

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:

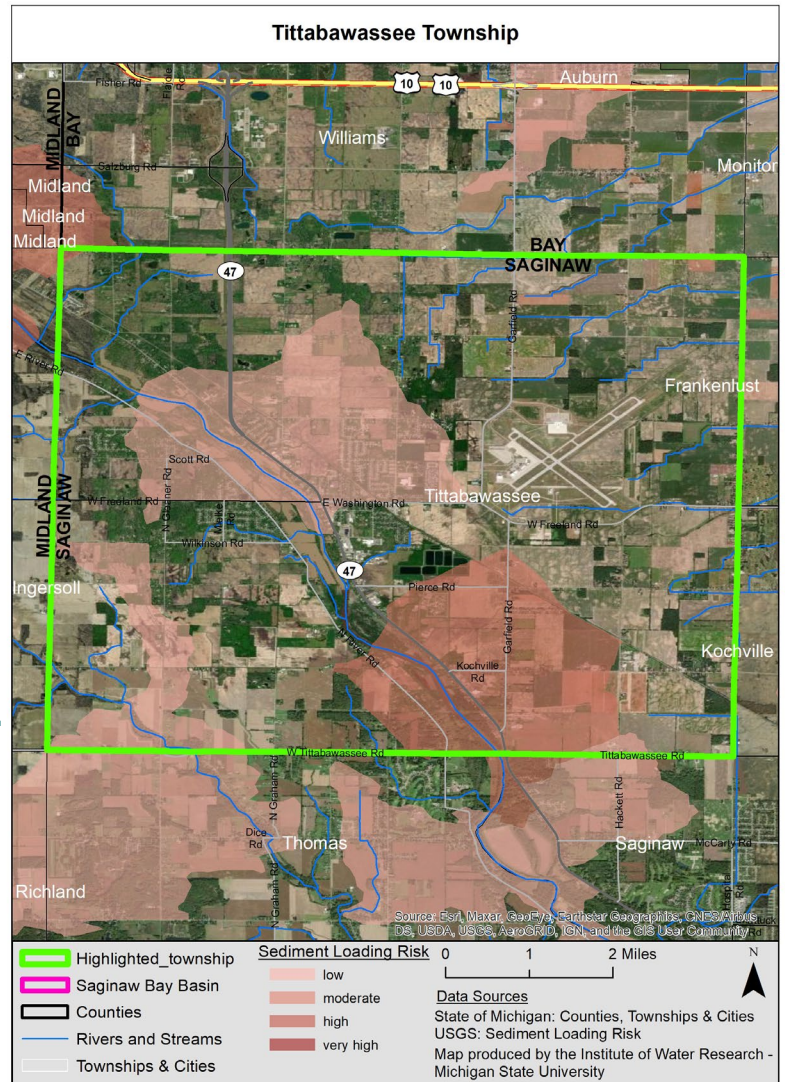
Sarah Fronczak

Environmental Management Educator
Michigan State University Extension
froncz3@msu.edu

