

# CREP Prioritization: Mapping Sediment Loading Risk in the Saginaw Bay Basin

## Background

Michigan State University Extension (MSUE) is collaborating with the State of Michigan and local stakeholders to re-establish the Conservation Reserve Enhancement Program (CREP) in Michigan. To aid in prioritizing lands eligible for CREP enrollment, the Institute of Water Research (IWR) at MSU developed township-scale maps of sediment loading risk for the Saginaw Bay basin. This book organizes those maps at the township scale.

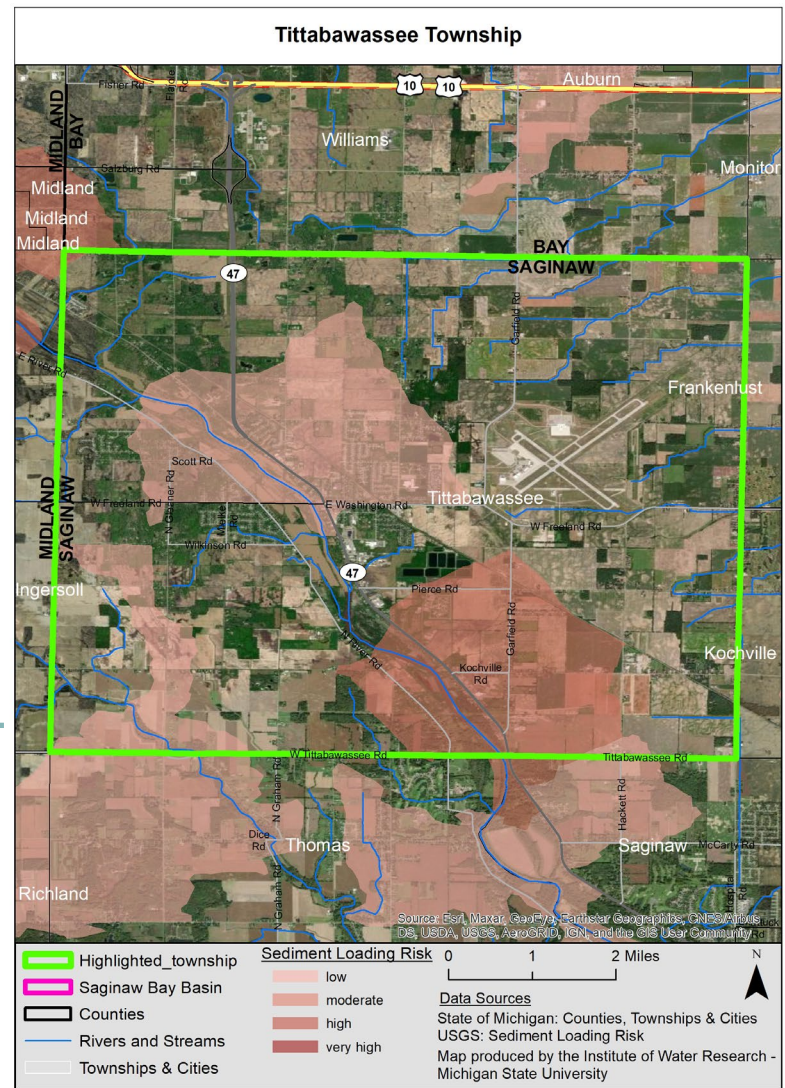
## Data

The maps are based upon data from the United States Geological Survey's (USGS) SPATIally Referenced Regression On Watershed attributes (SPARROW) model\*. The model uses observations, land use characteristics, and statistical relationships, among other variables, to estimate pollutant loads to streams and rivers. The data in this map book represents incremental sediment load contribution for each small catchment in the basin (see image at right), i.e. the amount of sediment load that originated in a particular area (not the total, accumulated amount moving through the stream in that area).

## Contacts

Please direct questions about MSUE's project to:  
**Sarah Fronczak**  
 Environmental Management Educator  
 Michigan State University Extension  
[froncz3@msu.edu](mailto:froncz3@msu.edu)

Please use the URL below to learn more about the SPARROW model, and direct questions about the maps to:  
**Glenn O'Neil**  
 Environmental Scientist  
 Institute of Water Research - Michigan State University  
[oneilg@msu.edu](mailto:oneilg@msu.edu)



