

In the preceding chapter the focus was on identifying candidate restoration sites, developing proposed solutions, estimating costs for remediation, and ranking projects to advance for implementation in the field. This section is similar in that it examines additional implementation projects along with cost estimates for BCWA to undertake; however, the emphasis is more on administrative type tasks rather than physical construction and restoration. For example this may include educational programming, regulatory solutions and other innovative approaches to maintaining and improving the watershed. The following will explore a number of these opportunities and Table 5.1 includes more specific details about each potential project, including cost estimates, timeframes for completion, responsible entities, and partner organizations.

I. Agricultural Best Management Practices Technician

Given that the majority of stream impairment in the watershed has been attributed to agricultural land use it is clear a priority should be working with farmland owners. However agricultural non-point sources are so widespread within the watershed it is difficult to identify specific problems and then determine practical solutions that are feasible in terms of farm economics, while achieving desired water quality benefits. Therefore the BCWA feels it needs the assistance of a professional staff person that can identify the most significant sources of agricultural impairment and then work with those landowners to implement best management practices (BMPs). In early 2006 BCWA, in partnership with the Union County Conservation District, submitted an application under the Section 319 grant program seeking funding to hire a part-time agricultural information specialist for this purpose. Although not a specific restoration project, this is essential to restoring the agriculturally impaired streams in the watershed. The outcomes of this effort would be an addendum to this plan that identifies specific farms for restoration projects, selection of appropriate BMPs, quantification of pollutant removal for the selected BMPs, and implementation agreements with landowners for implementation of the BMPs.

II. Implementation of the Buffalo Creek Act 167 Plan and Ordinance

The Buffalo Creek Act 167 Stormwater Management Plan was adopted by Union County and the PA DEP in 1998. Act 167 requires local municipalities to adopt and enforce ordinances to implement the performance standards in the plan in order to control stormwater runoff from new development. At the onset of 2006, more than eight years later, three municipalities were not implementing the mandated ordinances and did not impose the necessary design standards on new development. As a result the PA DEP Stormwater Management Section sent a mailer to the non-compliant townships. Since that time two of the three have adopted the necessary ordinances; Buffalo Township remains the single municipality that has not implemented the ordinance. Even though Union County has reportedly worked with Buffalo Township and provided draft ordinances that would accomplish compliance with the Act 167 Plan, the township has not adopted them. Buffalo Township needs to adopt the required ordinance and the PA DEP should resolve this through the authority vested in it through Act 167.

III. Public Education Program

To date BCWA has implemented a number of educational projects to engage the public and to disseminate information to watershed residents. This has included the production of a 20-minute video/DVD about the watershed, printing of an information brochure, the development of a website, direct mailings to landowners, publication and distribution of a newsletter, school poster contests, canoe trips on the creek, press releases and feature articles in local newspapers, and hosting public meetings on a variety of watershed and water quality related topics. However there is always more to be done in terms

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of educational opportunities. Specific actions for the BCWA with regard to public education programming include:

- A. Implement the draft communication/media plan including meetings with municipal officials
- B. Develop media packets to distribute to print, radio and local television media and foster relationships with key reporters
- C. Contact Bucknell University Professor Tom Greaves regarding a survey of watershed residents and key groups such as developers and farmers
- D. Coordinate more closely with like minded groups
- E. Continue publication of newsletter and expand distribution through the acquisition of more email addresses
- F. Sponsor programs related to watershed friendly development with developers, building contractors, design professionals, and construction companies
- G. Periodically hold public meetings and informational sessions on key accomplishments and topics of concern such as agricultural best management practices, buffer planting, water use and conservation, stormwater impacts, nutrient pollution, fisheries, etc.
- H. Educate farmers and loggers about agriculture and forestry Best Management Practices
- I. Explore the launching of a certification program whereby residents and businesses could apply and, based on a set of criteria, become certified as “creek” or “watershed” friendly. See example in Appendix G from Stony Brook Millstone Watershed Association

