

- Indiana Department of Environmental Management
- United States Geological Survey
- Central Indiana Land Trust, Inc.
- The Nature Conservancy
- County Surveyor's Offices
- County Drainage Boards

12.4 Financial Assistance

Financial assistance will be needed to implement a number of the BMPs. Assistance can come in the form of actual monetary notes or in the form of in-kind or technical services. Several funding options are available for BMP implementation, most of which are in the form of grants. Agencies that provide grants for BMP implementation include, but are not limited to:

- IDEM – Section 319 watershed management program for watershed implementation projects, staff and education programs/projects
- IDNR – Division of Fish and Wildlife Lake and River Enhancement (LARE) Program for watershed implementation projects and future monitoring, Division of Nature Preserves Heritage Trust Program for easements and restoration projects
- EPA – Several topical grant programs (stormwater projects, research projects, environmental justice projects, Community Action for a Renewed Environment (CARE) program, etc.)
- USGS – Topical research grants for nutrient transport or other nonpoint source water quality studies
- USACE – Some limited restoration funding
- Hoosier Riverwatch (IDNR) – Grants for advanced monitoring equipment
- Clean Water Indiana – Small grants to SWCDs for water quality, conservation and education projects
- United Way – Planning and restoration funds for flood stricken areas
- National Fish and Wildlife Foundation – Five-Star Restoration Matching Grants Program for watershed restoration projects, water quality and habitat projects
- Local developers – Mitigation projects/dollars associated with planned wetland or stream impacts

In addition to these sources, Appendix B of the Indiana Watershed Planning Guide put together by the IDEM Office of Water Quality Watershed Management Section, lists other sources and websites of potential funding sources.

13.0 SUCCESS MEASURES

The overall success of a watershed management plan depends up on the implementation of action items as set up by goals. Below are measureable success indicators or milestones which will help the BWCWA track its progress and aid in updating and revising the Plan as accomplishments/goals are met. Some of the goals are long term and regular monitoring will be necessary to make certain that stakeholder actions and prescribed strategies are helping realize the actual water quality targets.

13.1 Goal 1: Reduce soil erosion and sediment inputs into streams that result in a 1% reduction in 5 years.**Indicators:**

- ✓ Number of buffer strips/riparian buffers
- ✓ Increase in no-till acres
- ✓ Number of workshops (contractors, fairs)
- ✓ Number of urban BMPs (rain barrels, rain gardens) installed
- ✓ Number of acres of BMPs installed on highly erodible soils
- ✓ Number of practices implemented to reduce velocity in steeply graded areas
- ✓ Number of forestry BMPs installed
- ✓ Number of log jams removed/banks stabilized
- ✓ Number of demonstration sites
- ✓ Increased training and certification of Rule 5 staff and contractors
- ✓ Development of detailed buffer maps
- ✓ Reduced TSS concentrations and loads in water quality samples
- ✓ Improved mIBI scores
- ✓ Track weather and link to water quality samples (use water treatment plants)

13.2 Goal 2: Reduce Total Phosphorus and Nitrate inputs by 20% in 5 years and Nitrate inputs by 40% in 10 years.**Indicators:**

- ✓ Number of sites identified for implementation
- ✓ Number of sites with BMPs implemented
- ✓ Number of linear feet of livestock fencing installed
- ✓ Number of acres/linear feet of riparian buffers
- ✓ Number of two-stage ditches installed
- ✓ Increase in no-till acres
- ✓ Number of nutrient management plans developed
- ✓ Number of field days and attendees
- ✓ Number of workshops/meetings and attendees
- ✓ Number of follow-up emails, appointments, etc. from field days/workshops
- ✓ Number of demonstration sites
- ✓ Number of stores carrying phosphorus free fertilizer
- ✓ Number of companies/applicators carrying phosphorus free fertilizer
- ✓ Number of lawn application of fertilizer or requests for phosphorus-free
- ✓ Reduced nutrient concentrations and loads in water quality samples
- ✓ Improved mIBI scores

13.3 Goal 3: Reduce *E. coli* inputs such that all sample sites meet the State water quality standard of 235 cfu/100mL during base flow conditions and no more than 15% of the sites exceed the standard during storm flow conditions in 5 years. The long-term goal (10 years) is for all storm flow events to meet State water quality standards.**Indicators:**

