species (Japanese knotweed) at this site.
 - g. Explore opportunities with Chesapeake Bay Foundation and Lycoming County Conservation District for reforestation of extensive lawn areas and for shading parking areas.

RM(42) Susquehanna State Park - City of Williamsport, Lycoming County
Owner: DCNR Bureau of State Parks

Inventory/Analysis:

This access has roadway, directional, and location signage. The site is owned and maintained by DCNR State Parks in the middle reach of an impoundment area for larger motorized boating. This site is located just outside of the City of Williamsport, an urban population center for the region. There is a bituminous paved parking lot for 3 cars and 17 vehicles with trailers, with 27 additional stabilized stone spaces for cars. A paved drive slopes down to a concrete ramp for trailer access. There is also a removable dock for fishing and boat launching. This site is universally accessible. There is a picnic table and benches at the launch site. Located 100 yards upstream of the access is the Hiawatha Paddleboat launch area with a large pavilion (for rent), a seasonal snack bar, and public restrooms. This site has large expanses of mowed grass and mature trees, with the majority of paved surface sheet flowing across stabilized lawn surfaces.

The stabilized parking area is only partially shaded, and the paved surfaces in the Hiawatha area are not shaded. Better connectivity to local neighborhoods offering food and refreshments could benefit both Water Trail paddlers and local businesses. The future extension of the Lycoming Creek Bikeway will connect this site to Hepburnville, and the future Susquehanna Bikeway will further connect to Historic Bowman Field, Elm Park, Penn College, and the Williamsport Riverwalk. These venues can provide excellent opportunities for special events that have potential to boost local economies and connect people to the river.

Recommendations:

1. Work with local businesses and regional tourist promotion staff to develop events that utilize this recreation area and river access and support the local economy.
2. Work with the local businesses and chamber of commerce to develop a link between this river access and businesses.
3. Provide means for securing boats while paddlers visit town.
4. Consider re-developing this site as a model/educational demonstration based on green design concepts, utilizing Chesapeake Conservation Landscaping Council's "Conservation Guidelines"

- a. Provide additional shading for parking areas to decrease the heating of surfaces and runoff
- b. Maintain a vegetative buffer between river and parking area
 - i. Visually buffer cars and parking area from river view
- c. Use site sensitive bank stabilization (not rip-rap) that can provide usable surfaces for fishing or sitting and encourage human interaction with the river

RM (40) Portage: Hepburn Street Dam - City of Williamsport, Lycoming County
Owner: Army Corps of Engineers (levee/portage), DCNR-Bureau of Forestry (dam)

Inventory/Analysis:

Because of the dam and its dangerous undercurrents, Water Trail users must exit 400' upstream of the structure. Presently there is no portage trail, so paddlers must climb the levee embankment. The proposed Williamsport Riverwalk on the top of the levee should be completed in 2009, providing paved surfacing for that portion of the portage. At a point 200' below the dam paddlers must traverse back down the levee slope to the river. The surface of the levee is coarse stone, which makes this portage difficult.

The Williamsport Riverwalk is a proposed pedestrian/biking loop that connects the City of Williamsport to Duboistown, South Williamsport and Loyalsock Township. Williamsport was once "the lumber capital of the world", has a rich architectural fabric, and represents an integral part of the lumber heritage of the West Branch. There is also a proposed 'Timber Trail' that will include artwork and educational signage about the lumber heritage of this region. This portage is less than one mile from downtown Williamsport, yet without a developed, user friendly portage with connection to the Riverwalk, there is no direct connection to the downtown. Additionally, plans have been engineered and funds are being sought for the construction of a fish passage structure at this dam; this is intended to restore the passage of American Shad on migration from the Chesapeake Bay for spawning.

Recommendations:

1. Approach Army Corps of Engineers about developing a portage trail on the levee (similar to Lock Haven), including connectivity to the Riverwalk on top of the level.
 - a. Work with regional tourism promotion agency to develop opportunities for paddlers to visit and explore the downtown and community areas.
 - b. Provide means for securing boats while paddlers visit town.
2. Update access site information on maps when project is complete.

RM(37) Greevy - Loyalsock Township, Lycoming County
Owner: Loyalsock Township (with an agreement with PFBC)

Inventory/Analysis:

This site is owned and maintained by Loyalsock Township at a point about 2.4 miles below the Hepburn Street dam. This access has roadway, directional, and location signage. This site is just one mile upstream from Montoursville Borough and 3 miles downstream from Williamsport; both communities are large population centers in this region. There is a bituminous paved parking lot for 26 vehicles with trailers. A paved drive slopes down to a concrete ramp for trailer access. There is also a removable dock for fishing and boat launching. The stabilization on the adjacent sloped banks is large stone (rip-rap) that stabilizes the cut banks but presents a barrier for people who want to access the adjacent riverbanks. There is an opportunity to install large wall-rock for bank stabilization; this would provide usable surfaces to encourage additional interaction with the river. This could be done in combination with installation of naturalized plantings that provide bank stabilization and habitat enhancement. This site has a fairly steep gradient to the river, but the surface is universally accessible. There are benches, a picnic table, and a port-a-pot available on this site. There is varied signage on site including site location, Water Trail Safety and Orientation, lumber heritage/education, boater safety, and local ecology/science facts. Signage is well-maintained, but there is no consistency in the signage style or presentation. This site has small areas of mowed grass with mature trees, with the majority of paved surface sheet flowing across stabilized lawn

surfaces. Knotweed is prevalent on the riverbank, preventing native species from establishing thereby limiting habitat diversity. The adjacent Susquehanna Trail (paved bikeway) provides land-based connectivity between Loyalsock Township and Montoursville and is proposed to connect to the Williamsport Riverwalk upstream. Loyalsock Township's Riverpark is located just one-half mile downstream, river left. This park offers a walking trail with educational signage about native- and early American- settlement, a pavilion (with restrooms for pavilion rental) and an area of recent reforestation and mature trees.

Recommendations:

1. Use site sensitive bank stabilization (not rip-rap) that can provide usable surfaces for fishing or sitting and encourage human interaction with the river.
2. Develop a plan for control of invasive species (Japanese knotweed) at this site.
3. Penn State University, DCNR, DEP- invasive species control

RM(35) Mill Lane - Montoursville Borough, Lycoming County
Owner: Montoursville Borough

Inventory/Analysis:

There is no roadway, directional, or location signage to this site. This access area is located off Mill Lane, approximately 1.5 miles past the gate on the entrance road. This gate is closed daily from 10 PM to 5 AM, and seasonally November to April. This access has a parking area for approximately 6 cars and 8 vehicles with trailers; the surface is partially stabilized stone and partially bituminous paved (in poor condition). The entire site is located on a gently sloped floodplain, with a paved driveway leading from the parking to the river; this appears to meet ADA Accessibility Guidelines, with the exception of surface conditions that could be improved. There is a concrete boat launch in fair condition, and sediment deposits throughout from minor flooding events. There are several footpaths through the woods that appear to be heavily used. Most of the site vegetation is maintained lawn with canopy trees. The sod edge is higher than the pavement, which prevents runoff from flowing across the lawn; runoff drains down along the paved surface of the access driveway and directly into the river, carrying sediment with it. There is some scrub/brush vegetation along the river bank, with knotweed also present. There is river bank undercutting, with bare tree roots visible. This river access is suitable for motorized fishing boats, kayaks and canoes. There are two privies at this site elevated on mounds, apparently to keep them above the 100-year flood elevation; these are not ADA compliant. There is a pavilion with picnic tables, benches and an outdated swingset. There is water faucet available for washing.

This site is within close proximity to regional population centers, yet offers a peaceful, remote river experience from here to Muncy. These next 8 miles of river have a forested mountainside to the right, and a combination of agricultural fields, and the old canal bed, to the left; there are no roads within this corridor, only railroad tracks on each side. Bald eagles can often be seen in this stretch of river, as well as other birds and wildlife. The remoteness of this stretch of river needs to be conserved.

Recommendations:

1. Provide directional signage to access.
2. Stabilize parking and access drive surface, directing runoff as sheet flow onto well-vegetated surfaces.
3. Develop a plan for control of invasive species (Japanese knotweed) at this site.
4. Address site issues to comply with ADA Accessibility Guidelines, including restroom facilities.
5. Redirect parking area runoff so that it flows over well-vegetated surfaces prior to entering the river.
6. Work with local municipalities to educate them regarding the value of conserving the experience offered on this stretch of the river.

RM(27) Muncy - Muncy Township, Lycoming County
Owner: PFBC

Inventory/Analysis:

This access area is located immediately upstream of the State Route 405 river bridge, along Aquatic Road. This access has a parking area for 20 vehicles with trailers; the surface is bituminous paved in excellent condition. There is roadway and location signage for this site. The entire site is located on a gently sloped floodplain, with a paved driveway leading from the parking to a new concrete boat ramp. This site is universally accessible. There are sediment deposits throughout, and it is reported that regular dredging of silt material is required to keep this river access viable. The site vegetation is maintained lawn with canopy trees along the river bank; there is no shading of the paved parking surface. Runoff from the parking lot flow to a well-vegetated lawn area, but then follows the edge of paving because the sod edge is higher than the parking surface. This prevents runoff from flowing over the lawn, and instead runoff drains along the edge of the access driveway and directly into river. There is some scrub/brush vegetation along the river bank, with Japanese knotweed also present. There is minor river bank erosion, with some bare tree roots visible. This river access is suitable for motorized fishing boats, kayaks and canoes. There are no restroom facilities at this site. This site is popular as a take-out point, as it is within close proximity to regional population centers, and the upstream stretch from Mill Lane offers a peaceful, remote river experience. This access is less than 1 mile from the historic river town of Muncy, yet there are no sidewalks or trails connecting the access to the downtown. This town represents an important part of the canal heritage of this region, and has a rich architectural fabric. Connection to the downtown would strengthen the relationship of residents with the river, and would provide paddlers additional opportunities for cultural enrichment, food, lodging, and supplies.

Recommendations:

1. Provide directional signage to access.
2. Provide port-a-pot facilities.
3. Redirect parking area runoff so that it flows to an underground recharge area prior to entering the river.
4. Provide canopy trees to shade the paved parking surfaces.
5. Develop a plan for control of invasive species (Japanese knotweed) at this site.
6. Work with the local businesses and regional tourist promotion staff to support the local economy by developing a link between this river access and businesses.
7. Provide means for securing boats while paddlers visit town.
8. Install discreet, directional signage identifying areas for public use.
9. Work with local municipalities to educate them regarding the value of conserving the experience offered on this stretch of the river.

RM(23) Montgomery - Montgomery Borough, Lycoming County

Owner: PFBC

Inventory/Analysis:

There is roadway, directional and location signage at this site. Signage types vary on this site, ranging from wooden routed signs to metal signs on break-away posts; signage is inconsistent, and was in need of repair at the time of site inventory. This access area is located immediately upstream of the State Route 405 river bridge, adjacent to the Little League fields and Montgomery Borough Park. This access has a parking area for 8 cars and 9 vehicles with trailers; the surface is bituminous paved in fair condition. The entire site is located on a gently sloped floodplain, with a paved driveway leading from the parking to a new concrete plank boat ramp. This site appears to meet ADA Accessibility Guidelines. The site vegetation is maintained lawn with canopy trees along the river bank, but there is no shading of the paved parking surface. Runoff from the parking lot flows down the paved river access drive and along the edge of the boat launch; this runoff carries sediment and pavement drainage directly into the river. There is some scrub/brush vegetation along the river bank, with knotweed also present. There is minor river bank erosion, with bare tree roots visible. This river access is suitable for motorized fishing boats, kayaks and canoes. There are no restroom facilities at this site, but the adjacent municipal park has restrooms that are open for groups by pre-arrangement. This access is less than one mile from Montgomery businesses, yet there is no information or sidewalks to connect the access to the community. Connection to this town

would strengthen the relationship of residents with the river, and would provide paddlers additional opportunities for food and supplies. Bicycle Route J follows a path on the shoulder of State Route 405 adjacent to this access.

Recommendations:

1. Replace and repair signage on site; develop plan for consistency of signage types.
2. Stabilize river bank using native materials and vegetation.
3. Redirect parking area runoff so that it flows to an underground recharge area prior to entering the river.
4. Provide canopy trees to shade the paved parking surfaces.
5. Develop a plan for control of invasive species (Japanese knotweed) at this site.
6. Work with the local businesses and regional tourist promotion staff to support the local economy by developing a link between this river access and businesses.
7. Provide means for securing boats while paddlers visit town.

RM(22) Riverside Campground - Montgomery Borough, Lycoming County

Owner: Private

Inventory/Analysis:

This river access is located in a privately owned campground, located adjacent to State Route 405 bridge, downstream of the Borough park property that is adjacent to the bridge, downstream from the Montgomery PFBC access. It should be noted that the Borough does not provide public access to the river. This site is located on a gently sloping floodplain, with lawn field sloping to the water edge for access. There is no stabilized surfacing. This site is primarily a campground with rental lots for parking seasonal recreational vehicles. There is presently no signage from the highway to the campground, and no signage to direct paddlers to the river access. There is a parking area for 6 cars, a restaurant, bar, laundry facilities, public water, phone, port-a-pot, picnic tables fire rings and coin operated showers. The site is accessed by a stabilized stone lane that leads down a gently sloped hillside onto a very flat floodplain to the river's edge. Runoff follows the land down the slope, with minor eroding of the stabilized stone surface. There is no developed boat launch, but a stable lawn area leading into the water. Surfacing of this launch site does not meet ADA Guidelines for Accessibility. This access is suitable for hand launching canoes and kayaks. The area has mature canopy trees with a mowed lawn understory. The riverbank has no real signs of erosion, but sediment deposits from high water events were visible.

Recommendations:

1. Secure public use agreement with private landowner.
2. Provide roadway signage and install discreet, directional signage identifying areas for public use.
3. Educate landowners about floodplain and stream bank vegetation management.
4. Address site issues to comply with ADA Accessibility Guidelines, including restroom facilities.

RM(18) Great Stream Commons - (future) Gregg Township, Union County

Owner: Union County Industrial Development Corporation

Inventory/Analysis:

The site of this potential future river access is located just off a 90 degree turn along Columbia Road. The road is narrow with poor visibility and no room for parking. There is no developed access at this location, but there is an area of common use where a steep bank slopes down to the water's edge. The adjacent river bank appears stable with vegetation and mature trees, but Japanese knotweed is prevalent. A potential alternative to this access site exists both upstream and downstream. Upstream there is an existing gently ramped grade down the slope to the river edge, and downstream there is a point of common use near the Dewart Route 44 bridge. Permanent stabilization would be required at the river and along the access. Parking would need to be developed at either alternative site.

At the time of this report, the Warrior Run Pathways Committee and the landowner were exploring potential for developing a launch in this area.

Recommendations:

1. Secure maintenance and use agreement with private landowner, and develop site to accommodate user needs. Or...remove from maps and secure alternative public access.
2. If consent is given:
3. Develop this site to accommodate small fishing boats, canoes and kayaks; construct parking, access drive and boat launch area.
4. Develop bank stabilization plan that incorporates the use of natural stone and native plants.
5. Develop a plan for control of invasive species (Japanese knotweed) at this site.
6. Address site issues to comply with ADA Accessibility Guidelines.
7. Install roadway, directional signage identifying areas for public use (when secured).
8. Update access site information on maps when project is complete.

RM(16) Watsontown Municipal - Watsontown Borough, Northumberland County

Owner: Watsontown Borough and PennDOT

Inventory/Analysis:

This river access is located immediately downstream of State Route 1010 bridge, just 1 block from downtown Watsontown. There is no roadway, directional or location signage to identify this site. This river access is not formally developed, but is used heavily by local paddlers. This site underwent dramatic changes following the new bridge construction, with large gravel bars and deposition areas, heavy brush, and eroded banks. There is a community park along the Borough riverfront in this location. There is also a municipal parking lot for 44 cars which also includes a hitching post for horse and buggies. The parking area drains as sheet flow across a gently sloped stabilized lawn surface, then over a steeply sloped brushy bank to the river. There is a commonly used path that leads to the river, but the surface is very steep, rocky and eroded. In addition to this path there is a narrow drive that slopes down the river bank to provide another river access. This drive is stabilized with mowed lawn; there are signs of erosion near the river from use during wet conditions. In its current, undeveloped condition, this access site does not meet ADA Accessibility Guidelines due to slope and lack of stabilized surfacing. The side banks are very steep with a mix of grasses, small tree seedlings and Japanese knotweed. The abutments of the bridge are stabilized with coarse rip-rap; this south-facing rock 'wall' reflects heat and is visually unattractive to the adjacent public spaces. The community park has shaded lawn areas and open space with benches for trail resting areas. The Warrior Run Pathways Committee has developed a master plan that includes a trail through this area to provide connectivity to the canal towpath trail. This river town has a lot to offer paddlers with banks, food, lodging, groceries, and hardware all located within a block of this access. Improved connectivity to the downtown would provide opportunity to promote these local businesses and tell the cultural and historical stories of this canal town. Improvement of this riverfront could be an asset to both paddlers and local businesses.

Recommendations:

1. Improve sloped access drive and boat launch area; provide stabilized surfacing for universal accessibility and erosion and sedimentation control.
2. Develop footpath and bank stabilization plan that incorporates the use of natural stone and native plants.
3. Develop a plan for control of invasive species (Japanese knotweed) at this site.
4. Address site issues to comply with ADA Accessibility Guidelines.
5. Work with the local businesses and regional tourist promotion staff to support the local economy by developing a link between this river access and businesses.
6. Provide means for securing boats while paddlers visit town.
7. Install discreet, directional signage identifying areas for public use.
8. Update access site information on maps when project is complete.

RM(15) Watsontown PFBC - Watsontown Borough, Northumberland County

Owner: PFBC

Inventory/Analysis:

This access area has roadway, directional, and location signage. This boat launch is accessed by a bituminous drive off State Route 405, just south of Watsonstown and adjacent to the Municipal sewage treatment plant. The access drive is in poor shape, with rough surfacing and potholes throughout. There are two small stabilized stone areas for parking; one area that would accommodate 2-3 vehicles with trailers and another with room for approximately 5-6 cars. There is a steep, bituminous paved access drive from the parking that goes directly to the boat launch, and a secondary dirt loop road with a lesser slope. The site slopes toward the river with the access drive carrying runoff and sediment from the parking area above directly to the river. Additionally, storm water pipes discharge runoff to a steep earthen ditch near the top of the slope (by parking area); erosion was observed in this ditch. This boat ramp is concrete plank construction that is in good condition. This river access is suitable for motor boats, kayaks and canoes. This boat launch should be reviewed for compliance with ADA Accessibility Guidelines. The river bank appears stable with mature trees and shrub/brush observed; Japanese knotweed is present on this site. A level area on an elevated floodplain was noted as having potential for overnight tenting, however PFBC regulations and proximity to local residents make this site unsuitable for this use.

