

13 Tracking Effectiveness

The success of this watershed plan depends upon the implementation of the strategies outlined above. Periodic adjustments to the strategies will need to be made as restoration targets are met or unforeseen challenges dictate a different approaches. The following indicators that will be used to track overall effectiveness of plan implementation and stream function functional-lift over time.

13.1 Pollutant Load Modelling

Pollutant load reductions anticipated through BMP implementation will be estimated using STEPL, Region 5 or other appropriate models. Modeling will be conducted prior to any 319 funded project implementation to evaluate and maximize cost-benefit. Modeling will also be done for partner projects that do not use Section 319 funding to greatest extent possible (ex. projects funded through Farm Bill programs).

13.2 Water Quality & Biological Assessment

Water quality and biological monitoring will begin following five years of implementation at the critical area sampling points. Water quality monitoring will occur at least monthly over a one year period to capture seasonal variability. Biological monitoring will occur once during the sampling year. Monitoring will follow Hoosier Riverwatch methodologies. Parameters to be monitored include benthic macroinvertebrates, temperature, pH, DO, BOD, orthophosphate, nitrate, and turbidity. Flow data will either be collected in the field using Hoosier Riverwatch methodologies or estimated using the Deep River USGS gaging station. The estimated cost is \$1,000-\$2,000 for supplies. Monitoring will be completed by trained partners and/or NIRPC.

13.3 Hydrologic & Geomorphology Assessment

Hydrology, hydraulics, and geomorphology assessments will be conducted as part of stream restoration design to help evaluate pre- and post- restoration functional lift. Hydrology parameters such as precipitation/runoff relationship, flood frequency, and flow duration will be assessed. Hydraulic parameters such as floodplain connectivity and flow dynamics will be evaluated. Geomorphology parameters such as channel evolution, bank stability, riparian vegetation, and bed form diversity, and bed material characterization will also be evaluated.

13.4 Administrative Indicators

Administrative indicators provide information that water quality data cannot. These indicators are used to track program participation, strategy completion, and goal attainment. Administrative indicators will be used to track the following:

- Funds secured and leveraged
- Attendance at workshops and field day events.
- Conservation practice installation and anticipated load reduction.
- Acres of natural area conserved.
- Photo monitoring of installed practices.
- Media coverage.
- Number and types of educational materials distributed.
- Number of goals met.
- Delisting of streams included on the 303d List (impairment type, # of segments, miles of stream)

13.5 Implementation Tracking

Implementation strategies will be tracked on a quarterly basis. Work completed towards each strategy will be documented in a spreadsheet which will include scheduled and completed activities, numbers of individuals attending or efforts completed toward each objective, and load calculations or monitoring results for each goal, objective, and strategy. Overall project progress will be tracked by measureable items such as workshops held, BMPs installed, meetings held, etc. Load reductions will be calculated for each BMP installed. These values and associated project details including BMP type, location, length of conservation commitment, easement, size, cost, installer, and more will be tracked over time using spreadsheets and GIS where appropriate.