



## TIPPING POINT PLANNER

Supporting Sustainable Communities in Great Lakes States



Fairfield County, Ohio Storm Water Conservation District

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## TIPPING POINT PLANNER STORMWATER DEFINITIONS

# Agricultural Best Management Practices

Agricultural best management practices (BMPs) are intended to protect or improve water quality without significantly impacting production. The following BMPs are used in the Long-Term Hydrologic Impact Assessment (L-THIA) model and the Tipping Point Planner Program.

### BEST MANAGEMENT PRACTICES

**No-Till Practices** – A method of crop production that limits soil disturbance and leaves crop residue on the soil surface, which can reduce erosion, increase soil health, and conserve soil moisture.

**Buffer Strips** – 10m width (minimum) areas of herbaceous vegetation that reduce pollutants like sediment and attached and dissolved contaminants from surface runoff.

**Grassed Waterway** – A broad and shallow vegetated channel established to convey runoff to improve water quality without causing erosion. The vegetation in the waterway slows the water as it flows through the waterway and may uptake nutrients before reaching nearby surface waters. (pictured above).



**Figure 1.** [Top] Cereal rye planted as a cover crop (credit: Purdue University Extension) [Bottom] Nutrient application based on soil test results (Natural Resource Conservation Service) [Right] No-till and buffer strip practices adjacent to a waterway (credit: Wabash River Enhancement Corporation)

**Nutrient Management** – The strategic monitoring and management of nutrient sources and applications for plant production based on soil tests (Figure 1). Avoiding over-application of nutrients prevents their direct loss to local waterways (Figure 1).

**Grade Stabilization Structure** – A feature constructed within channels that can stabilize the slope, prevent washout or undercutting of banks, control erosion, and improve water quality (Figure 2).

**Blind Inlet** – A subsurface, boxed structure containing gravel and/or crushed limestone to serve as a filtration system to treat surface runoff before it moves into subsurface tile drain. systems (Figure 2).

## ABOUT THE TIPPING POINT PLANNER

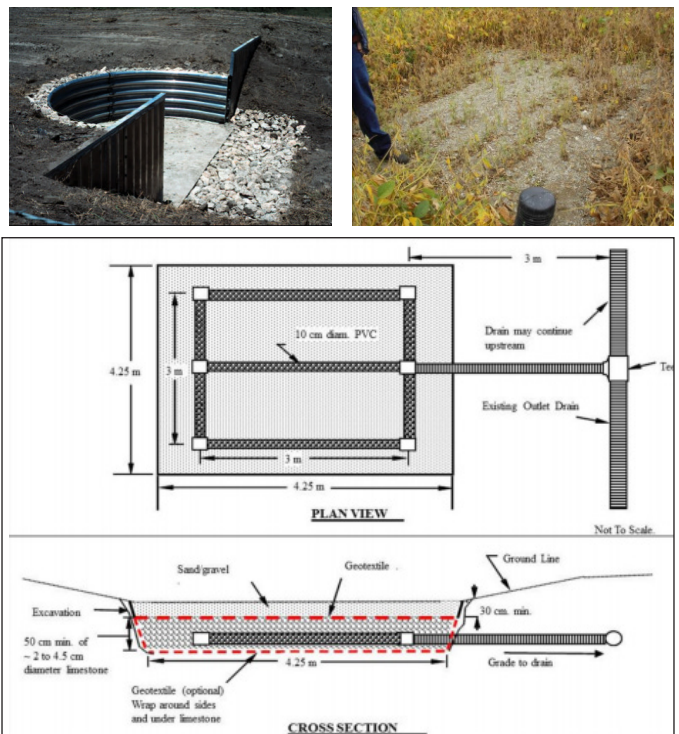
This document was created for use with the Tipping Point Planner program. Through Tipping Point Planner, communities in Great Lakes states can plan for a sustainable future by directly linking data to the local decision-making process. With help from trained facilitators, the Tipping Point Planner program enables professional and citizen participation in the land use planning and management process. To learn more, visit [www.tippingpointplanner.org](http://www.tippingpointplanner.org).

## ACKNOWLEDGEMENTS

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## REFERENCES

1. Gonzalez, J.M., Smith, D.R., and Livingston, S.J. Blind inlets as conservation practices to improve water quality. USDA-Agricultural Research Service, National Soil Erosion Research Laboratory, West Lafayette, Indiana, USA.
2. Liu, Y., Wang, T., Guo, T., Engel, B.A., Flanagan, D.C., & Lee, J. G. (in review). Evaluating efficiencies and cost-effectiveness of best management practices in improving agricultural water quality using integrated SWAT and Cost Evaluation Tool.
3. United States Department of Agriculture – Natural Resources Conservation Service, practice code 410: Grade stabilization structures.



**Figure 2.** [Top Left] Grade stabilization structure to slow runoff from the outlet of an agricultural field (credit: Natural Resource Conservation Service) Blind inlet view from the agricultural field (credit: Purdue University and USDA Agricultural Research Service, National Soil Erosion Laboratory) [Bottom] Blind inlet design schematic (credit: Purdue University and USDA Agricultural Research Service, National Soil Erosion Laboratory)