Recommendations:

1. Redirect runoff from access road so that it drains as sheet flow over vegetated land prior to entering the river.
2. Extend drainage pipe below steep portion of embankment and stabilize drainage ditch with stone, matting or vegetation to address erosion and prevent sedimentation from being carried into the river.
3. Develop plan for control of invasive species (Japanese knotweed) at this site.
4. Explore the possibility of improving this site relative to ADA Accessibility Guidelines.

RM(13) Fort Boone Campground - Delaware Township, Northumberland County

Owner: Private

Inventory/Analysis:

This river access is located in a privately owned campground, located adjacent to State Route 405 just south of Interstate 80. There is roadway and directional signage to the campground, but no indication of a river access. This campground is located on a gently sloping floodplain, with lawn sloping to the water edge for access. There are scattered canopy trees throughout the site, but no understory or brush. There was a lot of sediment observed on the site, and large goose population present. This site is a campground with rental lots for parking seasonal recreational vehicles, with an open area along the river's edge for some tenting sites. There is no evident parking area for persons launching boats. The river is accessed by a stabilized stone lane that leads down a gently sloped bank onto a very flat floodplain to the river's edge. Runoff follows the land down the slope, with minor eroding of the stabilized stone surface. There was a concrete pad observed at the end of the driveway, but was covered with sediment. This access site appears that it would meet ADA Accessibility Guidelines if the sediment were removed from the concrete pad. This access is suitable for hand launching canoes and kayaks, and possibly small fishing boats. The riverbank has no real signs of erosion, but sediment deposits from high water events were visible.

Recommendations:

1. Secure public use agreement with private landowner.
2. Install discreet, directional signage identifying areas for public use, including the designation of a parking area.
3. Educate landowners about floodplain and stream bank vegetation management.

RM(11) Milton State Park - Milton Borough, Northumberland County

Owner: DCNR Bureau of State Parks

Inventory/Analysis:

There is roadway, directional and location signage at this river access. This site is located on a large island that is owned and maintained by DCNR State Parks. The island is connected to both Milton and West Milton by the State Route 642 river bridge, which also provides pedestrian access to the island. This State Park has numerous soccer fields, restrooms, picnic areas and playgrounds. The river access is located adjacent to the bridge, with a bituminous paved drive leading to a poured concrete boat ramp. Large rock has been used to stabilize the river bank, but there was bare soil on the access side slopes. Much of this site has mature canopy trees with maintained lawn, to provide open space for public use. Where lawn is not established knotweed is the prevalent vegetation. Paved surfaces are shaded, but runoff sheet flows to the boat launch access drive and then directly into the river. This site appears to meet ADA Accessibility Guidelines. Informational signage would improve connectivity to Milton, and promote local food, refreshments, lodging and cultural/historical features. Milton has a historic walking tour immediately off the bridge that could be a destination/point of interest for Water Trail paddlers and possible classroom activities. This State Park has walking trails, large open areas, and adequate parking to host special events that could boost local economies and connect people to the river.

Recommendations:

1. Use site sensitive bank stabilization (not rip-rap) that can provide usable surfaces for fishing or sitting and encourage human interaction with the river
2. Redirect runoff from paved surfaces to vegetative surfaces or infiltration trenches for filtering and cooling before discharge to the river.
3. Develop a plan for improved bank stabilization for the following:
 - a. Upstream riverbank stabilization that deflects erosive flows away from access.
 - b. Naturalized vegetative plantings for side slopes of boat ramp area.
4. Work with local businesses and regional tourist promotion staff to develop events that utilize this recreation area and river access and support the local economy.
5. Work with the local schools, businesses and chamber of commerce to develop a link between this river access and Milton's historic walking tour and local businesses.
6. Provide means for securing boats while paddlers visit town.

RM(7) St. George Street - Lewisburg Borough, Union County

Owner: Lewisburg Borough

Inventory/Analysis:

This boat launch is accessed by George Street, a Borough street that terminates at the river. The bituminous pavement ends approximately 100' from the water, with a stabilized stone surface leading to a bare-soil hand launch area. There are storm drainage discharge pipes along side of the stone surface drive; erosion was evident at the pipe outfall and in the ditches between the pipes and the river. Large flood debris was visible on the downstream river bank, indicating fast, strong currents during high water events. Parking is available along George and Water Streets, and the Borough also permits parking in the adjacent lawn area. The access drive carries runoff from the neighboring streets directly into the river. This river access is suitable for kayaks and canoes. This boat launch does not appear to meet ADA Accessibility Guidelines. This access is located 2 blocks from downtown, but there are no restrooms to serve this access. There is a bench, a bike rack and informational signage at this site, but there is no directional signage to the site. The river bank appears stable with mature trees and shrub/brush observed; Japanese knotweed is present on this site.

Recommendations:

1. Redirect runoff from access road so that it drains as sheet flow over vegetated land prior to entering the river.
2. Stabilize ditches with stone and vegetation to prevent erosion.
3. Develop plan for control of invasive species (Japanese knotweed) at this site.
4. Consider providing port-a-pots to serve the Water Trail.
5. Explore the possibility of improving this site to comply with ADA Accessibility Guidelines.

RM(5) Chillisquaque PFBC - West Chillisquaque Township, Northumberland County

Owner: PFBC

Inventory/Analysis:

This site is owned and maintained by the PFBC, and is accessed by a bituminous drive off State Route 405. This site is located just upstream of the pool area for the Adam T. Bower Memorial Dam in Sunbury, which provides motor boating opportunities for the region. This site is heavily used. There is a large bituminous paved parking lot for vehicles with trailers, and open lawn area that could accommodate additional overflow parking. The parking area is not shaded, and the surface is in fair condition. A bituminous paved drive slopes down to a concrete ramp for trailer access; these facilities are in excellent shape. The slope down to the boat launch is fairly steep. The river bank is fairly stable with large rip-rap stabilization along the access banks, and mature trees and some brushy vegetation upstream and downstream along the river; Japanese knotweed is prevalent. This site has large expanses of mowed grass, with the majority of paved surface sheet flowing to lawn and then overland to the river. The boat launch approach drive is shaded, but drains directly to the river. There is directional, location, and lumber heritage signage at this site; the lumber heritage sign is in unsightly condition.

Recommendations:

1. Redirect runoff from access road so that it drains as sheet flow over vegetated land prior to entering the river.
2. Minimize lawn areas; use native vegetation where practical to reduce mowing operations.
3. Develop a plan for control of invasive species (Japanese knotweed) at this site.
4. Explore opportunities with Chesapeake Bay Foundation and Northumberland County Conservation District for reforestation of extensive lawn areas and for shading parking areas to cool runoff.
5. In the future, use site sensitive bank stabilization (not rip-rap) that can provide usable surfaces for fishing or sitting and encourage human interaction with the river.
6. Remove or replace Lumber Heritage sign.

RM(3) River Edge Campground - East Buffalo Township, Union County

Owner: Private

Inventory/Analysis:

This river access is located in a privately owned campground, located between the river and US Route 15. The campground is located on a gently sloping floodplain, elevated above the river. The majority of the site is lawn with scattered canopy trees throughout the site, but no understory or brush. This site is a campground with rental lots for parking seasonal recreational vehicles, and an open area along the river's edge for 7 tent sites; these must be reserved ahead of time. There is commercial signage from the highway to the campground, but no directional signage for the boat launch area. There is no evident parking area for cars; owner indicated that parking is for campers only. The river is accessed by a steep drive down the river bank; this area is lawn, with two narrow concrete pads for vehicle tires. The side banks are covered in vegetation that is maintained close to the ground; Japanese knotweed is present at this site. The boat launch area is too steep to meet ADA Guidelines for Accessibility. This access is suitable for motorized boats, and hand launching canoes and kayaks. The upper floodplain area is mostly mowed lawn with a few mature canopy trees. The riverbank has no real signs of erosion, but sediment deposits from high water events were visible. This access is available to campers, but not to boaters in general. Many boaters on the river stop and ask just to use the restrooms; this is not allowed. The owner of this site has expressed concern about non-campers using this as just a boating access; this site has on-site septic that cannot support the additional use. The owner is agreeable to allow this site to remain listed as a campground on the guide for the Water Trail, but she has requested that this site be removed from the maps as a river access site.

Recommendations:

1. List this site as a private campground for paddlers.
2. Remove this site as a river access.
3. Educate landowners about floodplain and stream bank vegetation management.
4. Explore options for additional access in this area. The landowner indicated there is a real need for additional boat launches and restrooms in this stretch of the river. A site had been identified for future access as part of the proposed interstate bypass project, but that project is on hold.

RM(0a) Pineknotted Park - Northumberland Borough, Northumberland County

Owner: Northumberland Borough

Inventory/Analysis:

This property is owned and maintained by Northumberland Borough; Pineknotted Park is accessed off U.S. Route 11. There is no actual boat launch at this site - just an elevated concrete pier locally known as the "Sea Scouts Dock" - but this is not a boating facility.

Recommendations:

1. Remove this site as a river access.

RM(0b) Northumberland Point - Northumberland Borough, Northumberland County

Owner: Northumberland Borough

Inventory/Analysis:

This property is owned and maintained by Northumberland Borough and is accessed by a stabilized stone drive off US Route 11 that winds past a used car dealership adjacent to the municipal sewage treatment plant. There is no roadway, location, or directional signage for this site. There is a stabilized stone area for parking cars and vehicles with trailers on this gently sloped floodplain. Runoff from this parking area sheet flows directly to the river. The river bank appears stable with large trees along the water's edge and large rip-rap armoring the area adjacent to the launch. There is a poured concrete ramp for boats on trailers, and a concrete pad to a removable dock for fishing and boat launching. These facilities appear to meet ADA Accessibility Guidelines and are in excellent condition. This access is located within the pool area behind the Adam T. Bower Memorial Dam, and is popular with motor boaters from the region. This site has adjacent lawn areas with mature shade trees for resting, but the parking area is only partially shaded. This site is connected to Pineknotted Park by a footpath that traverses under U.S. Route 11.

Recommendations:

1. Redirect runoff from access road so that it drains as sheet flow over vegetated land prior to entering the river.
2. Provide additional shading for parking area to decrease the heating of surfaces and runoff.
3. In the future use site sensitive bank stabilization (not rip-rap) that can provide usable surfaces for fishing or sitting and encourage human interaction with the river.

RM(0c) Northumberland Municipal Access - Northumberland Borough, Northumberland County

Owner: Northumberland Borough

Inventory/Analysis:

This property is located off Hanover Street near the community ball fields and is owned and maintained by Northumberland Borough. There is no roadway, location, or directional signage for this site. The site is gently sloping, with the boat launch accessed by a stabilized stone drive and parking area that sheet flows directly to the river. Mature shade trees along the east side of the parking area provide some shading of the parking surface. The river bank appears stable with large trees and brushy vegetation along the water's edge and large rip-rap armoring in the area adjacent to the launch. There is a poured concrete ramp for boats on trailers, and a removable dock for fishing and launching. The concrete ramp

has an irregular surface, but otherwise these facilities appear to meet ADA Accessibility Guidelines. This access is located within the pool area behind the Adam T. Bower Memorial Dam and is popular with motor boaters from the region. This site is adjacent to a park that has ball fields and lawn areas with mature shade trees for resting. Downtown Northumberland has local businesses for eating and drinking, and a Historic District with the Joseph Priestly House (museum) only one block away. Better connectivity to this community would enhance the Water Trail experience for paddlers, and potentially provide additional business for local venues.

Recommendations:

1. Redirect runoff from access road and parking so that it drains as sheet flow over vegetated land prior to entering the river.
2. Provide additional shading for parking area to decrease the heating of surfaces and runoff.
3. In the future use site sensitive bank stabilization (not rip-rap) that can provide usable surfaces for fishing or sitting and encourage human interaction with the river.
4. Improve the boat ramp surface and explore the possibilities of providing a connection from this boat launch into town that complies with ADA Accessibility Guidelines.
5. Work with the local schools, businesses and chamber of commerce to develop a link between this river access and Northumberland's historic features and local businesses.
6. Provide means for securing boats while paddlers visit town.

RM(0d) Shikellamy State Park & Marina - Upper Augusta Township, Northumberland County
Owner: DCNR State Parks

Inventory/Analysis:

This property is owned and maintained by the Pennsylvania Department of Conservation and Natural Resources - State Parks. There is roadway, location, and directional signage for this site. The park is located off State Route 147 on Packer's Island between Sunbury and Northumberland, in the river impoundment area above of the Adam Bower Dam. This park provides 73 docks at their marina, a courtesy dock in the day use area, and docks on both sides of the boat launch ramp. There are also two (2) large concrete ramps for launching canoes and kayaks on the north side of the island (facing Northumberland Borough). Bank stabilization around the docks consists of course rip-rap, which is unsightly and not user friendly. There are large, bituminous paved parking lots throughout the island and paved driveways connecting them; parking areas are minimally shaded. This site has large expanses of mowed grass, with the majority of paved surfaces sheet flowing over lawn to the river. Pedestrian walking paths meander throughout the site through groves of mature shade trees with lawn as an understory. There are restrooms, tables for picnicking, and a wildflower garden with educational signage near the park office. Site lighting is distributed throughout the park. Site facilities are in excellent condition, and appear to meet ADA Accessibility Guidelines. This site is heavily used by motor boaters, walkers, and picnickers. Plans are being developed to renovate the marina building to serve as a river research center for the Susquehanna River Heartland Coalition for Environmental Studies.

Recommendations:

1. Redirect runoff from paved surfaces to encourage infiltration/overland sheet flow for filtration and cooling prior to reaching the river.
2. Provide shading for parking areas to decrease the heating of surfaces and runoff
3. Minimize lawn areas; use native vegetation where practical to reduce mowing operations.
4. Use site sensitive bank stabilization (not rip-rap) that can provide usable surfaces for fishing or sitting and encourage human interaction with the river
5. Develop educational signage describing site sensitive design for water quality.

APPENDIX C

Standardized Reporting Forms

The following pages contain standardized reporting forms for Volunteer Trail Stewards to use. These forms are intended to be filled out during each site visit, recording observations and maintenance tasks accomplished. This information will aid in monitoring the use of the Trail and evaluating site and corridor needs. The form will also provide a mechanism for recording volunteer hours and gauging progress being made along the Trail. These forms should be modified and improved based on feedback received from the Volunteer Trail Stewards who are using the forms in the field.

Seasonal Volunteer Trail Steward Tasks

At the beginning and end of the Trail use season, Volunteers should use the Seasonal checklist to report on the condition of the following:

Signage – check mountings and fasteners, general condition, are any missing?

Surfacing / Vegetation – check for safety concerns such as holes, obstructions, or uneven surfaces on pathways, bare spots in lawn areas, vegetation encroaching on pathways, low-hanging limbs or branches, presence or spread of invasive species, signs of erosion.

Amenities - check mountings and fasteners, surfaces, general condition, are any missing?

Routine Volunteer Trail Steward Tasks

Volunteers should use the Routine checklist to report:

Signage – are any missing or vandalized?

Surfacing / Vegetation – check for safety concerns such as holes, obstructions, or uneven surfaces on pathways, bare spots in lawn areas, vegetation encroaching on pathways, low-hanging limbs or branches, presence or spread of invasive species, signs of erosion.

Amenities - check mountings and fasteners, surfaces, general condition, are any missing?

Record site observations – note general changes including human use impacts, litter, fire rings, firewood depletion, vandalism, flood debris, river bank erosion, vegetative changes such as die-backs or invasive species, collect log book entries (when installed).

Lawn - Trim around signs and amenities bi-weekly. Mow lawn areas weekly, unless a partner entity provides mowing.

Litter/Trash - Provide litter pickup and trash disposal, unless a partner entity provides.

Restrooms - Clean restrooms or port-a-pots, and restock paper, unless a partner entity provides.

Maintenance Checklist – Routine Susquehanna River Water Trail-West Branch											
Tasks to be performed weekly, bi-weekly, or monthly depending on landowner agreement											
River Mile:		Date:				Trail Steward					
	Qty.	Condition				Type	Action Needed	Priority			Date Completed
		E	G	F	P			H	M	L	
Driveway											
Parking											
Walks/Paths											
Boat Launches											
Accessibility											
Lawn – mow weekly, trim bi-weekly											
Shrubs/Brush – check											
Trees – limb up branches											
Invasive Species											
Erosion											
Condition: E-Excellent; G-Good; F-Fair; P-Poor											
Type: B-Bituminous; CP-Concrete Plank; CS-Concrete Slab; RD-Removable Dock; SS-Stabilized Stone; M-Mulch; BS-Bare Soil											
Amenities	Qty	Condition				Type	Action Needed	Priority			Date Completed
		E	G	F	P			H	M	L	
Benches (weekly)											
Picnic Tables (weekly)											
Lighting (weekly)											
Restrooms/Port-a-pots (weekly)											
Pavilion (weekly)											
Play Equipment (weekly)											
Litter/Trash (weekly)											
Boat Rack (weekly)											
Trail Log (monthly)											
Condition: E-Excellent; G-Good; F-Fair; P-Poor											
Type: C-Concrete; W-Wood; M-Metal; P-Plastic											
Human Impacts: litter, fire rings, firewood depletion, vandalism, bare soil from heavy use, etc. What did you do?											
Miscellaneous Observations: flood debris, riverbank erosion, vegetative changes, wildlife observations, etc.											
Areas of Concern											
Ideas for Improvements											

Maintenance Checklist – Seasonal Susquehanna River Water Trail-West Branch											
Tasks to be performed weekly, bi-weekly, or monthly depending on landowner agreement											
River Mile:		Date:				Trail Steward					
	Qty.	Condition				Type	Action Needed	Priority			Date Completed
		E	G	F	P			H	M	L	
Driveway											
Parking											
Walks/Paths											
Boat Launches											
Accessibility											
Lawn											
Shrubs/Brush											
Trees											
Invasive Species											
Erosion											
Condition: E-Excellent; G-Good; F-Fair; P-Poor											
Type: B-Bituminous; CP-Concrete Plank; CS-Concrete Slab; RD-Removable Dock; SS-Stabilized Stone; M-Mulch; BS-Bare Soil											
Amenities	Qty	Condition				Type	Action Needed	Priority			Date Completed
		E	G	F	P			H	M	L	
Benches											
Picnic Tables											
Lighting											
Restrooms/Port-a-pots											
Pavilion											
Play Equipment											
Trash Receptacles											
Boat Rack											
Trail Log											
Condition: E-Excellent; G-Good; F-Fair; P-Poor											
Type: C-Concrete; W-Wood; M-Metal; P-Plastic											
Signage	Qty	Condition				Type	Action Needed	Priority			Date Completed
		E	G	F	P			H	M	L	
Highway											
Directional											
Location											
Lumber Heritage											
Orientation & Safety											
Informational											
Bridge Identification											
Campsite Identification											
Condition: E-Excellent; G-Good; F-Fair; P-Poor											
Type: W-Wooden; M-Metal; F-Fabricated Composite											
Human Impacts: litter, fire rings, firewood depletion, vandalism, bare soil from heavy use, etc. What did you do?											
Miscellaneous Observations: flood debris, riverbank erosion, vegetative changes, wildlife observations, etc.											
Areas of Concern											
Ideas for Improvements											

APPENDIX D



Memorandum of Understanding
Between The
Susquehanna Greenway Partnership
&
The National Park Service

WHEREAS, the Chesapeake Bay is an internationally recognized resource of outstanding significance and the United States has entered into a partnership with states, the District of Columbia and others to conserve and restore the Bay through the Chesapeake Bay Program;

WHEREAS, the National Park Service, as a Chesapeake Bay Program partner, is committed to assisting in enhancing interpretation of, and access to, Bay resources for the purposes of advancing and supporting Bay conservation;

WHEREAS, the Chesapeake Bay Initiative Act of 1998 (P.L. 105-312, Sections 501-2) calls for: (a) the National Park Service to facilitate development of a network of Chesapeake Bay gateways, Water Trails and other connecting routes in cooperation with other Federal agencies, state and local governments, non-profit organizations and the private sector; and (b) a technical and financial assistance program to aid development of the Gateways network;

WHEREAS, the National Park Service, in cooperation with the multi-agency/organization Working Group established by the Chesapeake Bay Program, outlines in a *Framework* and other supporting materials how the Chesapeake Bay Gateways Network will develop and how important Bay-related resource sites may participate as designated Chesapeake Bay Gateways;

WHEREAS, Susquehanna Greenway Partnership wishes to develop a Water Trail along a segment of the West Branch Susquehanna River to provide access for people to experience, enjoy, learn about and contribute to Bay-related natural, cultural, historical and recreational resources and their role in the overall Chesapeake watershed story;

WHEREAS, the Susquehanna River Water Trail–West Branch has been nominated as a Gateway Water Trail and the nomination has been reviewed and approved by the Gateways Network Working Group;

NOW, THEREFORE, the Susquehanna River Water Trail–West Branch is formally recognized as a developing Gateway Water Trail participating in the Chesapeake Bay Gateways Network and benefiting from the mutual commitments identified below:

The Susquehanna Greenway Partnership commits to facilitating development of management strategies for, and coordinating initial development of, the Susquehanna River Water Trail-West Branch and agrees to advance the purposes of the Gateways Network by adhering to the following commitments and principles:

1. Helping advance the goals of the Gateways Network: (a) enhancing place-based interpretation and education about the Bay and its related resources to increase public awareness and promote individual

stewardship of the Chesapeake Bay region; (b) facilitating access to the Bay and its tributaries; and (c) fostering conservation and restoration of the Bay through tributary based action.