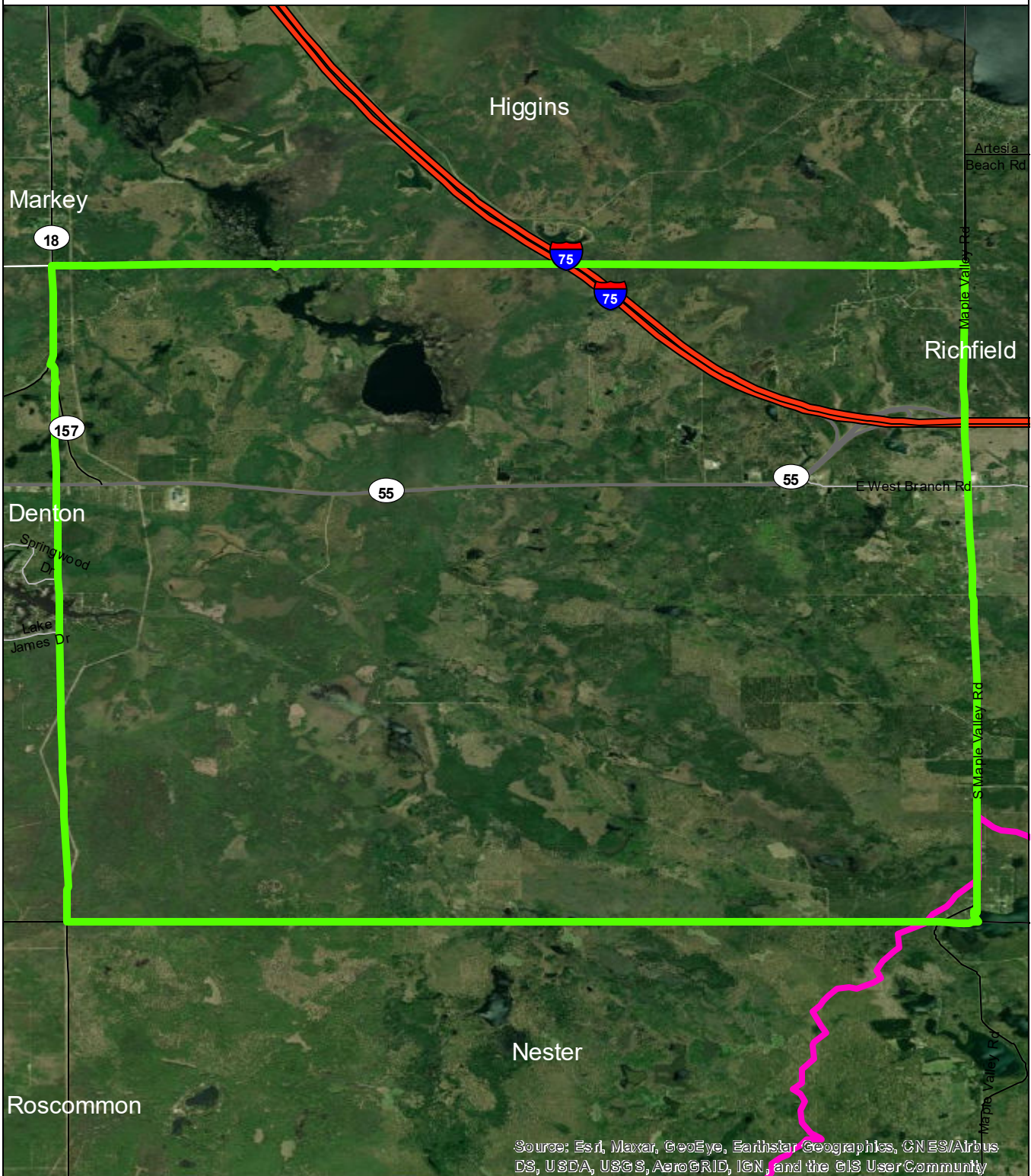
\* <https://www.sciencebase.gov/catalog/item/5cbf5150e4b09b8c0b700df3>

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# Backus Township

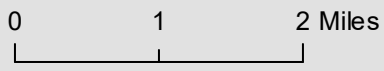


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Backus Township
- Saginaw Bay Basin
- Counties
- Rivers and Streams
- Townships & Cities