- ✓ Number of partners identified and new communication venues utilized

- ✓ Number of landowners identified amenable to fencing, alternative water supplies, and manure management strategies
- ✓ Fewer number of visual observations of cattle in the stream
- ✓ Number of animals removed from stream by fencing
- ✓ Number of alternative water supply systems created
- ✓ Number of lagoons safely closed
- ✓ Number of lagoons, manure systems added/implemented
- ✓ Number of homeowner receiving education on septic systems/wastewater disposal
- ✓ Number of homeowner receiving education on inflow and infiltration polices
- ✓ Local ordinances developed to require all properties sold with septic systems have septic tests done at time of sale – guidelines for ordinance developed
- ✓ Meetings with NPDES dischargers
- ✓ Increased NPDES compliance
- ✓ Reduced *E. coli* concentrations and loads in storm water quality samples
- ✓ Currently impaired segments removed from 303d list
- ✓ Follow-up monitoring/improvements in water quality at Dr. Gammon's sites

13.4 Goal 4: Protect and enhance important and unique natural aspects of Big Walnut Creek and its watershed (endangered and high quality species/natural areas).

Indicators:

- ✓ Number of key areas identified for protection or restoration
- ✓ Increase acres of natural areas through TNC, IDNR, and Wabash Land Trusts
- ✓ Increase acres planted in forest in bottom lands/floodplains
- ✓ Reduction in exotic/invasive infestations (aquatic and terrestrial)
- ✓ Number of learning opportunities about diverse habitat within basin
- ✓ Number of riparian buffer installed
- ✓ Number of easements on important ecological or corridor-building properties
- ✓ Increase smallmouth bass percentage in fish community
- ✓ Decrease algae blooms/reduced chlorophyll a concentrations
- ✓ Increase redhorse population, more gravel streambeds, less sedimentation observed in scientific surveys
- ✓ Increase acreage of Canadian/Eastern Hemlock
- ✓ Numbers of meeting with planning authorities
- ✓ Recommendations made to planning authorities
- ✓ Land use plans changed or amended to protect riparian areas
- ✓ Improved mIBI scores and QHEI scores

13.5 Goal 5: Develop public awareness on how individual activities and actions will/do impact the watershed.

Indicators:

- ✓ Number of students/year educated on how individual activities and actions will/do impact the watershed
- ✓ Number of individuals who attend tours or workshops
- ✓ Number of individuals in attendance at presentations or number of groups reached
- ✓ Number of articles published on watersheds/quality in local media

- ✓ Tangible educational materials produce and reproduced
- ✓ Increased coordination with DePauw University (coordinated research, engage sustainability program)
- ✓ Number of meetings with students at DePauw ('water group' newly formed)
- ✓ Increased coordination with TNC outreach programs and research
- ✓ Number of student/volunteer clean-up days for watershed maintenance
- ✓ Development of workshop/info package on septic system operations/maintenance
- ✓ Production of resource guide for where to find BMP information/soil information
- ✓ Number of people participating in committees
- ✓ Number of email inquiries
- ✓ Number of people receiving messages (pending deliver mechanisms identified in the survey)
- ✓ Development a display to take to fairs, festivals
- ✓ Number of contractors contacted or educated

14.0 MONITORING EFFECTIVENESS

14.1 Leadership Structure and Public Involvement

The Big Walnut Creek Watershed Alliance (BWCWA) is committed to generating and executing a successful watershed management plan that will protect, enhance, and conserve the Big Walnut Creek Watershed. In order to implement a successful management plan, continued cooperation, research, and financial support will be needed from key players in the watershed.

The steering committee of the Big Walnut Creek Watershed Alliance will continue to meet on a regular basis for the purpose of plan implementation. The steering committee will review project efforts according to the management plan's goals, objectives, and action items on an as needed basis.

The BWCWA has determined that the management plan will be a living document. As a living document it will occasionally need to be updated in order to address changing and future concerns of its group members. In order to understand changes within the watershed, the group will continue to host annual public meetings to gather public input and participation from watershed landowners.

14.2 Implementation Progress

Overall project progress will be tracked by measurable items such as workshops held, BMPs installed, and demonstration sites installed. Load reductions will also be calculated as each BMP is installed. These values and associated project details (e.g. BMP type, location, length of conservation commitment/easement, size, cost, etc.) will be tracked over time in a single spreadsheet. This spreadsheet will provide a single tracking mechanism for all projects installed and programs implemented in the watershed. Individual landowner information will be tracked by staff from various federal or state funding programs.

14.3 Water Quality Monitoring

Water quality monitoring will continue to be tracked with biannual sampling in order to determine annual load reductions. Pending funding opportunities, such monitoring may need to