IV. Updated Floodplain Regulations

Within the Buffalo Creek Watershed all the municipalities have adopted the minimum state and federal standards with regard to floodplain management ordinances. The minimum standards do not aim to protect floodplains for the important resources they are, but rather prescribe how to build on them in a manner that will reduce the risk of damage to structures and injury to occupants during a flooding event. As a result, contrary to what many people may think, floodplains in the watershed are not off limits to new development. In fact floodplain areas can be developed in most circumstances so long as the property owner places enough fill material to elevate the proposed structures 1 ½ feet above the base flood elevation. Over time filling the floodplain has a number of negative consequences. It changes stream hydraulics and hydrologic conditions in the watershed, eliminates important habitat including unmapped wetlands, contributes to worsened flooding conditions on adjacent properties and downstream (see Figure 2.4 on page 26), and reduces the water



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quality filtering capacity of these areas. The most effective and efficient means to protect the public from flooding is to recognize the ecological value of natural floodplains and to prohibit development of these sensitive lands. BCWA should educate local officials about the importance of floodplain resources and work with the municipalities to develop and adopt new requirements.

V. Expanded monitoring program

As volunteer resources expand BCWA should periodically evaluate the stream monitoring program and consider expanding it to include tributary streams that have been identified as priorities. Other opportunities should be considered as well, such as new ways of integrating Bucknell University and area high school faculty and students for water quality and stream flow data collection and analysis.



VI. Best Management Practices Demonstration Areas

Ideas are typically easier to convey when there are local examples. BCWA should work with Bucknell University to implement stormwater best management practices on their campus to serve as a classroom for citizens, developers, site designers, and others; similar to what Villanova University has done through its Urban Stormwater Partnership.

Likewise BCWA should work with the Conservation District and Penn State Cooperative Extension to showcase agricultural best management practices being utilized on area farms and organize educational programs and tours of the same.

VII. Land Use Planning and Regulatory Reforms

One of the most influential factors on watershed and stream quality is land use. Local governments, through zoning and other development controls, have considerable authority to protect or negatively impact watersheds through their land use decisions. BCWA should work with municipalities to update zoning and subdivision and land development ordinances to discourage or prohibit development in environmentally sensitive areas such as on steep slopes, wetlands, and floodplains. Additionally, BCWA should play an active role in the development of the new county and multi-municipal comprehensive plans that will begin in late 2006 or early 2007. These plans will create a blueprint for the next ten to 20 years that will direct local governments in terms of future land use, conservation, infrastructure, capital expenditures and many other aspects that can significantly affect the watershed. The watershed cuts through parts of three proposed multi-municipal planning areas that have been tentatively defined as follows:

Area 1: Hartleton Borough, Hartley Township, and Lewis Township

Area 2: Buffalo Township, Limestone Township, Mifflinburg Borough, New Berlin Borough, Union Township, and West Buffalo Township

Area 3: East Buffalo Township, Kelly Township, Lewisburg Borough and White Deer Township

VIII. Conservation Plan Implementation and Compliance Audits

BCWA should work with the Union County Conservation District and the PA DEP to ensure that agricultural land owners have the necessary conservation plans in place and are implementing the measures outlined in those plans. BCWA should encourage, or perhaps through the proposed agricultural information specialist, even assist the Conservation District with auditing a random selection of farms in the watershed for conservation plan compliance each year, especially in sub-watersheds with documented stream impairment attributed to agriculture. It is likely that many conservation plans were developed years ago and have not been updated accordingly, while others are simply not being implemented. Nevertheless, the implementation of existing and approved conservation plans would go a long way toward improving water quality problems within the watershed.

IX. Permanent Preservation of Riparian Corridors

With the exception of farmland preserved by the Union County Agricultural Land Preservation Program and a limited number of conservation easements held by the Linn Conservancy, the majority of land in the



county and the watershed is privately owned and not permanently protected. As a result hundreds of miles of riparian corridors that may already be lined with sufficient buffers are at risk to be eliminated over the long-term. BCWA should work with Linn Conservancy and other land trusts and conservation organizations to promote the benefits of permanent conservation easements on riparian corridors and other lands worthy of protection. Typically in the past, even where BCWA has restored buffers through free plantings for cooperative landowners, there have been no agreements executed or easements placed on those lands to guaranty that the buffer will remain in the future. Ducks Unlimited and the Natural Resource Conservation Service (NRCS) often require benefiting property owners to enter into a contract that can range from 10 to 15 years in length or even perpetuity so the completed work will remain for a predetermined period of time before it could be removed.