### Sediment Loading Risk

- low
- moderate
- high
- very high



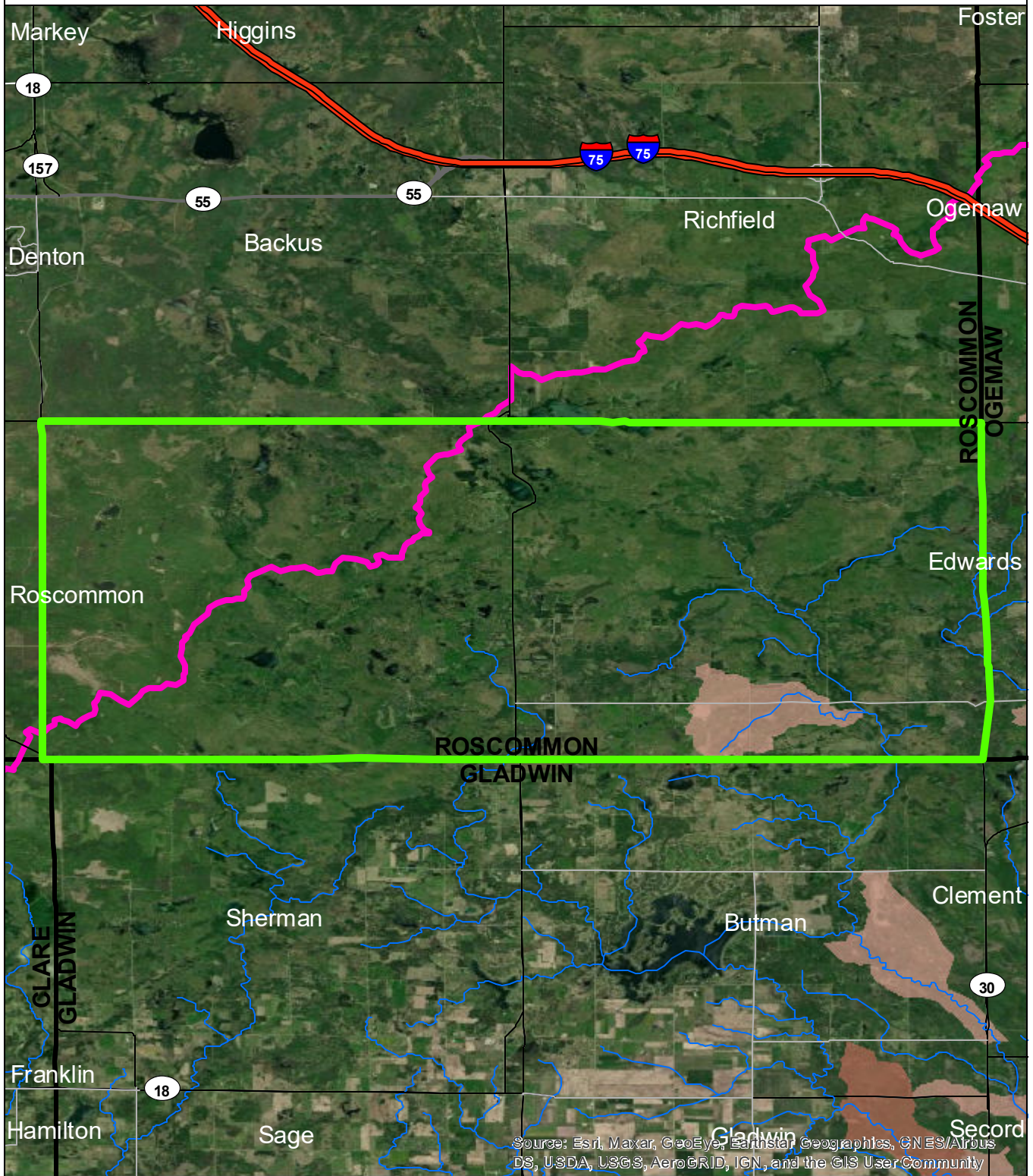
### Data Sources

State of Michigan: Counties, Townships & Cities  
 USGS: Sediment Loading Risk

Map produced by the Institute of Water Research - Michigan State University



# Nester Township



Source: Esri, Maxar, GeoEye, Earthstar, GeoGraphics, CN ES/Airbus DS, U.S.DA, USGS, AeroGRID, IGN, and the GIS User Community

- Nester Township
- Saginaw Bay Basin
- Counties
- Rivers and Streams
- Townships & Cities

