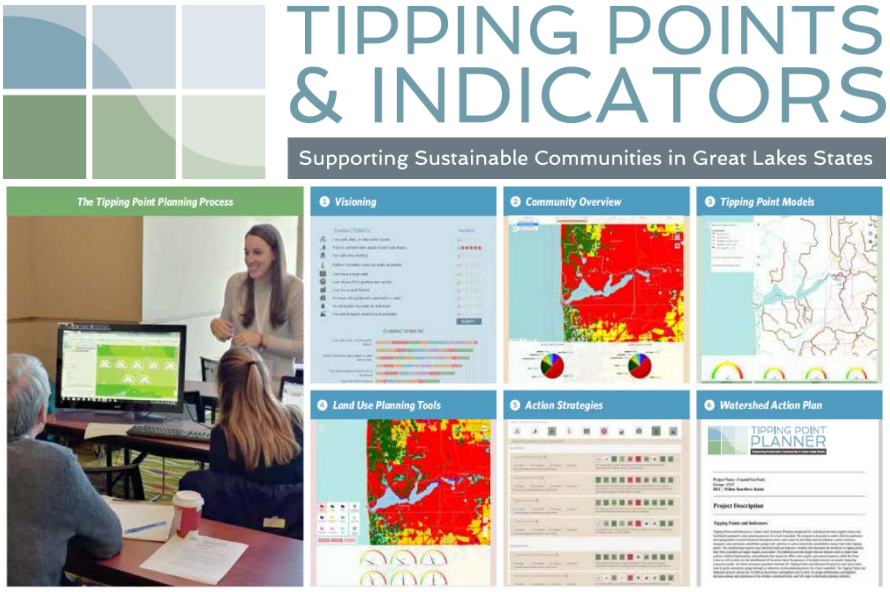
NOAA GLRI Webinar - Project Fact Sheet

Project Title	Using Tipping Points Planner to support LAMP and community planning decisions
Project Lead	PI: Ed Rutherford Co-PIs: David Hyndman, MSU; Bryan Pijanowski (Purdue Univ.)
Funding amount ($) and years funded	FY10 ($467,384); FY11 ($378,501), FY12 ($323,000); FY16 ($203,784); FY19 ($432,000); FY20 ($179,116)
External partners, collaborators and/or sub-awardees	Current Collaborators and Sub-Awardees: David Hyndman, Anthony Kendall, Sherry Martin, Quercus Hamlin, MSU Kara Salazar; Bryan Pijanowski, Dan Walker, Lydia Utley, Tomas Hook, Brian Miller: Purdue Unversity and Illinois Indiana Sea Grant
GLRI Focus Area	FA3: Nonpoint Source Pollution Impacts on Nearshore Health
GLRI Action Plan Primary Measure	Objectives 3.1 -- Reduce nutrient loads from agricultural watersheds.
	Measure(s) of Progress: Projected phosphorus reductions from GLRI-funded projects in targeted watersheds (measured in pounds). Projected volume of untreated urban runoff captured or treated by GLRI-funded project.
Brief project description	Our overall goal is to improve sustainable land management decision making at the sub-watershed level by targeting nutrient loading and land use practices that impact Great Lakes endpoints. Use of Tipping Point Planner (TPP) and our facilitated process will allow decision makers to identify coastal areas with water quality, habitat degradation and food web disruption issues, and develop land use strategies that can address these problems. Objectives: a) ***Engage directly and virtually with target communities and LaMP teams in an effort to reduce nutrient loads to the Great Lakes.*** These pilot communities will be selected based on their readiness to develop action strategies to modify land use patterns and implement BMPs to protect the lakes. Measurable outputs of the TPP will be presented as Action

Plans to local communities, and pounds of phosphorus calculated as a result of plans adopted.

b) ***Continue development and application of our land use forecasts that will be linked through TPP to hydrologic-nutrient, economic BMP and food web models.*** Purdue's land use transformation model will be recalibrated using improved artificial neural network approaches and the NLCD 2016 as the base layer for forecasts. We will use the Purdue SWAT/LTHIA-BMP cost algorithm that selects the most economically effective low impact development BMP for placement in a watershed optimized for nutrient load reductions.

c) ***Extend and apply nutrient load models to the entire US Great Lakes Basin.*** We will validate the nutrient load model for key high nutrient load watersheds such as the Saginaw and Maumee Rivers. A key product will be maps of nutrient delivery "hotspots" where the greatest proportion of nutrient loads originate on the landscape, and where reductions in landscape applications are most effective at reducing in-stream nutrient concentrations.