2. Working to interpret the resources and stories associated with the Susquehanna River Water Trail–West Branch through programs, exhibits and materials which relate those resources to the Chesapeake Bay, its tributaries, and relevant Gateways Network overarching, primary and sub-themes.
3. Coordinating the development and management of the Water Trail to provide appropriate public access for Bay and tributary related natural, cultural, historical, recreational resources at the site, in accordance with sound resource management considerations and the Americans with Disabilities Act. Key public access points along the Water Trail shall be open to the public for the maximum number of days per week feasible, given seasonal visitation patterns and operational limitations, but must be publicly accessible at least four days per week, including at least one weekend day, during the high visitation season.
4. Displaying and maintaining the Gateways Network logo and signage in a prominent location at public access points and any primary visitor facilities.
5. Where appropriate, working to include the Gateways Network logo or graphics in brochures, maps, guides, interpretive exhibits or signage.
6. Providing descriptive information on the Susquehanna River Water Trail–West Branch’s resources and themes for inclusion within the Gateways Network web site and establishing a link to the Gateways Network home page from the Susquehanna Greenway Partnership web site.
7. Participating in physical or programmatic linkages with other existing or potential sites and routes in the Gateways Network that are geographically or thematically related.
8. Assisting in the marketing of other Gateways and the Chesapeake Bay Gateways Network to visitors to Susquehanna River Water Trail–West Branch so as to assist their further explorations of Chesapeake Bay resources and stories. This will include distributing the Gateways Network Map and Guide and orienting visitors to the use of the Map and Guide, the availability of the Gateways web site, and opportunities to explore their interests at other Gateways.
9. Promoting and interpreting conservation stewardship of Bay-related natural and cultural resources
10. Encouraging low-impact use of natural, cultural, historical and recreational resources along the Susquehanna River Water Trail–West Branch.
11. Coordinating the management of the Water Trail in ways that improve watershed health through practices such as green building design & construction, environmentally sensitive design (ESD), low impact development (LID), and/or conservation landscaping to the maximum extent practicable.
12. Identifying and working to develop opportunities for involving volunteers in on-going resource restoration or conservation activities in order to build broader involvement in Bay and tributary conservation.

The National Park Service, in partnership with the Network Working Group, agrees to foster development of the Chesapeake Bay Gateways Network and the Susquehanna River Water Trail–West Branch’s participation in it by adhering to the following principles and commitments:

1. Expanding and maintaining the Gateways Network web site as a major tool for promoting and the Network and all participating Gateways and including the Susquehanna River Water Trail–West Branch in the web site.

2. Developing and maintaining a Gateways Network technical assistance tool kit available to designated Gateways on the Network web site.
3. Including the Susquehanna River Water Trail–West Branch in Network maps and guides as they are developed.
4. Supplying at least one Gateways Network sign for use along the Susquehanna River Water Trail–West Branch and providing access to Network logos and related graphic materials.
5. Facilitating linkages with other potential or existing Network locations, including hubs and regional information centers which orient and direct visitors to Gateway sites.
6. Consulting with the Susquehanna Greenway Partnership regarding needs or eligibility for technical or financial assistance to further development of the Susquehanna River Water Trail–West Branch as a member of the Network.
7. Providing regular updates via the Gateways web site, email or other means on development of the Network, and related issues and opportunities.
8. Including Susquehanna River Water Trail–West Branch representatives in round-tables, and other forums for communicating about development of the Gateways Network.

This Memorandum of Understanding and the commitments of the parties hereunder are subject to the availability of funding. Nothing contained herein shall be construed as binding the parties to expend in any one fiscal year any sum in excess of appropriations or administratively allocated for the purpose of this agreement for the fiscal year, or to involve the parties in any contract or other obligation for the further expenditure of money in excess of such appropriations or allocations. In addition, nothing contained herein shall be interpreted as obligating the National Park Service to provide funding, compensation or reimbursement pursuant to this Memorandum of Understanding.

The National Park Service and the Susquehanna Greenway Partnership make this Memorandum of Understanding, and the designation of Susquehanna River Water Trail–West Branch as a developing Gateway Water Trail, effective upon the date of the last signature below. The parties also agree to review this Memorandum on a biennial basis.

For the Susquehanna Greenway Partnership:

Gary Bloss, Executive Director Date

For the National Park Service:

John Maounis, Director Date
Chesapeake Bay Gateways Network

APPENDIX E

Case Studies

Each Water Trail access site provides a gateway to not only the Water Trail but also the river as a natural resource. As such, access sites provide opportunities to demonstrate low-impact and site-sensitive design for land development. As part of this Stewardship and Conservation Plan, four case studies were developed. They are intended to serve as examples of how to incorporate principles of environmentally sustainable site design at river access sites along the Water Trail. If implemented, these plans can serve as examples of using green design concepts, utilizing Best Management Practices for storm water management and the Chesapeake Conservation Landscaping Council’s “Conservation Guidelines”.

The Chesapeake Conservation Landscaping Council’s (CCLC) “Conservation Guidelines” promote conservation landscaping, which “works with nature to reduce pollution,” by incorporating “environmentally sensitive design, low impact development, non-invasive native and beneficial plants, and integrated pest management to create diverse landscapes that help protect clean air and water, support wildlife, and provide a more beautiful, healthier human environment.” By applying these principles to the river access sites of the West Branch Water Trail we can help to reduce nonpoint source pollution from being carried into the river and ultimately downstream into the Chesapeake Bay.

As taken from the CCLC “Eight Essential Elements of Conservation Landscaping”...

A conservation landscape:

1. Is designed to benefit the environment and to function well for human use;
2. Contains locally native plants that are appropriate for site conditions;
3. Has an ongoing management process to remove existing invasive plants and to manage the property to prevent future alien plant invasions;
4. Provides wildlife habitat;
5. Promotes good air quality and is not a source of air pollution;
6. Conserves water and promotes good water quality;
7. Promotes healthy soils, composts plant waste on site, and amends disturbed soils to encourage native plant communities;
8. Works with nature to be more sustainable with less input.

These principles can be applied to river access sites in the following ways (numbers correspond to elements above):

	1	2	3	4	5	6	7	8
Minimize lawn areas; use native vegetation where practical to reduce mowing operations and provide diversity of habitat.	X	X	X	X	X	X	X	X
Maintain a vegetative buffer / habitat enhancement area between river and parking to filter runoff before it enters the river.	X	X	X	X	X	X	X	X
Provide shading for impervious surfaces such as parking areas to decrease the heating of surfaces and runoff.	X	X				X		X
Develop parking for cars and small trailers using permeable parking surface where suitable to reduce storm water runoff.						X		X
Employ site grading that minimizes disturbance, retains existing native vegetation, and encourages infiltration/overland sheet flow of storm water runoff onto undisturbed or suitable, stabilized land.						X		X
Use site sensitive bank stabilization (other than rip-rap) that can provide usable surfaces for fishing or sitting and will encourage human interaction with the river.	X	X						X

Site sensitive design can improve water quality by reducing the need for chemical fertilizers and herbicide application, filtering sediment and pollutants from runoff, and shading site surfaces so that the temperature of storm water runoff is reduced before it enters the river. Where viable, restoration of riparian buffers should be incorporated, with river access sites serving as opportunities for early

implementation. These ideas can be accomplished in varying degrees, and/or implemented in stages by taking small steps as site improvements are needed.

When developing a new site, minimize the disturbance of soils and native vegetation to the greatest extent possible. This will protect the existing environmental integrity and minimize potential for erosion. Work with existing slopes, identifying areas best suited to development and also those not suited to development; propose grading that minimizes site impacts. Wherever possible, runoff from developed areas should be designed to discharge as sheet flow so that runoff is not concentrated to cause erosion, and that discharge flows onto well-stabilized/undisturbed ground or into recharge trenches for infiltration. This will aid to filter and cool the water before it enters the river. Providing shading of surfaces will also reduce the temperature of surface runoff, which helps to maintain thermal water quality. By preserving and/or planting canopy trees surfaces can be shaded and spaces can be defined; some level of enclosure enhances a sense of place, and provides amenity to site visitors.

In addition to providing environmental benefits, when sites are designed to work with nature the long-term site maintenance can be reduced. In the short-term, additional maintenance may be required to remove invasive species and aid establishment of native species. However, once these are established and routine maintenance (such as weekly mowing) has been reduced, these access sites will be more desirable for being 'adopted' and maintained by local volunteer stewards. An excellent resource for addressing invasive species and mobilizing volunteers is the publication "Citizen's Guide to the Control of Invasive Plants in Wetland and Riparian Areas" (Alliance for the Chesapeake Bay) which can be viewed on-line at <http://www.acb-online.org/pubs/projects/deliverables-251-1-2005.pdf>

The sites selected for the Case Studies are indicated on the Corridor Recommendation Maps. These sites have been selected based on the opportunities that they offer to demonstrate options for applying various techniques for environmental site improvements. It should be noted that while these Case Studies make recommendations for improvements, land owners and managers are not obligated to implement these proposed concepts. If the land owners and managers of these four sites choose not to apply these suggestions, the Case Studies can still serve as examples for illustrating to water trail managers ways in which to re-evaluate river access sites as opportunities to promote land use in a way that minimizes impacts to the natural resource that we are promoting. The Case Study sites are as follows:

RM(227) - Cherry Tree Municipal Access (map 1)

This site demonstrates the value of re-vegetating steep river banks that are currently maintained as lawn with warm season grasses and native riverbank species. This will provide vegetation with deeper roots for bank stabilization and reduce reliance on mowing operations.

RM(83) – Baker Run DCNR Access (map 9)

This site development has been conceptually designed to work with the existing site features. Conceptual grading for the roadway and parking proposes to: minimize earth disturbance to preserve existing canopy trees, limit potential for erosion, and discharge runoff as sheet flow onto well-stabilized/undisturbed ground.

RM(45) – Linden PFBC Access (map 12)

This site is an example of an existing access area with large expanses of bituminous paving and maintained lawn. By modifying and shading parking lot surfaces and allowing large areas of lawn to revert to meadows, the quality of water leaving this site could be improved, and diversified habitat could be provided to local species. The proximity of this site to population centers also provides opportunity for potential environmental education.

RM(15) – Watsontown Municipal Access (map 15)

Watsontown is a river town that needs to have user-friendly access to the river. The existing path of use for river access traverses down a steep, rocky embankment through stands of Japanese knotweed (invasive species). The concept for this case study proposes a sloped walkway along the river bank, with

native plantings to replace the invasive species. This path can also connect the adjacent municipal park to the canal towpath walking trail.

The process of sustainable design is outlined in detail in the CCLC documents, available online through www.chesapeake-landscape.org. A general outline that was followed for the case study sites is as follows:

- 1) Perform site analysis
 - a) Review soils information : determine soil texture, stability (will it erode?), wet vs. dry condition, acid vs. base, depth to bedrock, general wetland presence.
 - b) Flood mapping should be reviewed to determine areas and depth of inundation vs. short-term flooding.
 - c) Perform a site visit to observe existing conditions, note special features, elements of concern, or areas in need of improvement.
- 2) Set goals for the project – what are the specific things to be accomplished
 - a) Function: What is to be developed, and what purpose does it serve? What type and how many people must it accommodate? What operational needs are there?
 - b) Circulation: What would be the natural path of flow through the site to perform the desired function? (think of yourself, step by step using the site for its intended purpose)
 - c) Amenities: What features above the core function would enhance this site?
 - d) Are there natural site features (from site analysis) that need to be considered or protected in the design? How do the proposed changes impact the site and local inhabitants? (aquatics, insects, birds, small mammals, people)
 - e) Maintenance: what capacity exists to maintain this site? Can maintenance tasks and the site's carbon footprint be reduced?

The following case studies followed this general outline, and developed conceptual plans to communicate the goals and ideas that were developed. To take these to the next level – being built –professional assistance should be obtained to implement the ideas. With the exception of the Baker Run site, no site survey was performed; base mapping was compiled from existing data as available from on-line (PASDA) and local sources. Detailed site plans, and permits for disturbance and development all need to be factored into the construction of the final project. Design professionals that are experienced at taking your ideas and developing them into construct-able plans will also be responsible for contacting utility companies and working with permitting agencies and making your ideas viable on the ground.

It is our intent that these Case Studies will demonstrate opportunities for using site sensitive design principles that can be applied to many other access sites. We also hope that this inspires others to look beyond the immediate function of the access site - to see it in the context of the natural environment, the local water resource, and the larger context that includes the Chesapeake Bay.

It will be important to refer to Best Management Practices as they exist at the time of implementation. Publications that should be used for reference when implementing these recommendations include Citizen's Guide to the Control of Invasive Plants in Wetland and Riparian Areas" (Alliance for the Chesapeake Bay - view this on-line at: <http://www.acb-online.org/pubs/projects/deliverables-251-1-2005.pdf>), and the Penn State Vegetation Management Research Publications "Roadside vegetation management Factsheets 5 and 5a" and the "CREP weed management Factsheet 4."

Case Study 1

RM(227) - Cherry Tree Municipal Access (map 1)

This access site is located in Canoe Place Park, immediately downstream of the State Route 580 river bridge. This site is owned by the Borough of Cherry Tree, who currently contracts for the site mowing. The Borough has expressed a need to reduce maintenance and mowing operations on this site, and to also address the problem of geese that have taken up residence and litter the park with their droppings.

Site analysis:

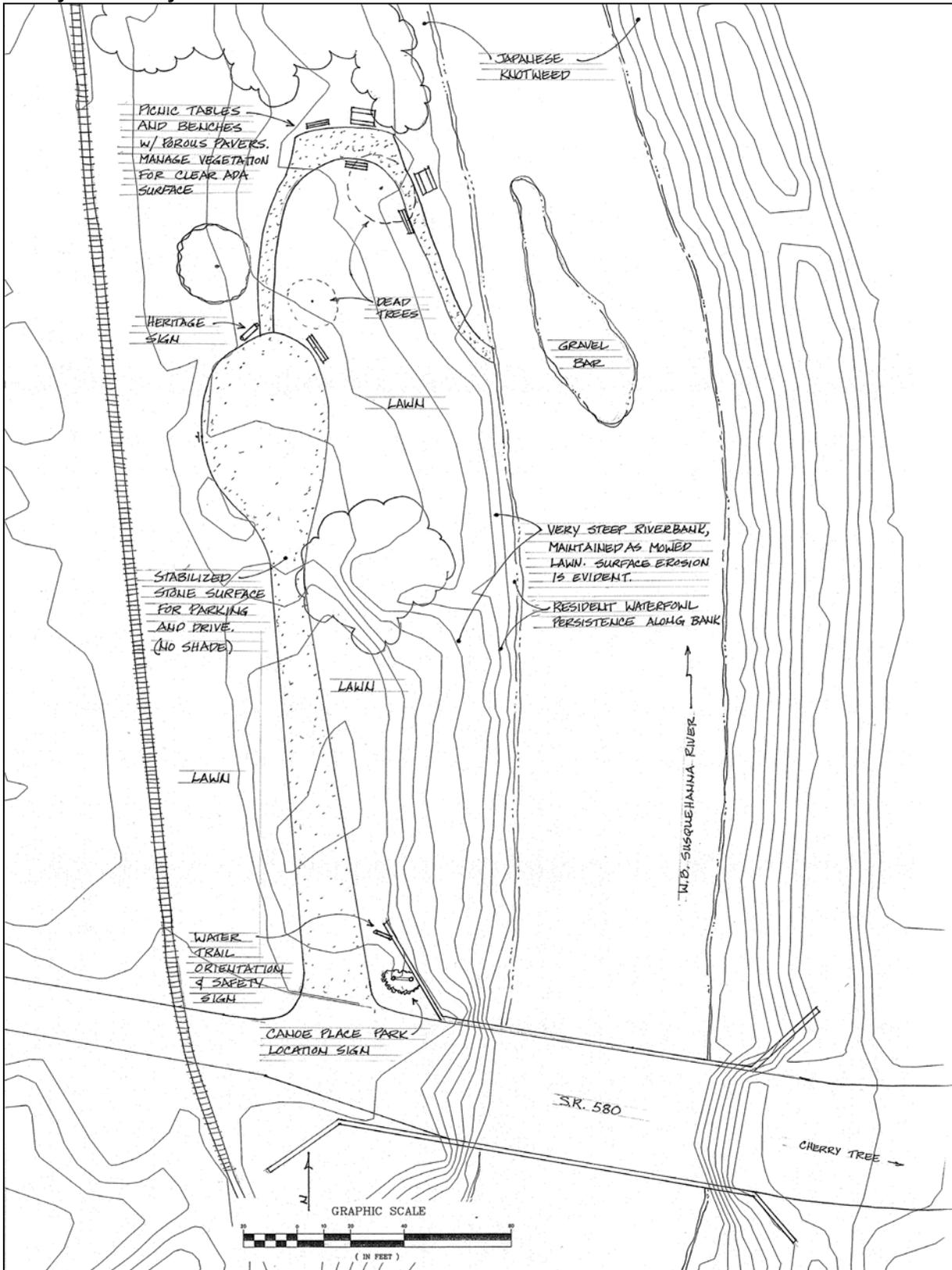
This small community park has a stabilized stone parking area, and a walkway constructed of pervious pavers that leads to the river for hand launching canoes and kayaks. Vegetation growing in the pavers needs to be controlled to maintain an accessible pathway. Depositional material has formed a gravel bar in the river at the launch location, which makes this site unusable in any low flow conditions. Upstream riverbank erosion needs to be addressed to control this transport of sediment. There is a small tree grove and a gently sloped lawn area with picnic tables and benches for day use. (Several shade trees on site are dead and should be removed.) The remaining site has very steep riverbank slopes that are well-vegetated in maintained lawn; the surrounding riverbanks are covered entirely with Japanese knotweed. There are a few canopy trees near the parking area to provide some shade.