**Sediment Loading Risk**

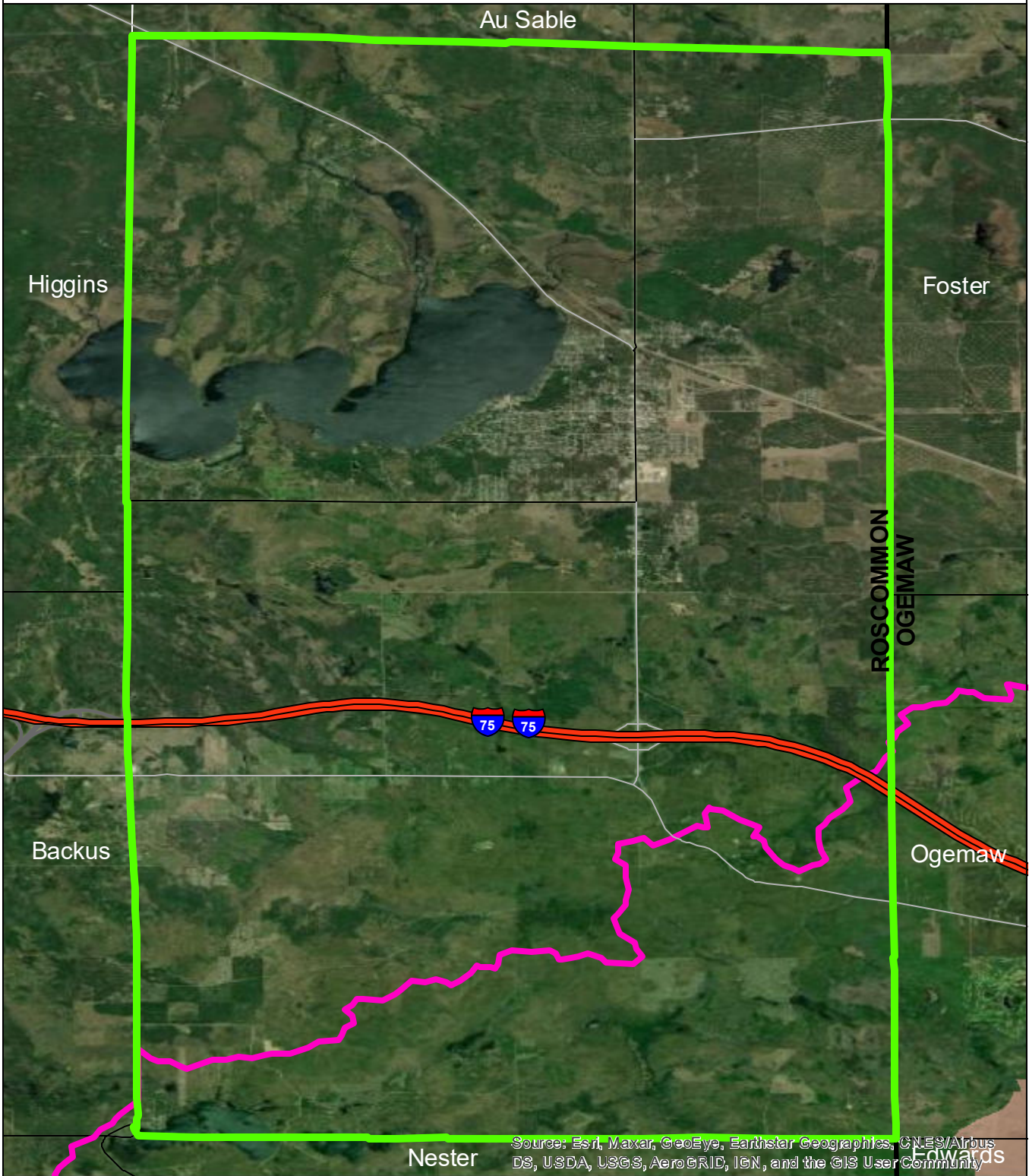
<span style="display: inline-block; width: 15px; height: 10px; background-color: #f0e68c; border: 1px solid black;"></span>	low
<span style="display: inline-block; width: 15px; height: 10px; background-color: #e69a00; border: 1px solid black;"></span>	moderate
<span style="display: inline-block; width: 15px; height: 10px; background-color: #c45a3b; border: 1px solid black;"></span>	high
<span style="display: inline-block; width: 15px; height: 10px; background-color: #8b2323; border: 1px solid black;"></span>	very high

0 1 2 Miles

**Data Sources**  
 State of Michigan: Counties, Townships & Cities  
 USGS: Sediment Loading Risk  
 Map produced by the Institute of Water Research - Michigan State University

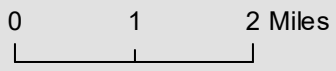
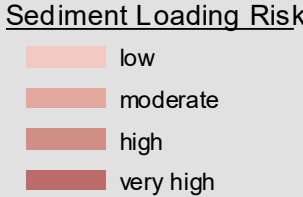


# Richfield Township



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Richfield Township
- Saginaw Bay Basin
- Counties
- Rivers and Streams
- Townships & Cities

