Upper Elkhart Watershed Management Plan

FINAL PUBLIC MEETING

Main Project Tasks

- Watershed Management Planning
- Water quality monitoring
- Engagement and outreach





What is a Watershed Management Plan?

- A plan to improve water quality within a specified area
- A community collaborative process
- A necessary step to implement water quality improvement projects or educational efforts
- A working document
- It is not...
 - A regulatory document
 - Created in a vacuum



Watershed Planning Process

- Assemble steering committee
- Gather public opinions and input
- Watershed assessment
- Water quality assessment
- Determine sources of water quality impairment
- Determine critical areas
- Identify solutions to address problems
- Develop goals, strategies and objectives to address water quality concerns
- IMPLEMENT!



Elkhart River Watershed



Upper Elkhart Watershed



Land Use & Watershed Features

- Lagrange, Noble, Kosciusko and Elkhart Counties
- Kendallville, Albion, Rome City, Wolcottville, Ligonier, Millersburg, New Paris, Goshen
- 67% row crop agriculture/pasture
 - 36% tile drained (estimate)
- 22% forest/wetland
- 8% developed
- 2% open water
 - 100 lakes across the watershed
 - 35 publicly accessible



- Residential Septic
 - 94% of soils in the watershed are severely limited for septic use
 - Contributes to E. coli and nutrient loading



- Crop Production
 - 75% of cropland is conventionally tilled
 - 44% of watershed soils are considered highly erodible



- Livestock Production
 - 410,200 animals produce approximately 963,300 tons of manure annually
 - 13 CAFO and 25 CFO housing up to 127,726 hogs, 260 beef cattle, 6,630 dairy cattle, 262,105 chickens, 100 sheep and 195 horses & nearly 800 unregulated farms housing more than 13,170 animals



- Channel Stability
 - 20.6 miles of streambank erosion
 - 63.8 miles with narrow buffers
 - 4 miles livestock access identified



Lake and Stream Impairments

- 184 miles E. coli
- 16.9 miles dissolved oxygen
- 10.2 miles nutrients (phosphorus)
- 10.2 miles chloride
- 9.7 miles PCBs (fish tissue)
- 5.3 miles biotic communities
- 0.5 miles mercury (fish tissue)
- 1,173 acres PCBs (fish tissue)
- 597 acres impaired biotic communities
- 24 acres mercury (fish tissue)
- 48 stream segments, 19 lakes



Historic Sample Sites



Historic Water Quality Data





Project Water Quality Data



In total, an 77% reduction in nitrogen, 64% reduction in phosphorus, 53% reduction in sediment, and 61% reduction in E. coli loading rates are required to meet water quality targets or state standards.

Critical Areas: Nutrients

Nutrients (listed as critical if 4+ criteria exceed target detailed below):

- Manure N >100,000 lb/yr and manure P >20,000 lb/yr
- Nutrient impairments (303(d) listing) any
- Historic nitrate >50%
- Historic TKN >50%
- Historic TP >50%
- Current Nitrate >50% (all)
- Current TP>50%
- Ag plan percentage >70%
- Urban land >10% of total



Critical Areas: Sediment

Sediment (listed as critical if 3+ criteria exceed target detailed below):

- HEL >50%
- Ag production >70%
- Streambank erosion >2%
- Narrow buffer >20%
- Historic TSS >30%
- Historic turbidity >50%
- Current TSS >25%
- Current turbidity >25%
- Urban land >10%



Critical Areas: Pathogens

E. coli (listed as critical if ₃+ criteria exceed target detailed below):

- E. coli impairment (303(d) listing) -any
- Manure volume>20,000 lb/year
- Historic E. coli >40%
 exceed
- Current E. coli exceedance >50%
- Lack of sanitary sewer
 (number of address
 points not sewered/acre
 of subwatershed)>0.05
 points/acre