Goals - with corresponding site recommendations:

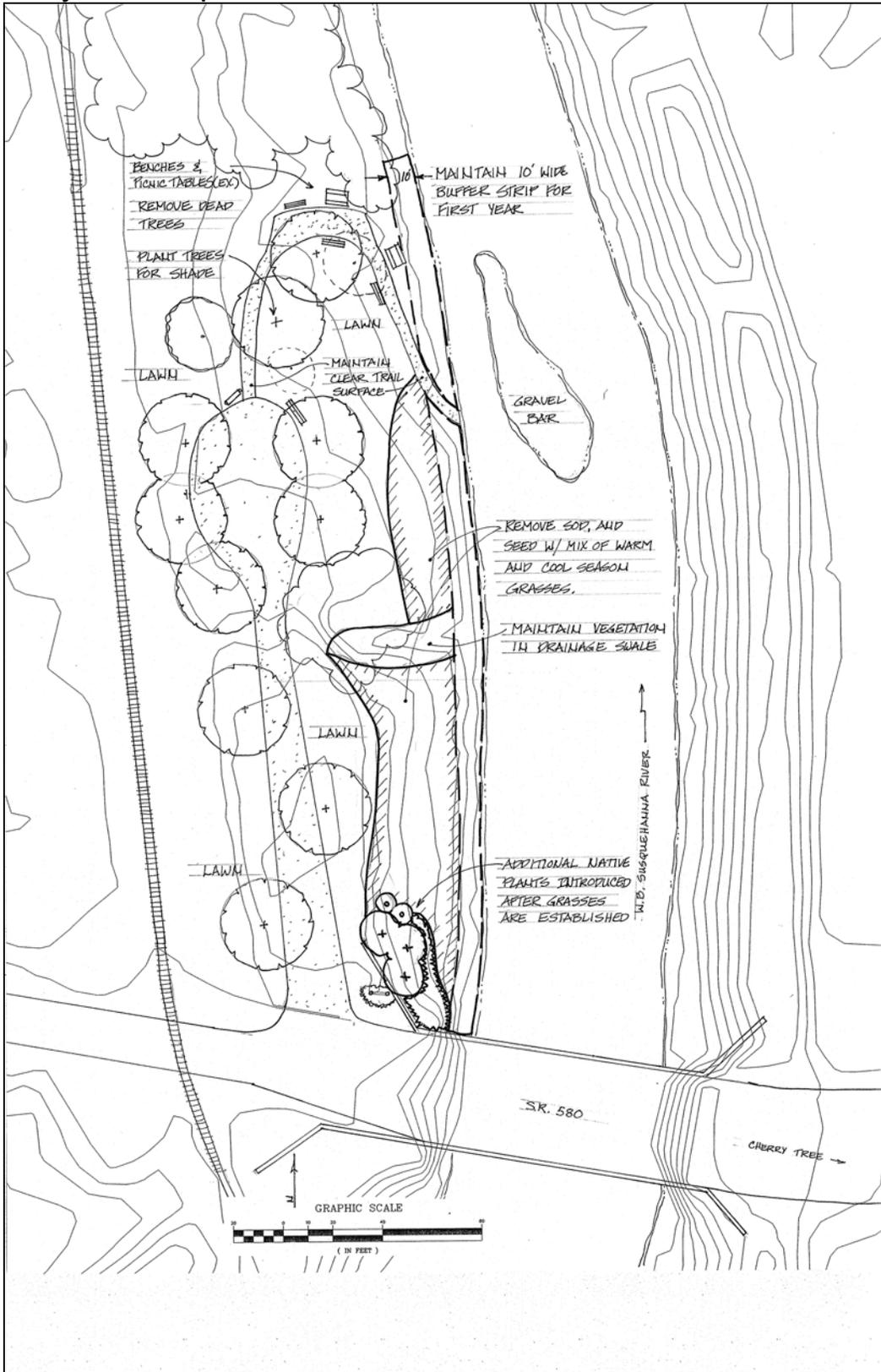
- 1) Reduce regular on-site riverbank mowing operations. Maintain lawn in picnic and use areas.
 - a) While maintaining a 10' strip of lawn along the river, spray remaining sod grass on the steep riverbank slopes with Round-up "Aquaneat" (or equal) in the fall of the year (to maximize uptake of the herbicide).
 - b) In the spring, remove the dead sod. Re-seed with a mix of cool and warm season grasses and native riverbank species. Use a seed mix that contains: river bank wild rye, Indiangrass, switchgrass, and side oats gramma.
 - c) The first summer: mow three times (to minimum 10" tall), before plants form seeds.
 - d) The second summer: if grasses appear to be established, mow to a minimum height of 10" in mid-late July. Spray remaining 10' strip of lawn along the river with the herbicide, and follow the same steps above.
 - e) Once fully established, mow one time per year in mid-late July, to a minimum height of 10". Monitor the site for invasion of Japanese knotweed. If knotweed appears, eradicate it from the site.
 - f) When grasses are well-established, introduce additional native plants including black cherry (*prunus serotina*), river birch (*betula nigra*), black willow (*salix nigra*), buttonbush (*cephalanthus occidentalis*), and arrowwood (*viburnum dentatum*) to slow the velocity of high water and add diversity of habitat.
 - g) Remove dead trees and plant canopy trees to provide shade.
 - h) Manage vegetation to maintain a clear surface on ADA accessible paths.
- 2) Discourage geese from taking up permanent residence.
 - a) In the area of newly established grasses, maintain a minimum grass height of 18" for a depth of 15' from the river. Waterfowl will not take up permanent residence where they do not have a clear view to the water resource.

This site is in a region that contains some of the highest concentrations of abandoned mine lands in the Commonwealth. Messaging could be incorporated into signage on this site to convey the importance of stewardship. Mineral resource extraction (coal and clay mining) of the 19th Century left a legacy of impaired water resources throughout this region. While much is being done to address point source discharges of abandoned mine drainage (AMD), there is much more remaining to be done. By being thoughtful stewards of our land and water today, we help to create a positive legacy for generations in the future.

Cherry Tree Analysis



Cherry Tree Concept



Case Study 2

RM(83) – Baker Run DCNR Access (map 9)

This site is owned by DCNR Bureau of Forestry, and is planned to be developed for use as a river access site with camping, on the West Branch Water Trail. There is a need for both camping and access in this region of the trail, where the river winds through the steep mountains between Renovo and Lock Haven. The site is accessed via S.R.120, which is designated as the Bucktail Trail-Scenic Byway State Route 120.

Site analysis:

This site consists mostly of moderately sloped uplands with well-drained soils having a very rocky surface, and a canopy of mature hardwood trees (oak forest) on a bench above the river.

There is also a 30' high, riverbank that descends steeply down to the river, consisting of alluvial deposits of sandy soils, with a vegetative cover including some trees, Japanese knotweed and low lying areas of herbaceous cover. This steep bank presents challenges to accessing the river. There are two small drainage channels on this site that carry flow discharged from the upslope roadway cross pipes.

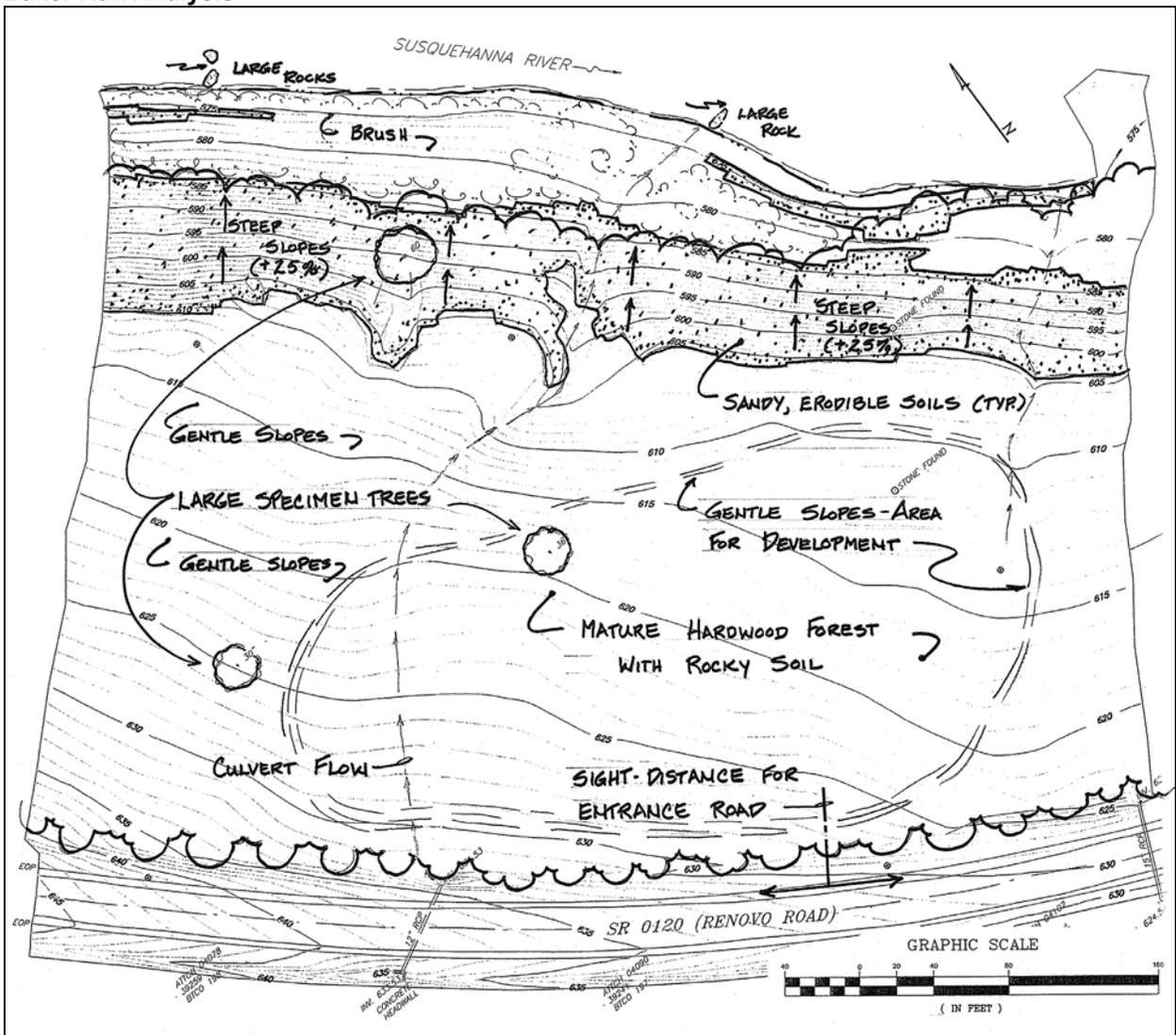
Goals - with corresponding site recommendations:

- 1) Develop a hand-launch river access to serve local population centers, and provide areas for water trail camping for through-paddlers. Develop a site plan for parking, roadway, access to the river, restroom, and areas for camping that respect the natural systems and features of the site.
 - a) Construct parking and circulation paths on the more gently sloped areas of the site.
 - b) Minimize impacts to steep riverbank slopes. Angle access trail upstream, so rising flood waters will have to ascend trail in elevation, thereby reducing velocities and erosive impact to the trail.
 - c) Avoid and/or work with existing drainage channels and flow patterns.
 - d) Cross over the existing drainage channel with a footbridge to minimize impacts.
- 2) Minimize area of site disturbance to conserve mature canopy trees and protect river bank from erosion.
 - a) Construct a one-way drive with drop off area for people and gear.
 - b) Avoid disturbance of river bank down slope of natural drainage discharge areas.
- 3) Protect the quality of water resources by implementing measures to filter storm water and promote infiltration to ground water.
 - a) Reduce runoff by using pervious, stabilized stone surfacing for roadway, parking and trail; provide limestone screenings in areas providing universal accessibility.
 - b) Grade lower edge of parking area level so that surface runoff sheet flows (is not concentrated) to minimize erosion.
 - c) Grade disturbed areas so that runoff flows onto either undisturbed or well-stabilized land.
 - d) Install French mattresses as needed to provide drainage under roadway. This will allow water to 'flow through' instead of being 'piped under' roadway, to minimize concentration of flow and promote infiltration.
 - e) Use on-site rock to the extent possible. Stabilize edge of trail on river bank and drainage areas, and place boulders on-site for use as seating areas and traffic control.
- 4) Retain existing native vegetation to the extent possible, and maintain plant regime appropriate to a mature hardwood forest.
 - a) Grade site to retain existing large specimen trees and majority of existing trees.
 - b) Remove invasive species. Japanese knotweed should be addressed.
 - c) Plant disturbed areas of site with species native to the region and appropriate to the landscape setting. Suggested plants include: Upland area: white oak (*quercus alba*), red oak (*quercus rubra*), red maple (*acer rubrum*), black cherry (*prunus serotina*), serviceberry (*amelanchier allegheniensis* or *canadensis*), rhododendron (*rhododendron maximum*), and "Eastern Native Habitat" seed mix (by Ernst Seed Company or equal), containing: big bluestem, Canada wild rye, Indian grass, partridge pea, ox eye sunflower, switchgrass, showy tick trefoil, and black-eyed Susan. Riverbank area: silver maple (*acer saccharinum*), river birch (*betula nigra*), arrowwood viburnum (*viburnum dentatum*), silky dogwood (*cornus amomum*), buttonbush (*cephalanthus occidentalis*), black willow (*salix nigra*), goat willow (*salix caprea*), elderberry (*sambucus*

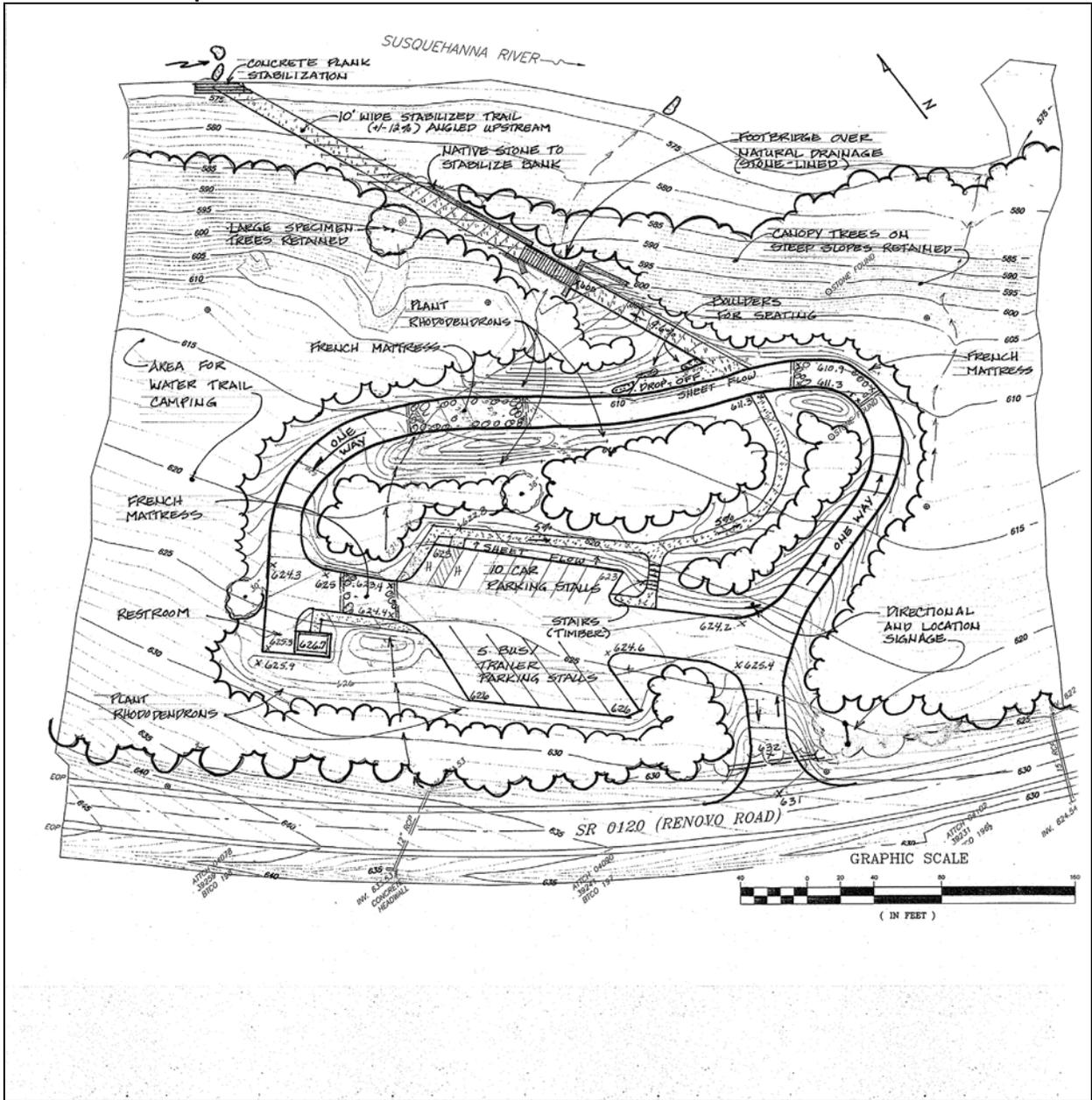
Canadensis), and Riparian Buffer Mix (by Ernst Seed Company or equal), containing: big bluestem, common milkweed, blue false indigo, fox sedge, silky dogwood, showy tick trefoil, partridge pea, Canada wild rye, Virginia wild rye, Joe Pye weed, Spotted Joe Pye weed, boneset, grass-leaved goldenrod, ox eye sunflower, soft rush, wild bergamot, deer tongue, switchgrass, and tall white beard tongue, black-eyed Susan, staghorn sumac, little bluestem, Indian grass, blue vervain, giant ironweed, and arrowwood.

