SECTION 5 IMPLEMENTATION GUIDANCE

Section 5 contains general guidance on maintenance, restoration costs, and monitoring of restoration practices. These factors all contribute to successful implementation of a watershed plan. Effective watershed planning takes long-term maintenance and sustainability into account as well as an effective use of County, State, and Federal resources for implementation. Monitoring is necessary to document both short-term and long-term successes and to help provide a feedback loop so that future restoration efforts can be improved.

5.1 MAINTENANCE NEEDS AND RECOMMENDATIONS

Maintenance of restoration efforts is important to ensure both long-term function and aesthetics, and to reduce impacts from nonnative plant species. Maintenance will be particularly important in regard to recommended riparian plantings and stormwater retrofits including bioretention, wet ponds, and stormwater wetlands. Efforts should be undertaken in the design to reduce the need for maintenance or to make maintenance inherently easier to perform. Table 5.1 provides a summary of key construction and maintenance recommendations for restoration practices.

5.2 BASIS FOR COST ESTIMATES AND FUNDING GUIDANCE

The success of a watershed plan certainly hinges on the ability to accurately estimate and gather resources to pay for implementation efforts. In this watershed plan, both empirical cost equations and feedback from County staff were used to estimate costs associated with implementation of the watershed plan. Estimating costs is a challenging exercise at this stage of the watershed planning process. The intent of the estimates presented is to provide planning level costs that provide a realistic expectation of what it will take to see implementation through. More detailed cost estimates will be necessary as concepts are pursued further. Another factor for implementation success is the ability to secure resources from outside sources including grants and to creatively find ways to stretch scarce resources and share responsibility for costs with other groups, departments, and agencies.

Table 5.2 provides a short list of key sources for funding watershed restoration and protection efforts that may be tapped directly by the County or through partners. The list is not intended to be comprehensive but represents some of the frequently used funding sources by county and local governments. Implementation of the restoration initiatives proposed in this report will depend greatly on cooperation between specific property owners and the funding for all these projects is subject to approval of each year's capital budget by the County Council.

Table 5.1 Construction and Maintenance Guidance for the Centennial and Wilde Lake Subwatersheds

Practice Type	Construction	Maintenance Recommendations	Citation
Bioretention/ Filtering Systems	• Perform soil testing to identify permeable soils to reduce the need for excavation if soils are suitable for infiltration • Use a native vegetation, which requires less watering and upkeep • Provide pretreatment areas to reduce clogging potential • Protect site during construction to reduce chance of clogging from fine sediments	• Identify entity responsible for maintenance • Use a memorandum of understanding to establish maintenance responsibilities • Use turf grass rather than mulch in the bioretention cell in instances where maintenance may become a burden	(CWP, 2001) Tools for Building a Stormwater Maintenance Program
Stormwater Wet pond Retrofits	• Provide forebays for pretreatment and maintenance ease	• Identify entity responsible for maintenance • Use a memorandum of understanding to establish maintenance responsibilities	(CWP, 2001) Tools for Building a Stormwater Maintenance Program
Stormwater and Constructed Wetlands	• Provide forebays for pretreatment and maintenance ease • Ensure adequate groundwater level and drainage area needed to sustain wetlands • Provide long flow path for nutrient and pollutant uptake • Provide microtopography to increase plant species diversity	• Identify entity responsible for maintenance • Use a memorandum of understanding to establish maintenance responsibilities	(CWP, 2001) Tools for Building a Stormwater Maintenance Program
Riparian Planting	• Use of cage-type shelters or tree tubes • Ensure adequate tree spacing to allow maintenance using farmer's existing equipment or a contractor to mow annually • Prepare site well prior to planting • Use species native to the natural floodplain	• Perform biannual or yearly maintenance for 10 years (establish a 10-year maintenance contract) • Establish performance criteria and budget for replanting, if necessary	(Palone and Todd, 1998) Chesapeake Bay Riparian Handbook: A Guide for Establishing and Maintaining Riparian Forest Buffers

Table 5.2 Funding Guidance for the Centennial and Wilde Lake Subwatersheds			
Partnerships	**Funding Sources for Watershed Restoration/Protection**	**Funding Range**	**Information**
Government Entities	EPA Section 319 Grants	Up to $200k	http://www.epa.gov/owow/nps/cwact.html
	Department of Transportation ISTEA Grants	High	http://www.istea.org
	State Revolving Fund	Low interest loans to stretch scarce resources	http://www.mde.state.md.us/Programs/Water Programs/WQIP/index.asp
	NRCS cost share agreements for agricultural lands	High	http://www.md.nrcs.usda.gov
Nonprofits Watershed Associations, Schools	Chesapeake Bay Trust	$5k to $100k	www.chesapeakebaytrust.org
	National Fish and Wildlife Foundation	$20k to $100k	www.nfwf.org
	EPA Targeted Initiative Grants	$100k to $1M	http://www.epa.gov/owow/watershed/initiative

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