Critical Areas



Critical & Priority Areas



Prioritized BMPs

Streambank Stabilization Wetland Creation, Wetland Enhancement, Wetland Restoration Bioretention – Rain Garden, Bioswale Conservation Tillage: Residue and Tillage Management, No till/Strip till/Direct Seed Cover Crop Pollinator planting Drainage Water Management Field Border or Filter Strip Two Stage Ditch Grassed Waterway Septic System Care and Maintenance Animal Mortality Facility Forage and Biomass Planting Livestock Restriction/Prescribed Grazing Manure Management Planning Waste Utilization Dam removal Consider soil characteristics to minimize runoff Nutrient and/or Pest Management Phosphorus Free Fertilizer Usage

Point Source Discharge Reduction Regular soil tests Tree/Shrub Establishment Water and Sediment Control Basin Alternate Watering System Drivable Grass Greenways and Trails Habitat Corridor Identification and Improvement Heavy Use Area Protection **Pervious Pavement Rain Barrel** Subsurface Drain (Agricultural) Subsurface Infiltration (urban) Threatened and Endangered Species Protection **Tree Box Filter** Access Control Bioreactor **Composting Facility** Curb Openings/Curbless Design **Diversion structures** Fencing

Upper Elkhart River – 30 Year Goals

- Reduce nitrate-nitrogen loading from 11,193,293 pounds per year to 2,533,679 pounds per year (77%) by 2053.
- Reduce total phosphorus loading from 394,024 pounds per year to 141,274 pounds per year (64%) by 2053.
- Reduce total suspended solids loading from 22,539,093 pounds per year to 10,637,099 pounds year (53%) by 2053.
- Reduce E. coli loading from 2.02E+15 to 7.86E+14 (61%) by 2053.
- By 2053, 100% of the public will be informed about practices that can be implemented to positively impact Upper Elkhart River and no less than 50% of individuals living and farming in the watershed will be engaged in the project within 30 years.
- Reduce flooding impacts by increasing storage and infiltration across the watershed within 30 years.
- Increase recreational access through increased river access points, ability to paddle from the North Branch-South Branch confluence to the watershed outlet to the Lower Elkhart River and improve habitat connectivity/natural land preservation across the watershed within 30 years.

High Priority/Short-term Goals (10 years)

- Reduce nitrate-nitrogen loading from 5,599,704 pounds per year to 1,352,996 pounds per year (76%) by 2033.
- Reduce total phosphorus loading from 157,335 pounds per year to 64,734 pounds per year (59%) by 2033.
- Reduce total suspended solids loading from 10,560,424 pounds per year to 4,587,577 pounds year (57%) by 2033.
- Reduce E. coli loading from 1.41E+15 to 4.09E+14 (57%) by 2033.
- Reduce flooding impacts by increasing storage and infiltration across the watershed within 10 years.
- Natural habitat (grasslands, forest, wetlands) will increase by a total of 5% with a focus on improving habitat connectivity across the waters.
- 30% of the public will be informed about practices that can be implemented to positively impact Upper Elkhart River and no less than 15% of individuals living and farming in the watershed will be engaged in the project within 10 years.



Three Year Project Goals

- **Goal 1**: Identify and implement projects in high-priority critical areas by developing, promoting, and implementing a targeted cost-share program which will result in measurable changes in water quality.
- **Goal 2**: Develop and promote a cost-share program.
- **Goal 3**: Cultivate interest in BMP implementation.
- **Goal 4**: Continue targeted and watershed-wide education and outreach efforts aimed at increasing awareness about water quality issues and the adoption rate of BMPs in high-priority critical areas.

Next Steps

- Finalize watershed management plan
 - Incorporate IDEM and USEPA comments
 - Final 3 December 2023
- Final Public Meeting:
 25 September at Sylvan Cellars
- Implementation application submitted more info Halloween (ish)
 - Utilize Ag Conservation Planning Framework (ACPF) data to kick start implementation
 - 100+ producers indicate BMP interest
 - Consider other cost share funds
- Continue steering committee meetings in the interim?
- Cohesive education and outreach programming – what does that look like?
- Future Updates see ElkhartRiver.org



Questions?

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