This site is in a region where trees were harvested as part of the 19th Century lumbering era. Mountainsides were literally denuded of woodland vegetation, and rains that followed washed soil into the waterways. In the early 20th Century the Civilian Conservation Corps (CCC) re-planted many acres of those forests along with the efforts of the Bureau of Forestry, who is responsible for the conservation and management of much of the forest resources that surround us. By being thoughtful stewards of our land and water today, we help to create a positive legacy for generations in the future.

Baker Run Analysis



Baker Run Concept



Case Study 3

RM(45) – Linden PFBC Access (map 12)

This site is owned by the Pennsylvania Fish and Boat Commission (PFBC), and is developed for use as a river access site for hand launching and for motorized boats utilizing the impoundment area behind the Hepburn Street Dam at Williamsport. This site is heavily used, and is in good condition. The site is accessed via Antlers Lane off of Fourth Street near the junction with S.R.220.

Site analysis:

This site lies within a gently sloped floodplain elevated above the river with well drained soils. Site improvements consist of a large bituminous parking area surrounded by expansive lawn. The lawn slopes down from Antlers Lane to the swale area, dotted with a mix of black cherry and locust trees with areas of bare soil that appears to be hard to mow. There is a steep access drive down to the river with a concrete ramp for launching boats on trailers; there is also a removable dock for fishing and boating access. The paved parking lot is sloped so that runoff sheet flows onto vegetated lawn surface, without concentrated flows. The water then moves through the site in grass-lined swales that provide filtering and promote infiltration into the groundwater system; these are storm water features using good design. It was observed that during wet periods, the grass-lined swales were not mowed regularly on this site. At these times a naturalized meadow emerged with native herbaceous plants.

Goals - with corresponding site recommendations:

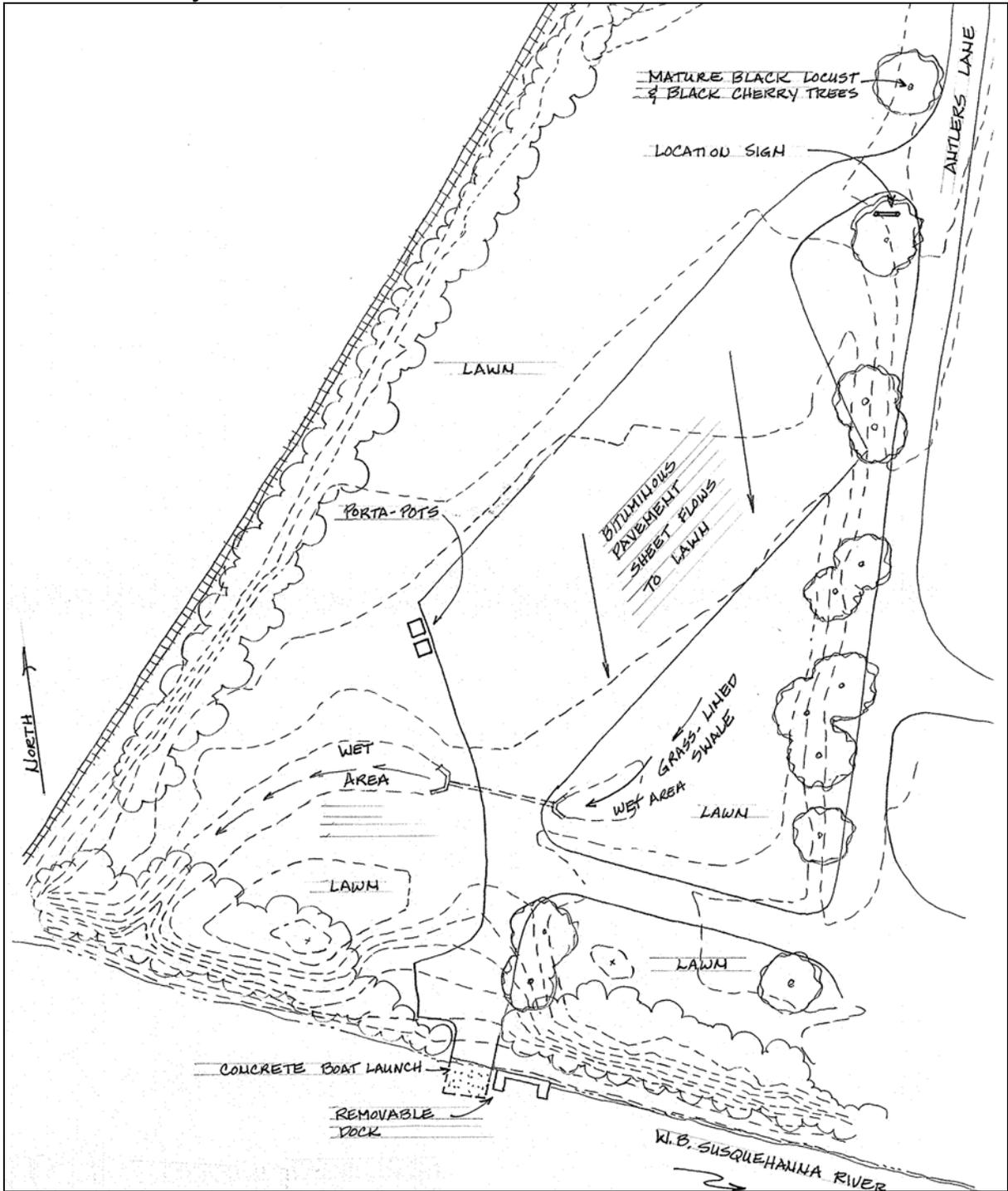
- 1) Enhance the design of this site by incorporating environmentally sensitive design and maintenance techniques.
 - a) Cease mowing of central swale areas and introduce wet plant species such as: Highbush blueberry (*vaccinium corymbosum*), silky dogwood (*cornus amomum*), buttonbush (*cephalanthus occidentalis*), and spicebush (*lindera benzoin*).
 - b) Reduce the mowing operations in the immediate area surrounding the central swale plantings and allow native herbaceous species to emerge from the floodplain seed bank. Mow every two years to allow species to establish and set seed, with biennial mowing to maintain lower height and visual appearance.
 - c) Reduce mowing operations in the western field to encourage natural meadow species to emerge from the floodplain seed bank. Mow annually in mid-late July (after seeds have set) to a height no less than 10". This will discourage shrubby vegetation and maintain a neat appearance.
 - d) Plant a tree grove in the northern portion of the meadow. Suggested plants include: black cherry (*prunus serotina*), black walnut (*juglans nigra*), and butternut (*juglans cinerea*)
 - e) Routinely mow a turf path and perimeter strip around meadow areas to provide a clean edge and a well-maintained appearance.
 - f) Plant a mix of warm and cool season grasses and understory trees on the sloped embankment along the eastern perimeter. Mow perimeter along Antlers Lane in mid-late July to a height no less than 10". Suggested plants include: Grass mix: native Upland Wildlife Forage and Cover Meadow Mix (by Ernst Seed Company or equal), containing: big bluestem, partridge pea, plain coreopsis, showy tick trefoil, Virginia Wild Rye, Coastal Panic Grass, switchgrass, fowl bluegrass, black-eyed Susan, little bluestem, Indian grass, and gamma grass. These grasses have deep roots for soil and moisture holding capacity, and need to be mowed only once per year to a minimum height of 10", if low height is desired. Understory tree species could include hawthorns (*crataegus viridis* 'Winter King'), hazelnuts (*corylus* sp.), Blackhaw viburnum (*viburnum prunifolium*), (and serviceberry (*amelanchier allegheniensis* or *canadensis*).
 - g) Plant canopy trees to shade stabilized surfaces and to help reduce the temperature of storm water runoff. Recommended species include: American linden (*tilia Americana*) red oak (*quercus rubra*), pignut hickory (*carya ovata*), and black walnut (*juglans nigra*). (these can be planted just outside the routinely mowed path; see 'd' above)
- 2) Reduce the area of maintained lawn for multiple benefits.
 - a) Diversified native plantings provide food, shelter and nesting areas for insects, birds, reptiles, amphibians, and small mammals. This could provide opportunities for ecology/outdoor classroom activities with local schools.

- b) Minimizing mowing operations reduces the carbon footprint of the site by requiring less use of fossil fuels. Reduced mowing requirements could make access sites more desirable for being 'adopted' by local volunteers.
- 3) Protect the quality of water resources by implementing measures to filter storm water and promote infiltration to ground water.
 - a) When existing paved surfaces are in need of repair, replace paved surface with a pervious stabilized surfacing to promote storm water infiltration, filtering, and cooling.
 - b) Diversifying the plantings on site will provide shade for runoff in the filter areas, helping to lower runoff temperatures.

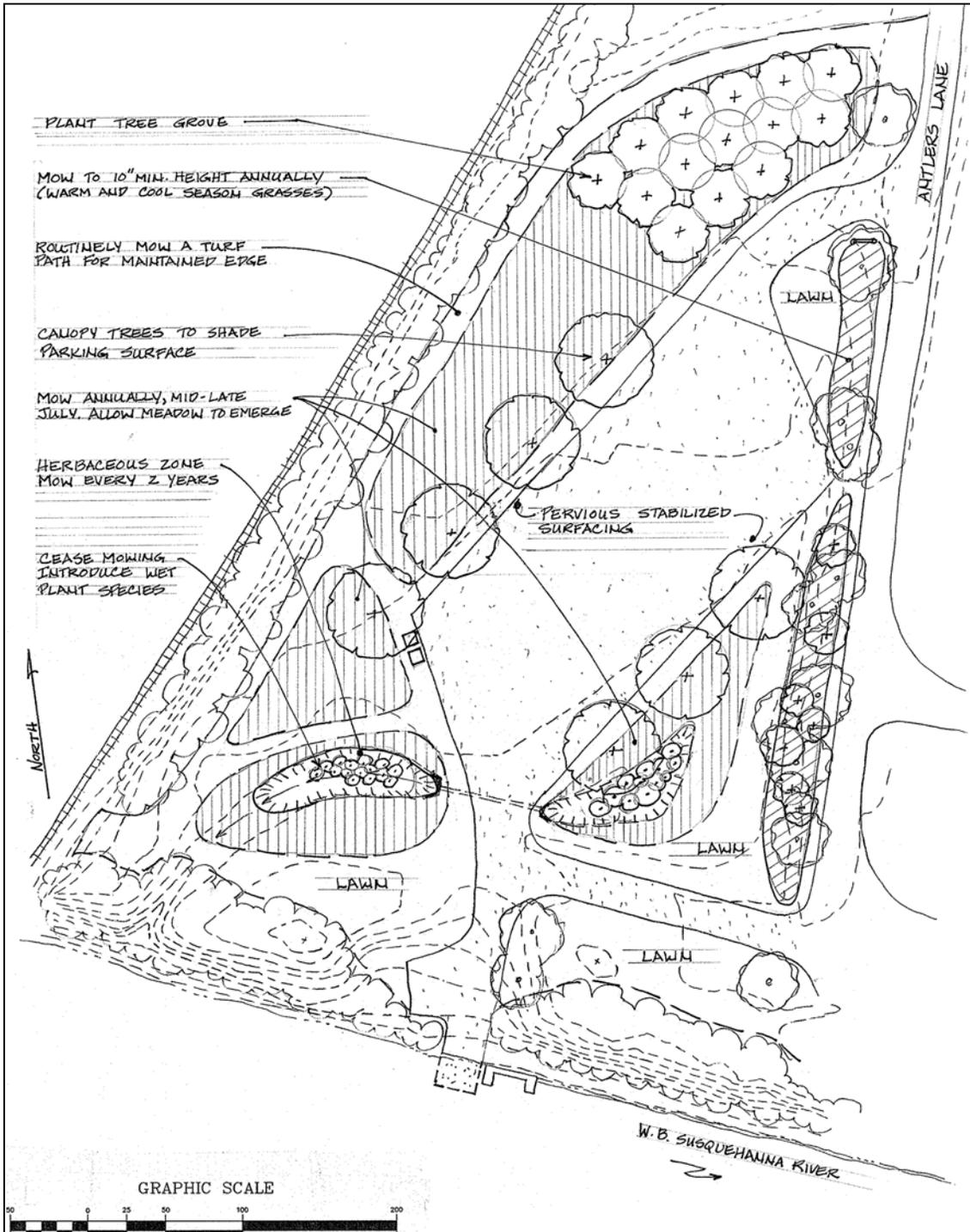
For additional information on reduced mowing concepts refer to the Delaware Department of Transportation Roadside Vegetation Concept and Planning Manual "Enhancing Delaware Highways". This publication can be downloaded or viewed on-line at:
<http://www.urbanforestrysouth.org/resources/library/enhancing-delaware-highways--roadside-vegetation-concept-and-planning-manual>.

This site is located in an impoundment area of the river, upstream of the Hepburn Street Dam. Over the years, dams have been built along the river for power generation and recreational purposes. While these dams have served their intended purposes, they have also served to stop the migration of fish species - including eels and American Shad. Efforts are underway to provide a means for aiding these species to overcome the dams, so that they can return to headwater areas for completing their natural life cycles. By being thoughtful stewards of our land and water today, we help to create a positive legacy for generations in the future.

Linden PFBC Analysis



Linden PFBC Concept



Case Study 4

RM(15) – Watsonstown Municipal Access (map 15)

This site is owned and maintained by Watsonstown Borough, bounded by the municipal parking lot on Canal Street, the river, a Borough park, and the State Route 1014 river bridge. This quaint river town is rich in canal history, with a downtown located just two blocks from the river. There is a PFBC boat launch 1 mile downstream that accommodates motor boats on trailers, but there is no direct access for local citizens to walk down and enjoy the river, or for paddlers on the water trail to access the amenities that this town has to offer.

Site analysis:

This property consists of a sandbar at the river, a small overflow channel, a steep rocky riverbank, and a gently to moderately sloped lawn area adjacent to the municipal parking lot and park. This municipal parking lot provides adequate parking to serve this river access. Along the abutment of the bridge there is large rip-rap (stone) for stabilization of the steep slopes; this rock is not desirable to look at, and it reflects solar heat onto this site. Currently, people wishing to access the river use a well-worn path that traverses down a steep, rocky embankment to get to the river's edge. This path has a surface that is not stable, and shows signs of erosion. There is a very large sycamore tree at the top of the bank, with Japanese knotweed (invasive species) covering the majority of the river bank. There is also a grassed lane that leads down to the river's edge; this lane descends in a downstream direction and reaches the river in a backwater eddy that accumulates sediment, making it too 'mucky' for practical use.

Goals - with corresponding site recommendations:

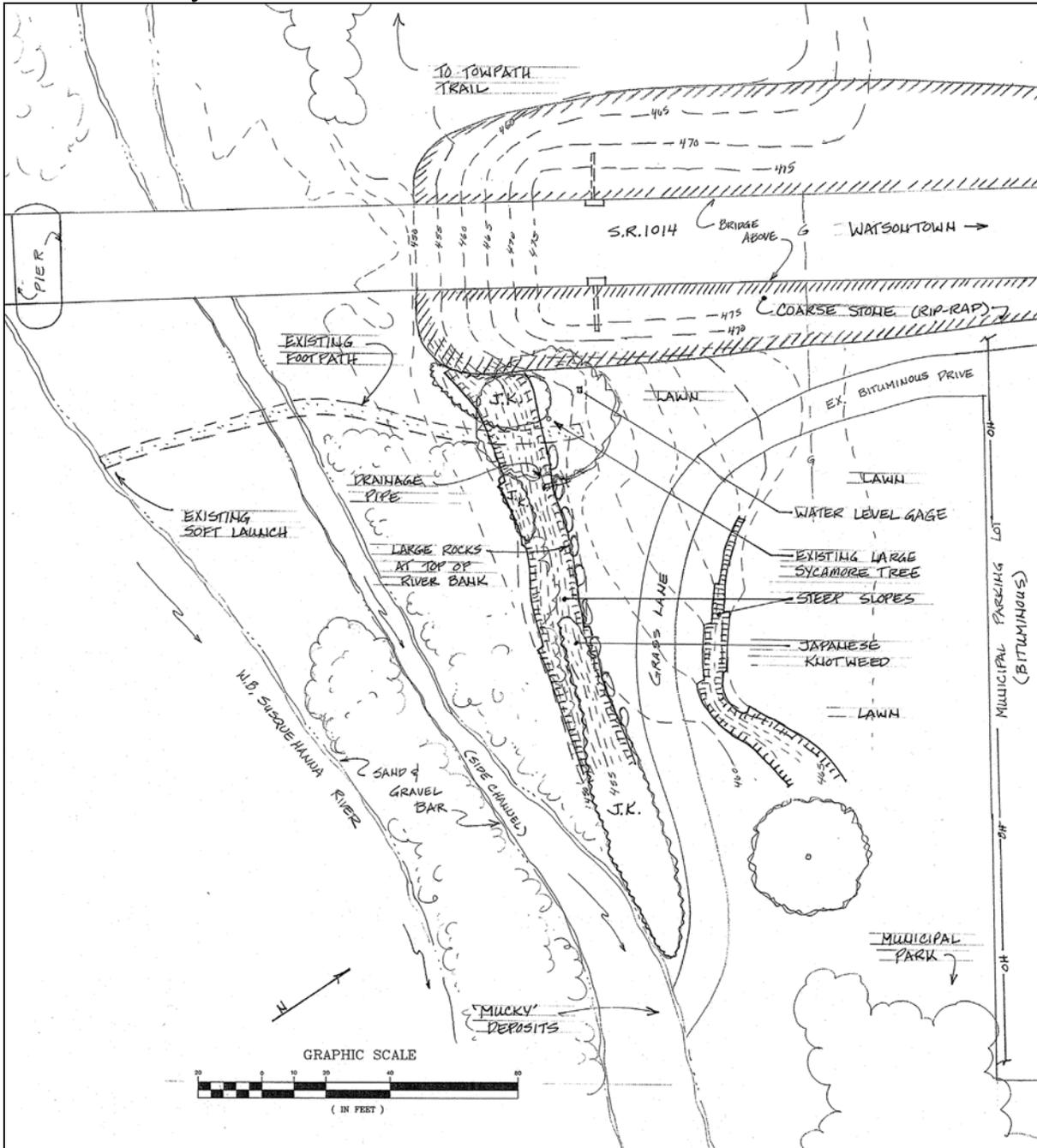
The concept for this case study proposes a sloped walkway along the river bank, with native plantings to replace the invasive species. In addition to providing access to the river, this path would connect the adjacent municipal park to the canal towpath trail on the other side of the bridge.