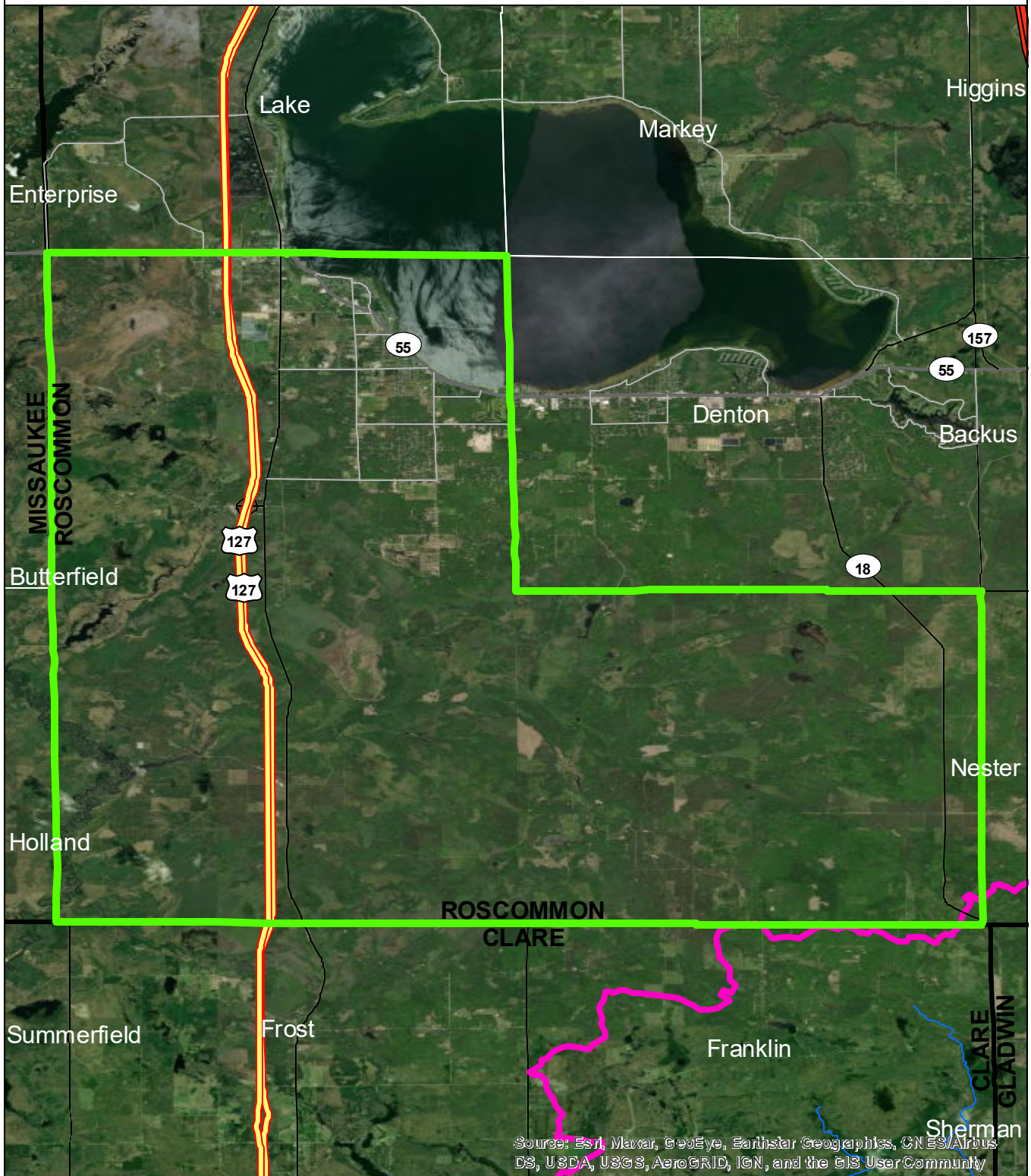


**Data Sources**

State of Michigan: Counties, Townships & Cities  
 USGS: Sediment Loading Risk  
 Map produced by the Institute of Water Research - Michigan State University



# Roscommon Township

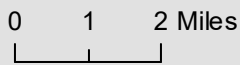


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Roscommon Township
- Saginaw Bay Basin
- Counties
- Rivers and Streams
- Townships & Cities

### Sediment Loading Risk

- low
- moderate
- high
- very high



### Data Sources

State of Michigan: Counties, Townships & Cities  
 USGS: Sediment Loading Risk

Map produced by the Institute of Water Research - Michigan State University