- 1) Develop a hand-launch river access to serve local population centers, and provide access to local amenities for water trail paddlers.
 - a) Construct a stabilized trail down the riverbank, minimizing impacts to the steep slope. Angle the access trail upstream, so rising flood waters will have to ascend in elevation, thereby reducing velocities and erosive impact to the trail surface.
 - b) Connect trail to the existing path of use on the sand and gravel bar. Further development of this path and soft launch are not recommended due to the ever-changing character of sand bars in dynamic river systems.
- 2) Minimize area of site disturbance to conserve mature canopy trees and protect river bank from erosion.
 - a) Minimize impacts to steep riverbank slopes, using a portion of the existing grassed lane for descending the river bank.
- 3) Protect the quality of water resources by implementing measures to filter storm water and promote infiltration to ground water.
 - a) Grade disturbed areas so that runoff flows onto either undisturbed or well-stabilized land.
 - b) Replace Japanese knotweed with a mix of cool and warm season grasses with deep roots for bank stabilization and runoff filtration.
- 4) Retain existing canopy trees. Remove invasive species and establish a plant regime appropriate to a riverine floodplain and riverbank eco-system that will require less long-term maintenance.
 - a) Grade site to minimize impact on existing large specimen trees.
 - b) Remove invasive species. Japanese knotweed should be addressed.
 - c) Plant disturbed areas of the site with species native to the region and appropriate to the landscape setting.
 - d) Riverbank: Plant a mix of warm and cool season grasses in an 8-foot wide strip for a well-maintained appearance. Seed mix should include river bank wild rye, Indiangrass, switchgrass, and side oats gramma. This vegetation can be mowed with a sickle bar once per year (late July) to a height of not less than 10" to maintain tidy appearance from downtown, and to preserve the view of the river. For a maintained appearance, annual mowing of this perimeter to 10" height can be performed in mid-late July with a sickle-arm.

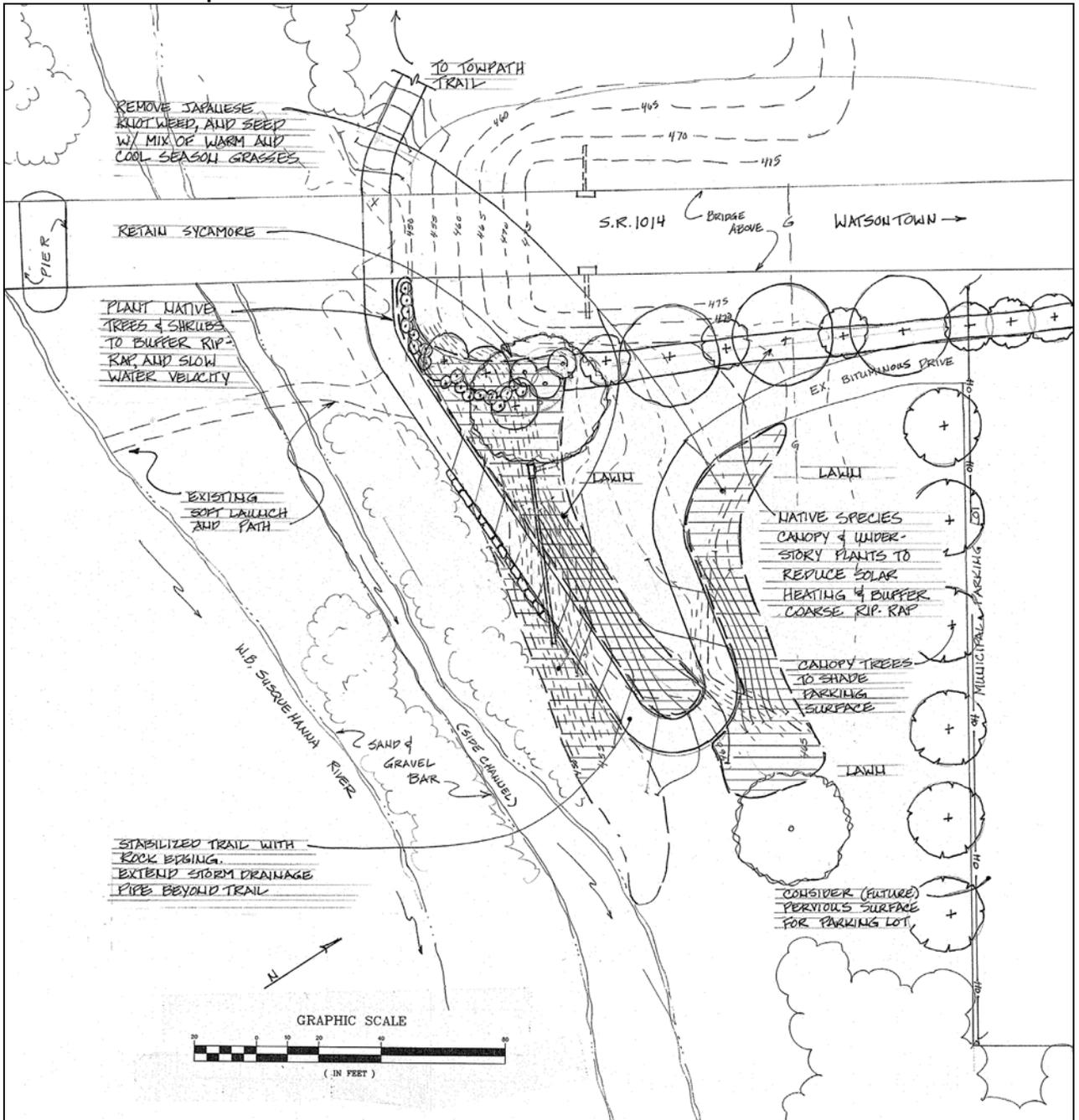
- e) Riverbank/Rip-rap: Red maple (*acer rubrum*), black cherry (*prunus serotina*), pignut hickory (*carya ovata*), and river birch (*betula nigra*) can be planted in front of the bridge abutment to soften the harsh visual impact of the rip-rap. Silky dogwood (*cornus amomom*) and arrowwood (*viburnum dentatum*) inter-planted along this slope can help to protect the bank from erosive flows.
- f) Bridge rip-rap buffer: Plant a mix of shade trees and understory plantings to soften the visual impact of the rock and reduce the solar heat reflected from it. Any plantings within the Penn DOT right-of-way will need to comply with the agency adopt and beautify program. (The Penn DOT administrator will work with local partners to address the needs for the 'adopt-a-site' program.) Red maple (*acer rubrum*), American linden (*tilia Americana*), hawthorns (*crataegus viridis* 'Winter King'), Blackhaw viburnum (*viburnum prunifolium*), serviceberry (*amelanchier alleghenesis* or *canadensis*), fragrant sumac (*rhus aromatic*), and arrowwood (*viburnum dentatum*) are native species that will do well here and fit into the landscape situation. Planting a selection of these species in a more formal arrangement will serve as a visual buffer to the coarse rip-rap, and provide a transition from the native riverbank plantings to the downtown area.
- g) Upland: maintain a smaller area of lawn, as appropriate for a downtown setting. Provide medium canopy trees to shade the parking lot surface; consider pervious surfacing when bituminous pavement needs to be improved.

This site is located in a developing area within an agricultural region of the watershed. Historically we think of mineral extraction as impacting our waters; but soil erosion, herbicides, pesticides and excess nutrient runoff are also sources of pollution – from both agricultural land and land developments. Fortunately, the impact on water quality from farms and developed lands can be improved by following Best Management Practices and conservation guidelines. By being thoughtful stewards of our land and water today, we help to create a positive legacy for generations in the future.

Watsonstown Analysis



Watsonstown Concept



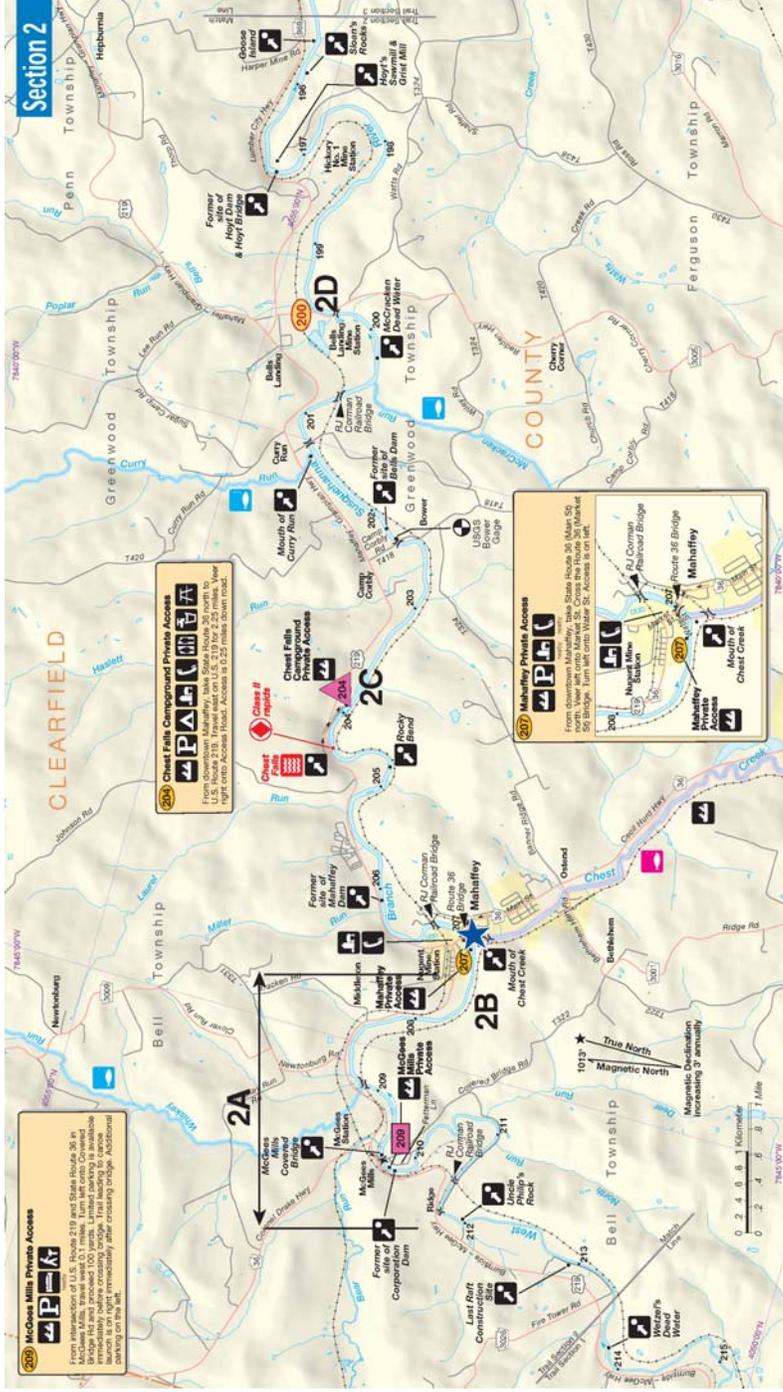
APPENDIX F

Corridor Recommendation Maps

Graphic Acknowledgements - The base mapping used was provided by the North Central Pennsylvania Regional Planning and Development Commission. (Base mapping graphic design by Herrmann Advertising Design/Communications, with maps prepared by Eureka Cartography.) Modifications as shown for the Corridor Recommendation Maps were by prepared by Tara Baier, Graphic Design. Base map for cover image courtesy of Google Maps.

Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 2

LEGEND

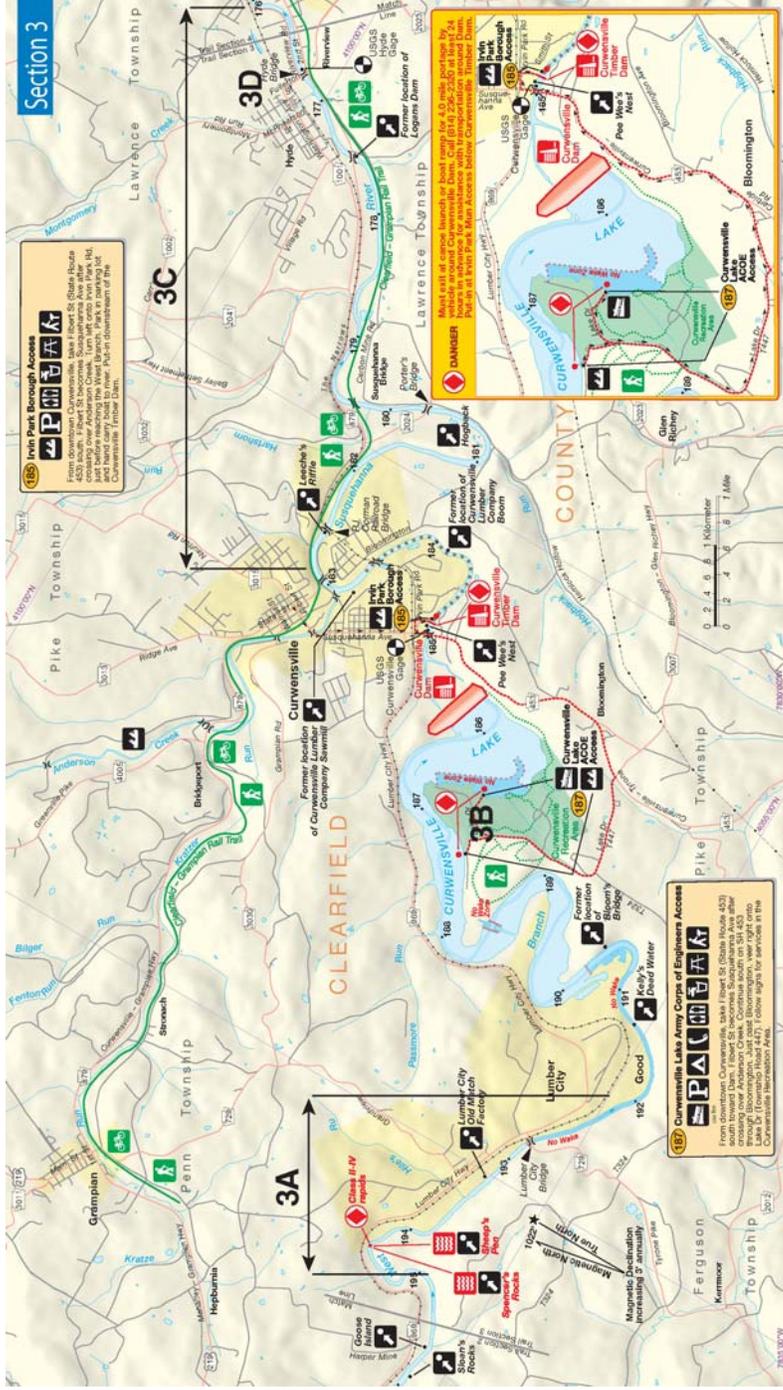
-  Secured Public River Access
-  Private River Access (verbal consent for use)
-  Private River Access (no verbal consent)
-  Private Campground (river access for patrons and as requested by others)
-  Strengthen Community Connection



- 2A Secure and develop public river access between River Mile 212 and River Mile 207. Landowner at River Mile 209 has given verbal consent for public use and has expressed the need for assistance with maintenance.
- 2B Develop a public access at River Mile 207 at Scout Park in Mahaffey Borough.
- 2C Secure a public access for portage around Chest Falls rapids, River Mile 204.3. Landowner at River Mile 204 has given verbal consent for public use of their property for river access at the campground; there is limited site capacity for heavy water trail use. Work with landowner to secure public access and improve water trail use areas.
- 2D Designate Bells Landing Municipal Access (hand launch) on maps; this was constructed June 2009.

Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 3

LEGEND



Secured Public
River Access



Private River Access
(verbal consent for use)



Private River Access
(no verbal consent)



Private Campground
(river access for patrons
and as requested by others)



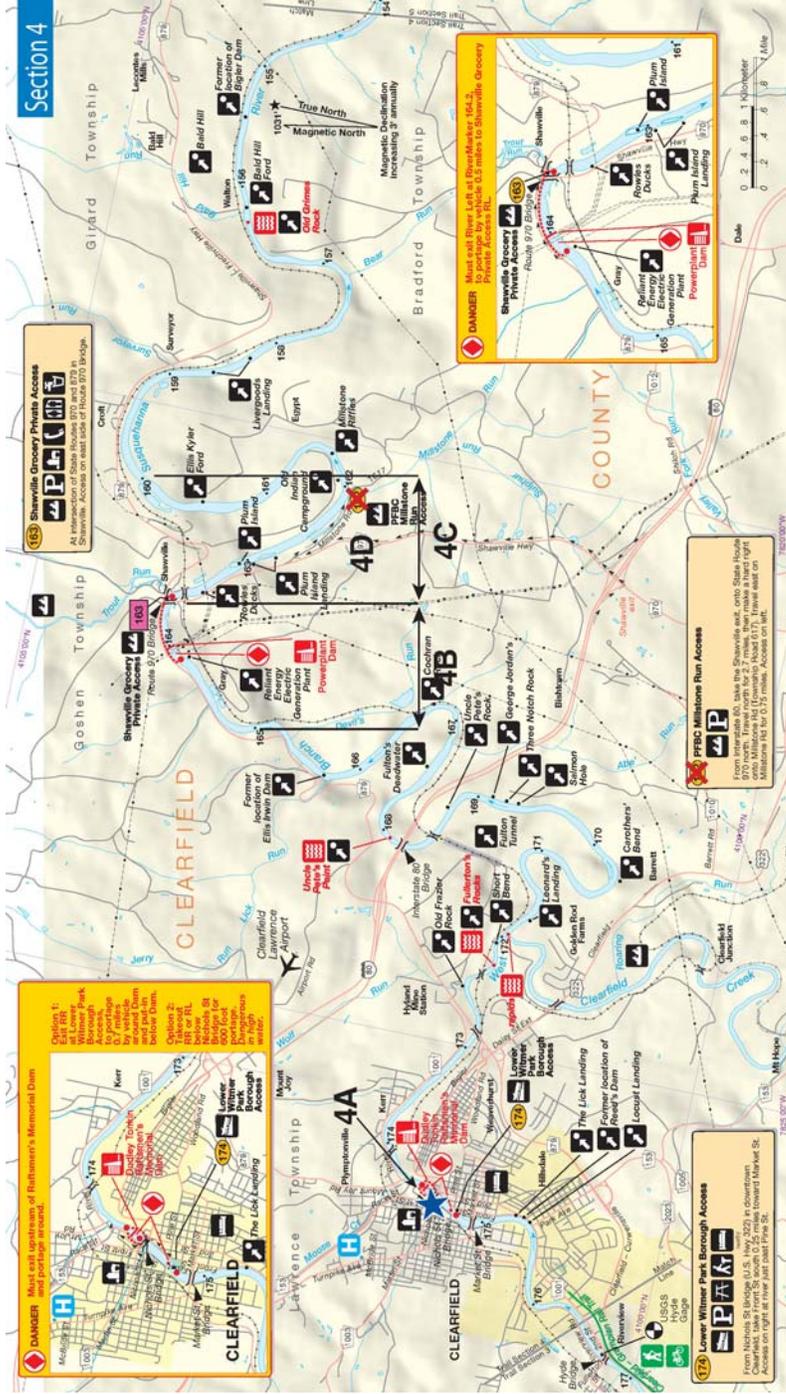
Strengthen Community
Connection



- 3A Seek additional public river access between River Mile 195 and River Mile 192. This would provide a rest area, and access for paddlers who prefer to not paddle the flatwater of Curwensville Lake.
- 3B Improve overnight accommodations at Curwensville Lake Recreation Area, River Mile 187.
- 3C Secure and develop public river access between River Mile 183 and River Mile 176. This would provide residents of local communities options for shorter trips, especially during slow flow periods.
- 3D Develop public access at River Mile 176.6 at the Lawrence Township site located just upstream of the Hyde Bridge. This would provide deep water access and options for shorter trips, especially during slow flow periods.

Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 4

LEGEND

Secured Public River Access



Private River Access (verbal consent for use)



Private River Access (no verbal consent)



Private Campground (river access for patrons and as requested by others)



Strengthen Community Connection

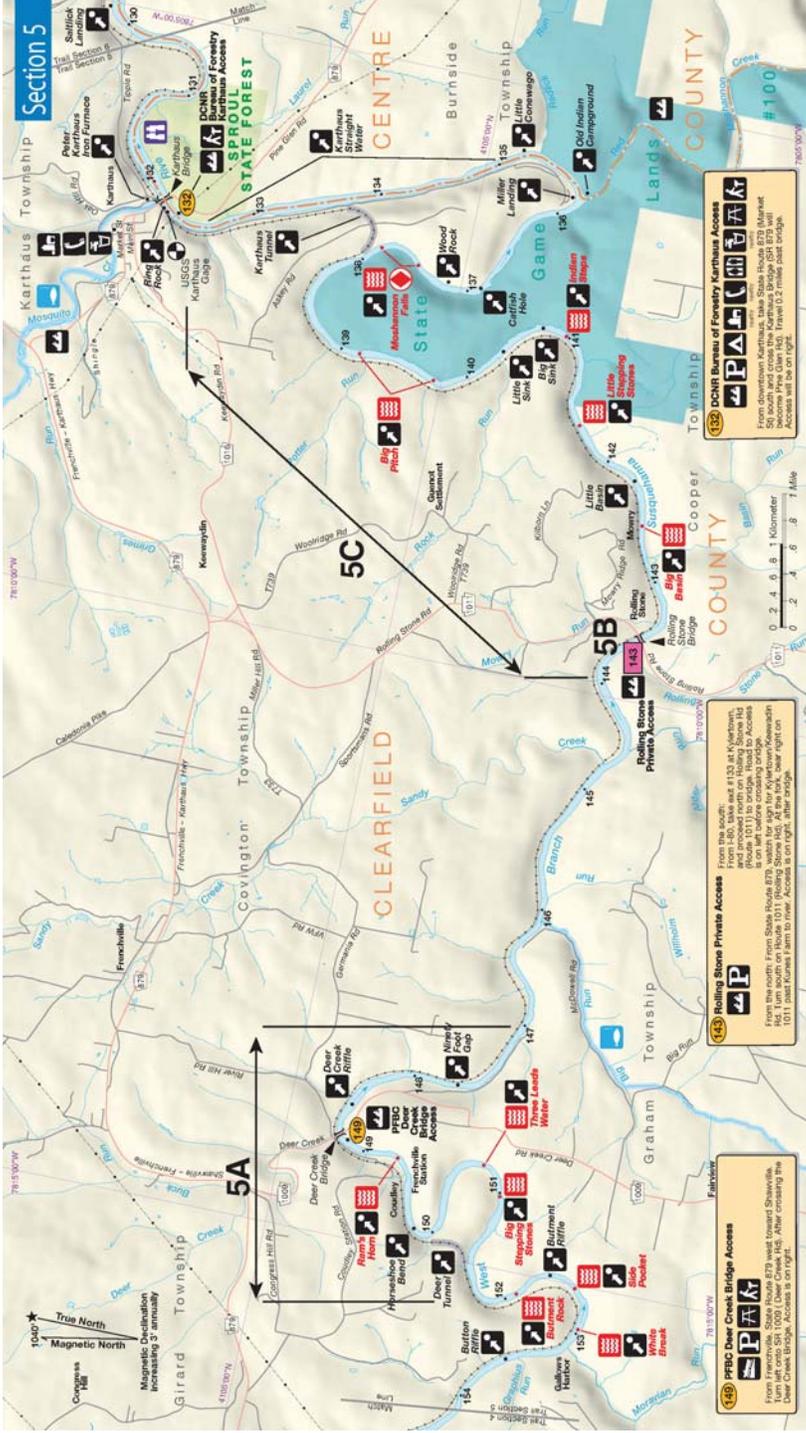


- 4A Secure and develop public river access for re-entering river after portaging around Dudley Tonkin Raftsmen’s Memorial Dam, River Mile 174.5.
- 4B Secure and develop public river access between River Mile 165 and River Mile 164, for exiting above the Reliant power plant dam.
- 4C Secure public access for re-entering river after portaging around the Reliant power plant dam, between River Mile 163 and River Mile 160. Landowner at River Mile 163 has given verbal consent for public use of that access, but the power plant has recently posted signs reading “Warning - water temperatures may be significantly elevated - proceed with caution.”
- 4D Remove Millstone Run Access from the maps, River Mile 162. This is a point of common use, but the Pennsylvania Fish and Boat Commission has no affiliation with this site.



Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 5

LEGEND

Secured Public
River Access



Private River Access
(verbal consent for use)



Private River Access
(no verbal consent)



Private Campground
(river access for patrons
and as requested by others)



Strengthen Community
Connection

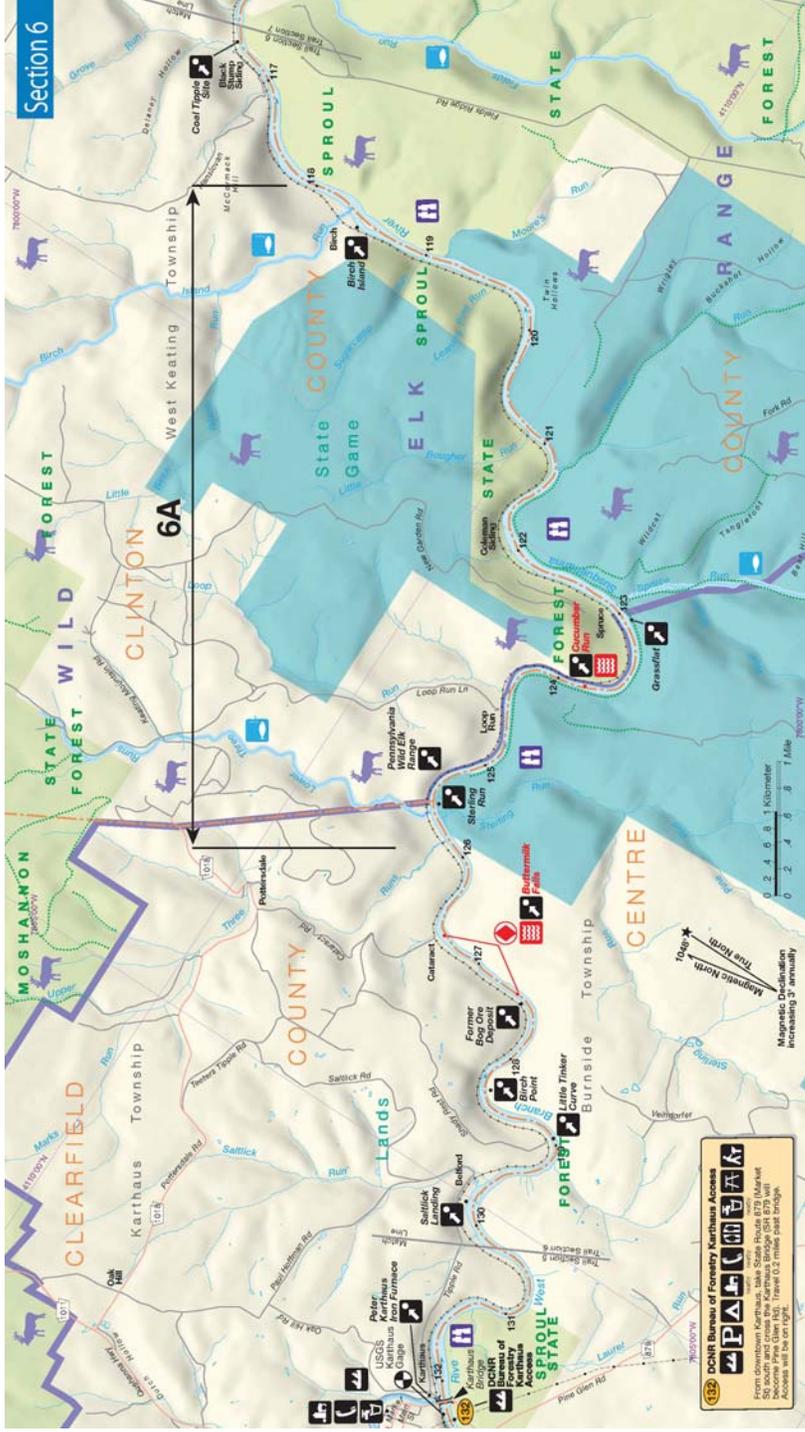


- 5A Secure and develop river camping between River Mile 152 and River Mile 147. This would provide overnight stay opportunity for through-paddlers.
- 5B Secure and develop public river access between River Mile 144 and River Mile 132. Landowner at River Mile 143 has given verbal consent for public use, but has expressed the desire for that to be revocable.
- 5C Secure and develop river camping, working with private landowners between River Mile 144 and River Mile 132. This would provide overnight stay opportunity for through-paddlers and potentially relieve camping pressure at River Mile 132.



Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 6

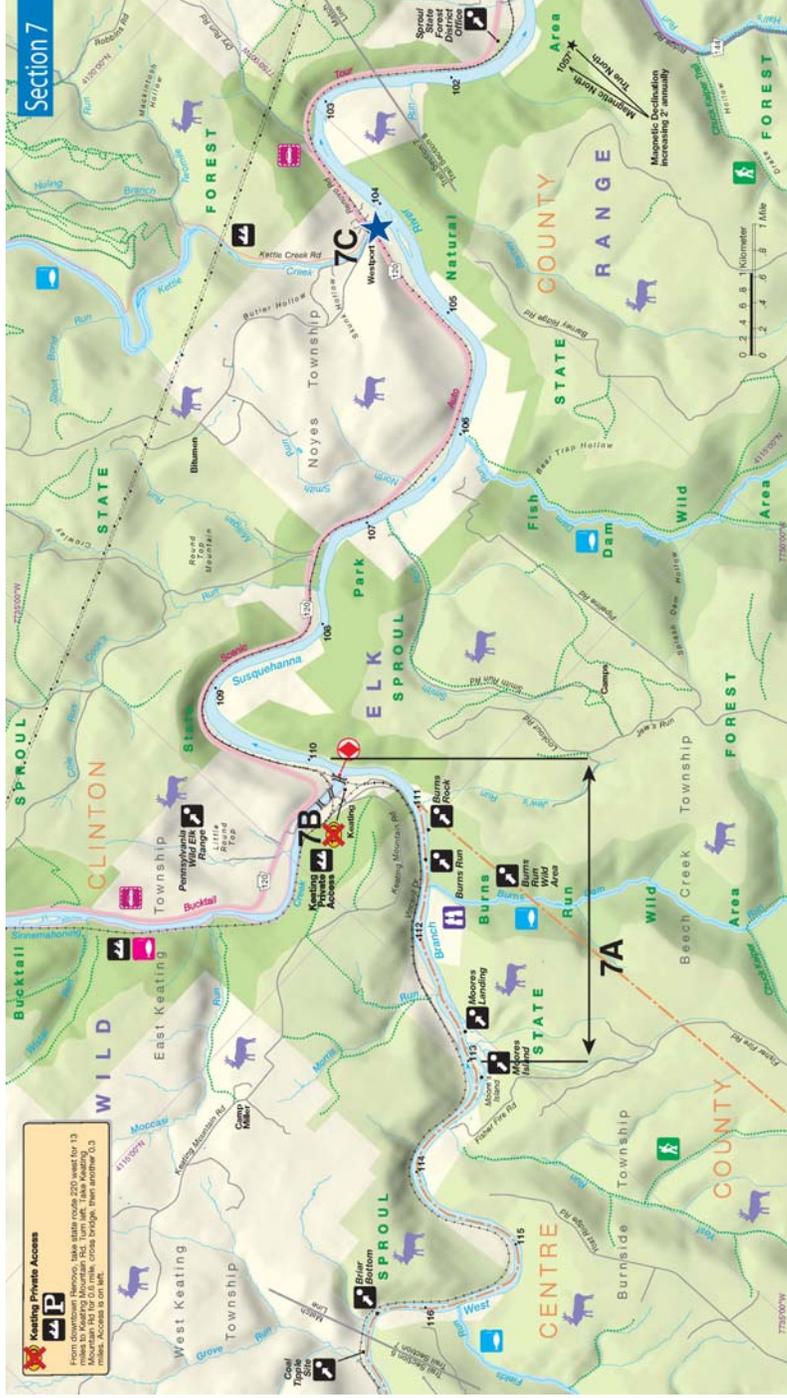
- 6A Secure and develop river camping between River Mile 126 and River Mile 118. This would provide overnight stay opportunity for through-paddlers and potentially relieve camping pressure at River Mile 132 and on Pennsylvania State Game Commission Land.

NOTE: this is a very popular 2-day trip through remote areas without roadway access. Designating areas for camping could help to discourage illegal camping activities and limit human impact to specific locations where it is appropriate.



Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 7

LEGEND

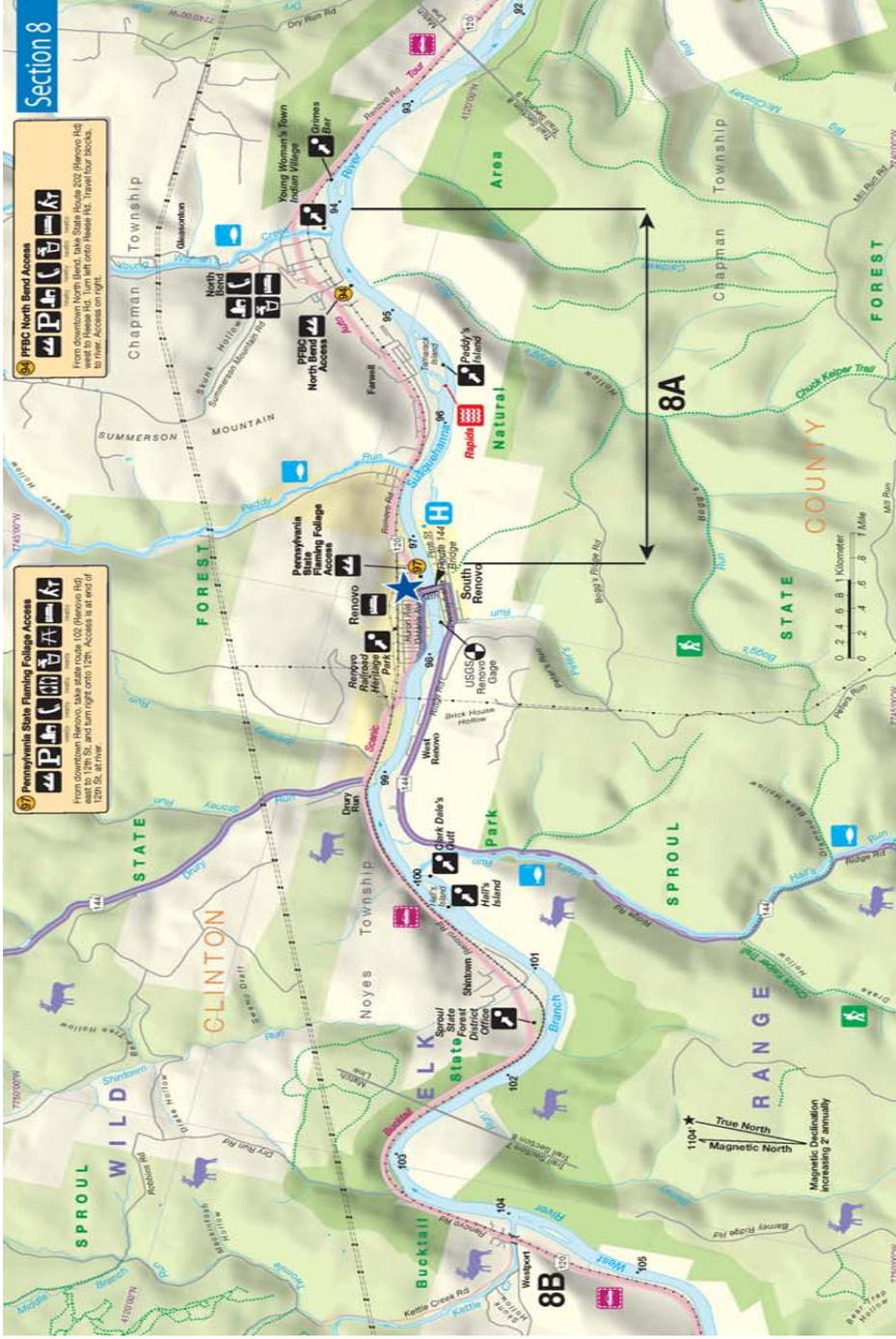
-  Secured Public River Access
-  Private River Access (verbal consent for use)
-  Private River Access (no verbal consent)
-  Private Campground (river access for patrons and as requested by others)
-  Strengthen Community Connection

- 7A Secure and develop river access between River Mile 113 and River Mile 110. NOTE: The section of water trail Between River Mile 132 and River Mile 110 is a very popular 2-day trip through remote areas without roadway access. Designating areas for camping near the end of this section would accommodate through paddlers, and could help to discourage illegal camping activities and limit human impact to specific locations where it is appropriate.
- 7B Remove Keating Access from the maps, River Mile 110. The landowner of record would not give consent for continued public use of their property.
- 7C Secure and develop river access near Westport, River Mile 104. This would provide a stopping point for food, and an overnight stay opportunity for through-paddlers.



Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 8

LEGEND

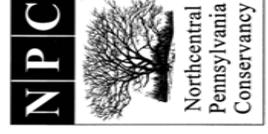
Secured Public River Access

Private River Access (verbal consent for use)

Private River Access (no verbal consent)

Private Campground (river access for patrons and as requested by others)

Strengthen Community Connection



8A Secure and develop river camping between River Mile 97 and River Mile 94. This would provide overnight stay opportunity for through-paddlers.

8B (7B) Secure and develop river access near Westport, River Mile 104. This would provide a stopping point for food, and an overnight stay opportunity for through-paddlers.

Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 9

LEGEND



Secured Public River Access



Private River Access (verbal consent for use)



Private River Access (no verbal consent)



Private Campground (river access for patrons and as requested by others)



Strengthen Community Connection



- 9A Secure and develop river camping between River Mile 89 and River Mile 81. This would provide overnight stay opportunity for through-paddlers.
- 9B Develop a public access at River Mile 83, DCNR-Bureau of Forestry Baker Run Site. Between Hyner and Lock Haven there is presently 20 miles of water trail without public access. Development of an access at this location would provide day-trip opportunities to both population centers.

Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 10

LEGEND

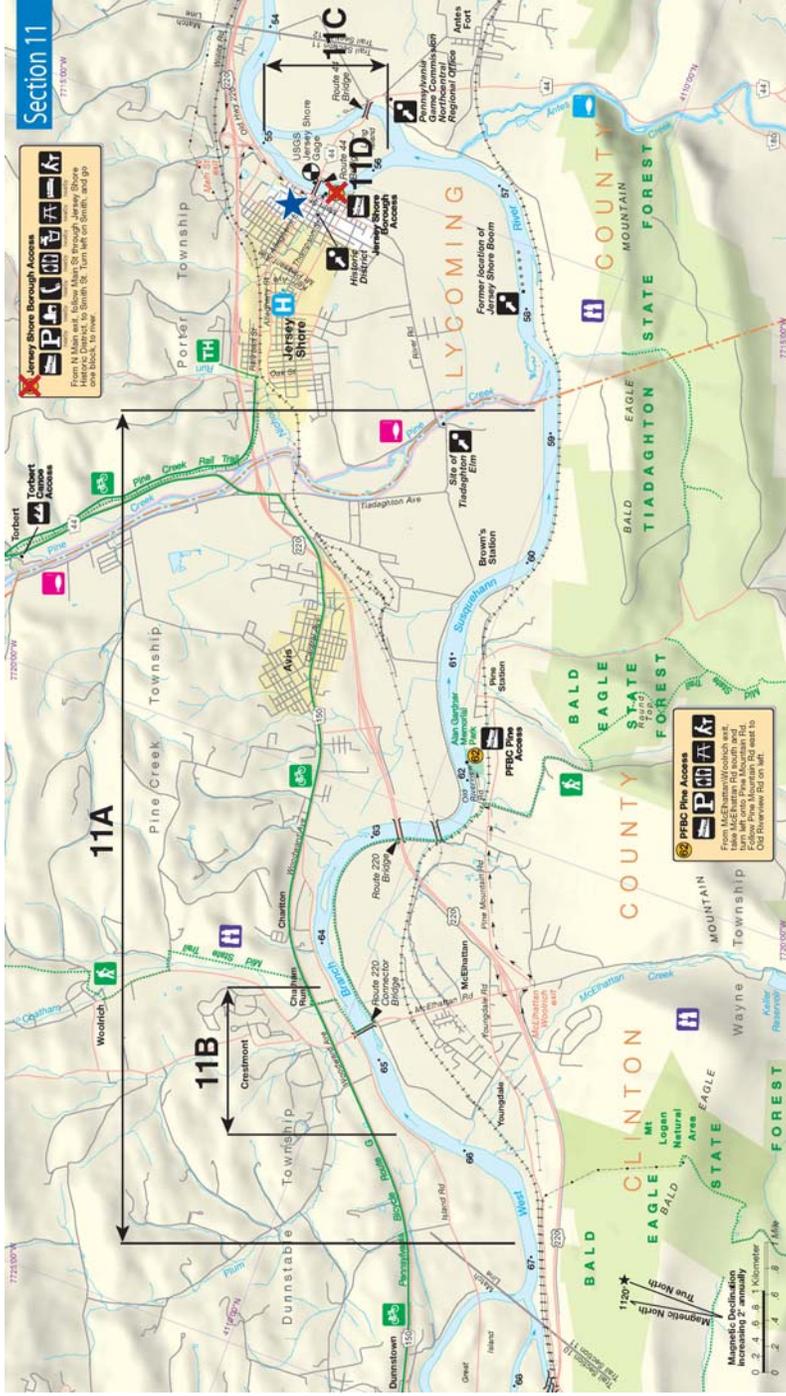
-  Secured Public River Access
-  Private River Access (verbal consent for use)
-  Private River Access (no verbal consent)
-  Private Campground (river access for patrons and as requested by others)
-  Strengthen Community Connection



- 10A Secure and develop public river access between River Mile 78 and River Mile 73. This would provide options for shorter day trips, and for paddlers wishing to avoid the motorized boat traffic above the Grant Street Dam.
- 10B Strengthen the connection between the water trail and the City of Lock Haven. This could provide a stopping point for food and overnight stay for through paddlers.
- 10C Secure and develop public river access between River Mile 69.5 and River Mile 68. This would provide resting area and options for shorter day trips below the Grant Street Dam in the Lock Haven area.

Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 11

LEGEND

-  Secured Public River Access
-  Private River Access (verbal consent for use)
-  Private River Access (no verbal consent)
-  Private Campground (river access for patrons and as requested by others)
-  Strengthen Community Connection

- 11A Secure and develop river camping between River Mile 67 and River Mile 58. This would provide overnight stay opportunity for through-paddlers where lodging is not available.
- 11B Secure and develop public river access between River Mile 66 and River Mile 64. This would provide additional access near local population centers, and provide options for shorter trips.
- 11C Secure and develop public river access between River Mile 56 and River Mile 55. This would provide overnight stay opportunity for through-paddlers, day-trip opportunities to local population centers, and future connection of the water trail to the Pine Creek Trail.
- 11D Remove the Jersey Shore Borough Access (future) from the maps. This commonly used access traverses six (6) parcels of land. Conversations are underway with the current landowners seeking cooperation to make this a permanent public access.



Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 12

LEGEND

-  Secured Public River Access
-  Private River Access (verbal consent for use)
-  Private River Access (no verbal consent)
-  Private Campground (river access for patrons and as requested by others)
-  Strengthen Community Connection

- 12A Landowner at River Mile 53 has given verbal consent for their campground to be shown on the map. Patrons staying at the campground can access the River at this point; this access is not intended to be used by day-users or individuals not staying at the campground.
- 12B Secure and develop public river access between River Mile 52 and River Mile 49. This would provide additional access near local population centers, and provide options for shorter trips.



Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 13

LEGEND



Secured Public River Access



Private River Access (verbal consent for use)



Private River Access (no verbal consent)



Private Campground (river access for patrons and as requested by others)



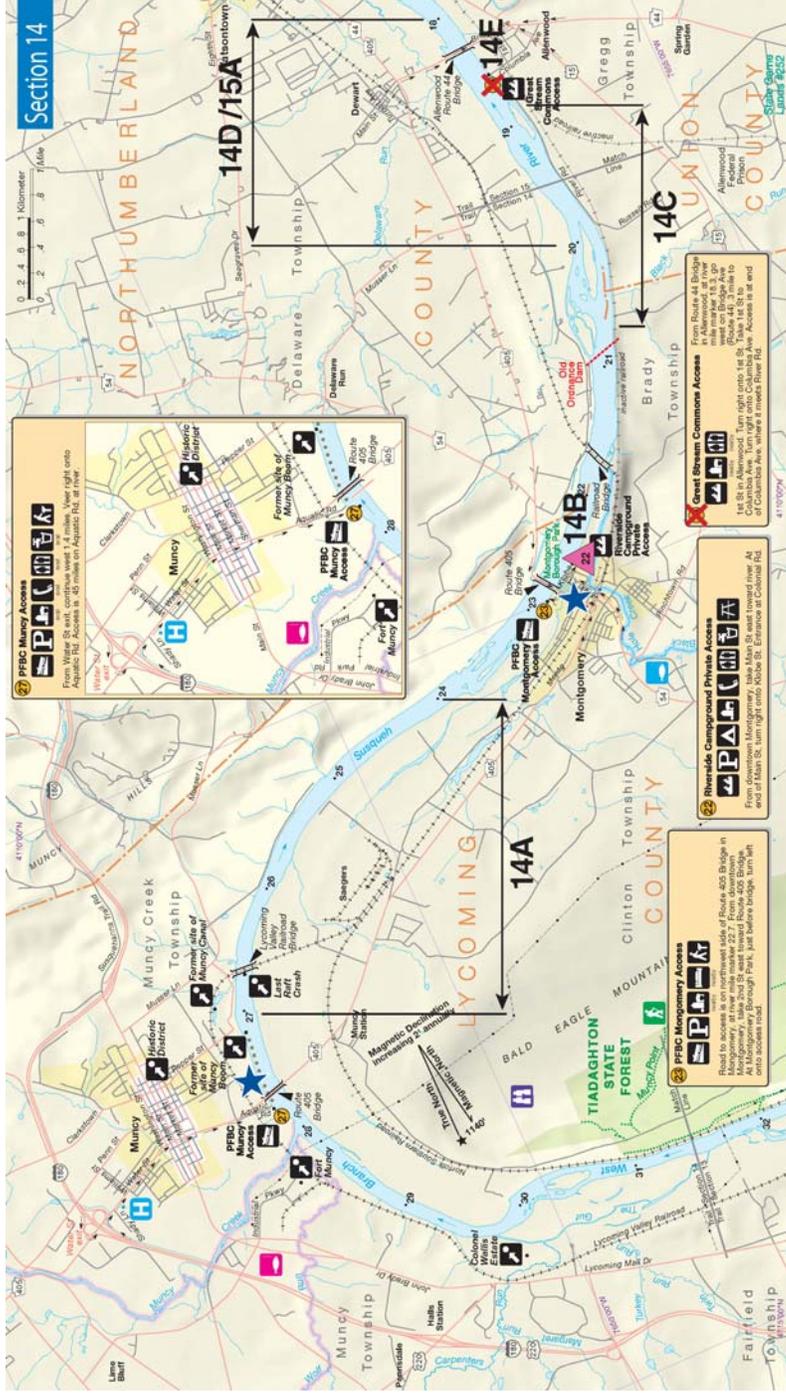
Strengthen Community Connection



- 13A Develop a portage around the Hepburn Street Dam to make it more accessible/easier to use, and to improve the level of safety. Extension of the portage to the top of the levee would provide paddlers a connection to the Susquehanna Riverwalk, with access to downtown Williamsport for food and overnight stay.

Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 14

LEGEND

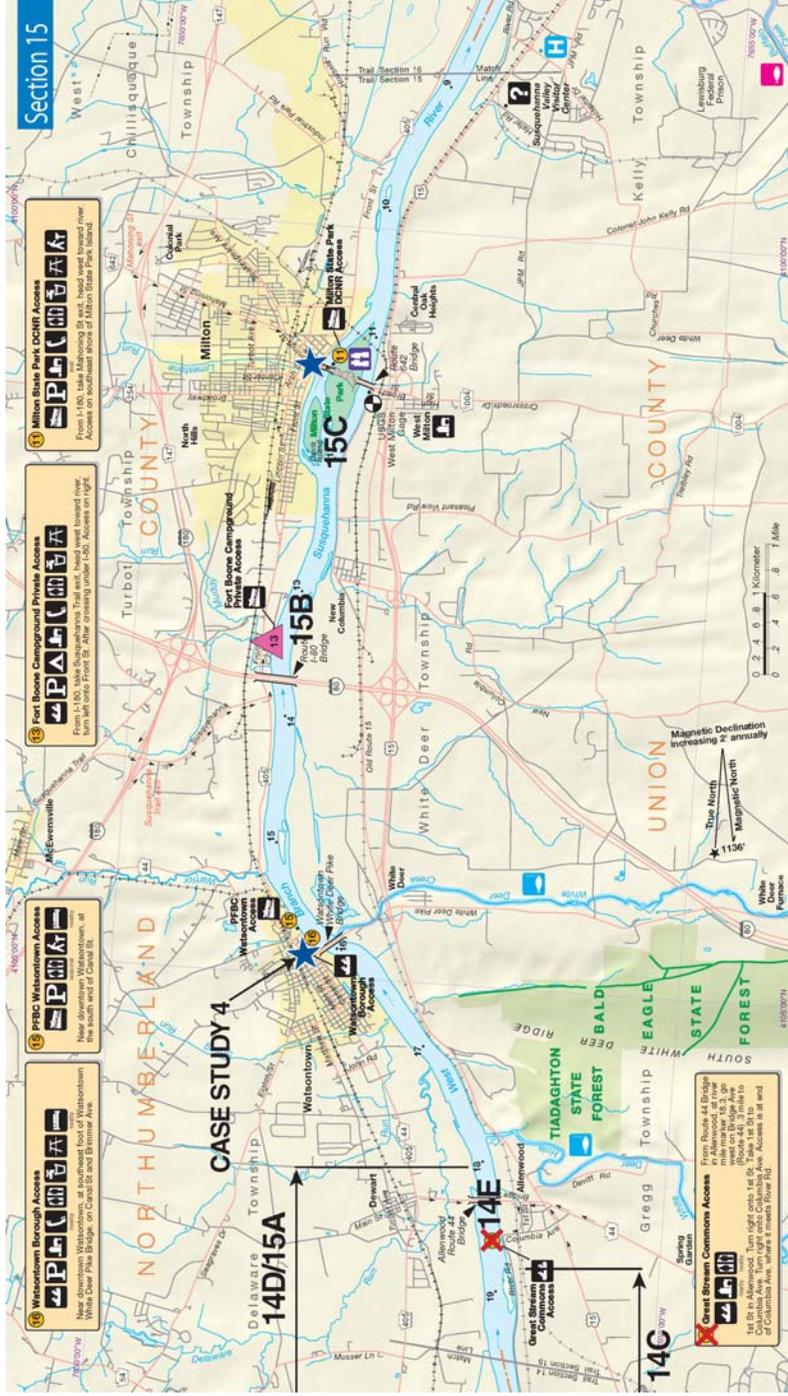
-  Secured Public River Access
-  Private River Access (verbal consent for use)
-  Private River Access (no verbal consent)
-  Private Campground (river access for patrons and as requested by others)
-  Strengthen Community Connection

- 14A,C Explore opportunities to secure and develop river camping. Interest has been expressed for having designated camping between River Mile 27 and River Mile 24, and between River Mile 21 and River Mile 19. Due to the close proximity of these areas to privately owned campgrounds, the need, suitability, and ability to monitor and maintain these sites should be examined with landowners and managers.
- 14B Landowner at River Mile 22 has given verbal consent for their campground to be shown on the map. Patrons staying at the campground can access the River at this point; this access is not intended to be used by day-users or individuals not staying at the campground.
- 14D Secure and develop public river access between River Mile 20 and River Mile 18. This would provide additional access near local population centers, and provide options for shorter trips.
- 14E Remove Great Stream Commons Access (future) from the maps. Conversations are underway with local partners and the landowner to develop a river access in this area, but there is presently no public access on this property.



Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



APPENDIX F Map Section 15

LEGEND



Secured Public River Access



Private River Access (verbal consent for use)



Private River Access (no verbal consent)



Private Campground (river access for patrons and as requested by others)



Strengthen Community Connection

14E Remove Great Stream Commons Access (future) from the maps. Conversations are underway with local partners and the landowner to develop a river access in this area, but there is presently no public access on this property.

15A/14D Secure and develop public river access between River Mile 20 and River Mile 18. This would provide additional access near local population centers, and provide options for shorter trips.

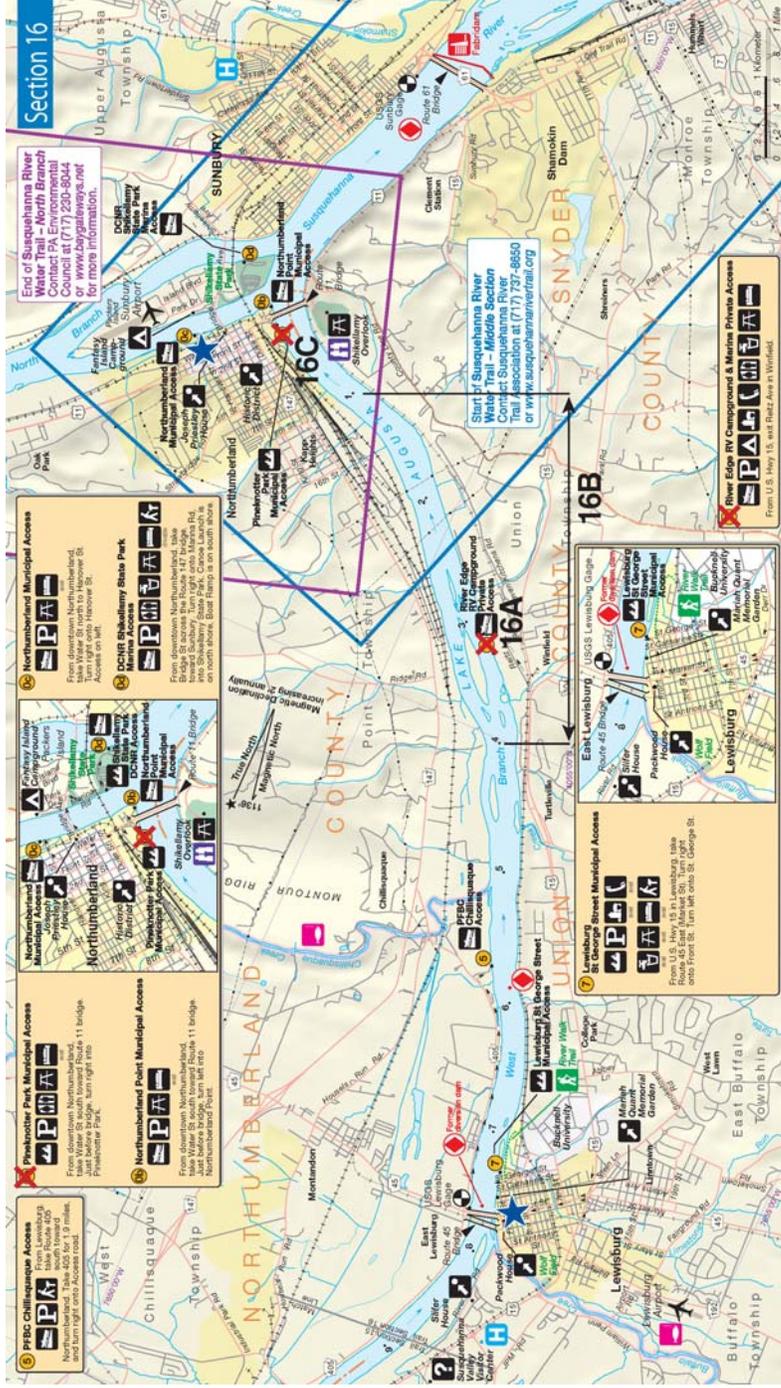
15B Landowner at River Mile 13 has given verbal consent for their campground to be shown on the map. Patrons staying at the campground can access the River at this point; this is not intended to be used by day-users or individuals not staying at the campground.

15C Secure and develop river camping near River Mile 12. This would provide overnight stay opportunity for through-paddlers.



Corridor Recommendations

Susquehanna River Water Trail – West Branch Stewardship and Conservation Plan



Map Section 16

LEGEND



Secured Public River Access



Private River Access (verbal consent for use)



Private River Access (no verbal consent)



Private Campground (river access for patrons and as requested by others)



Strengthen Community Connection



- 16A Remove River Edge RV Campground Private Access from the maps at owner's request.
- 16B Secure and develop public river access between River Mile 4 and River Mile 1. This would provide additional access near local population centers, and give opportunities for trail users to be less concentrated in this region.
- 16C Remove Pineknott Park Municipal Access from the maps; this is a river viewing area, not an access area.