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

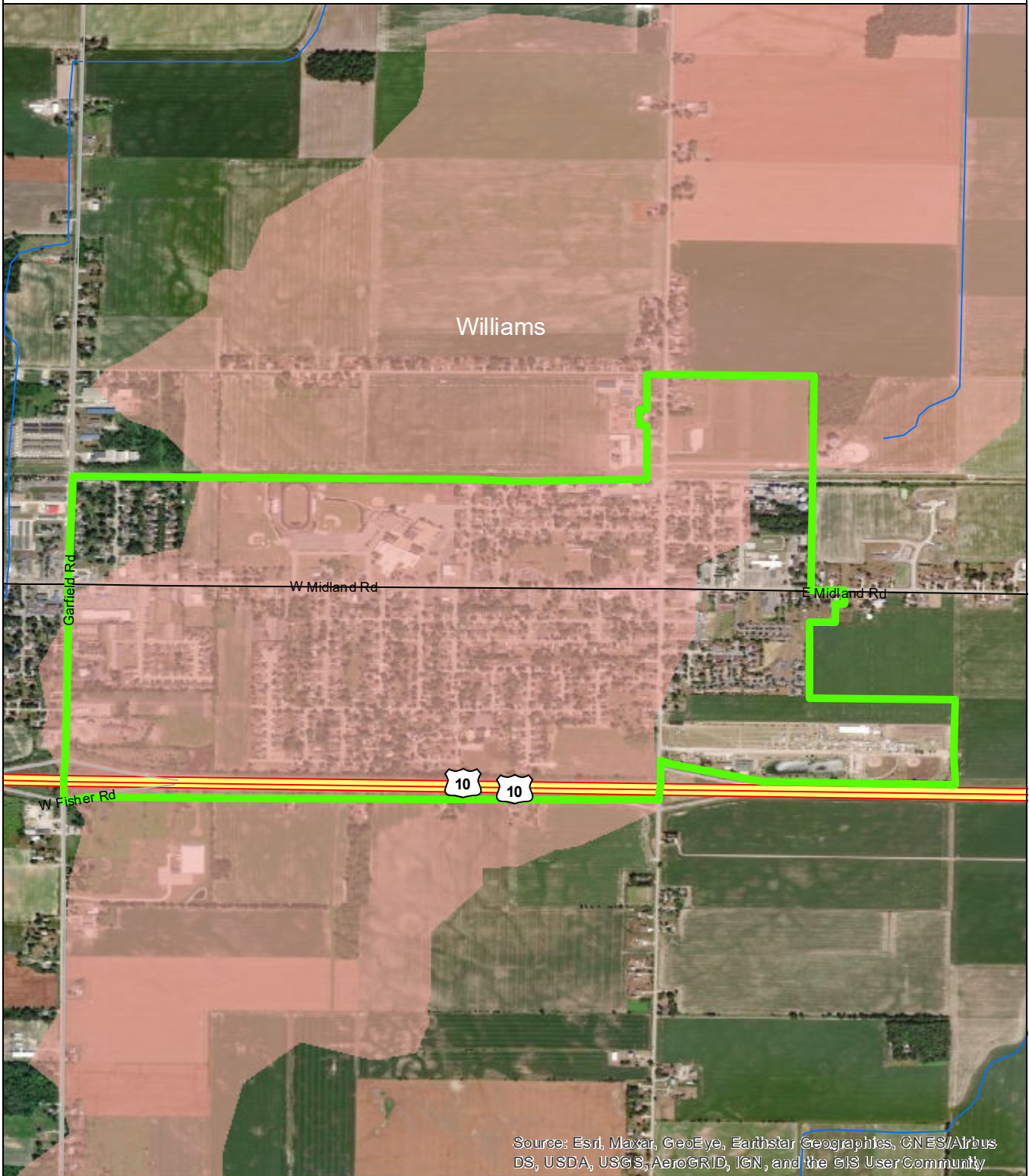


* <https://www.sciencebase.gov/catalog/item/5cbf5150e4b09b8c0b700df3>

Table of Contents

| | |
|--------------------------------|----|
| City of Auburn | 3 |
| Bangor Township | 4 |
| City of Bay City | 5 |
| Beaver Township | 6 |
| City of Essexville | 7 |
| Frankenlust Township | 8 |
| Fraser Township | 9 |
| Garfield Township | 10 |
| Gibson Township | 11 |
| Hampton Township | 12 |
| Kawkawlin Township | 13 |
| Merritt Township | 14 |
| Monitor Township | 15 |
| Mt Forest Township | 16 |
| City of Pinconning | 17 |
| Pinconning Township | 18 |
| Portsmouth Township | 19 |
| Williams Township | 20 |

City of Auburn



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

- City of Auburn
- Saginaw Bay Basin
- Counties
- Rivers and Streams
- Townships & Cities

Sediment Loading Risk

- low
- moderate
- high
- very high

0

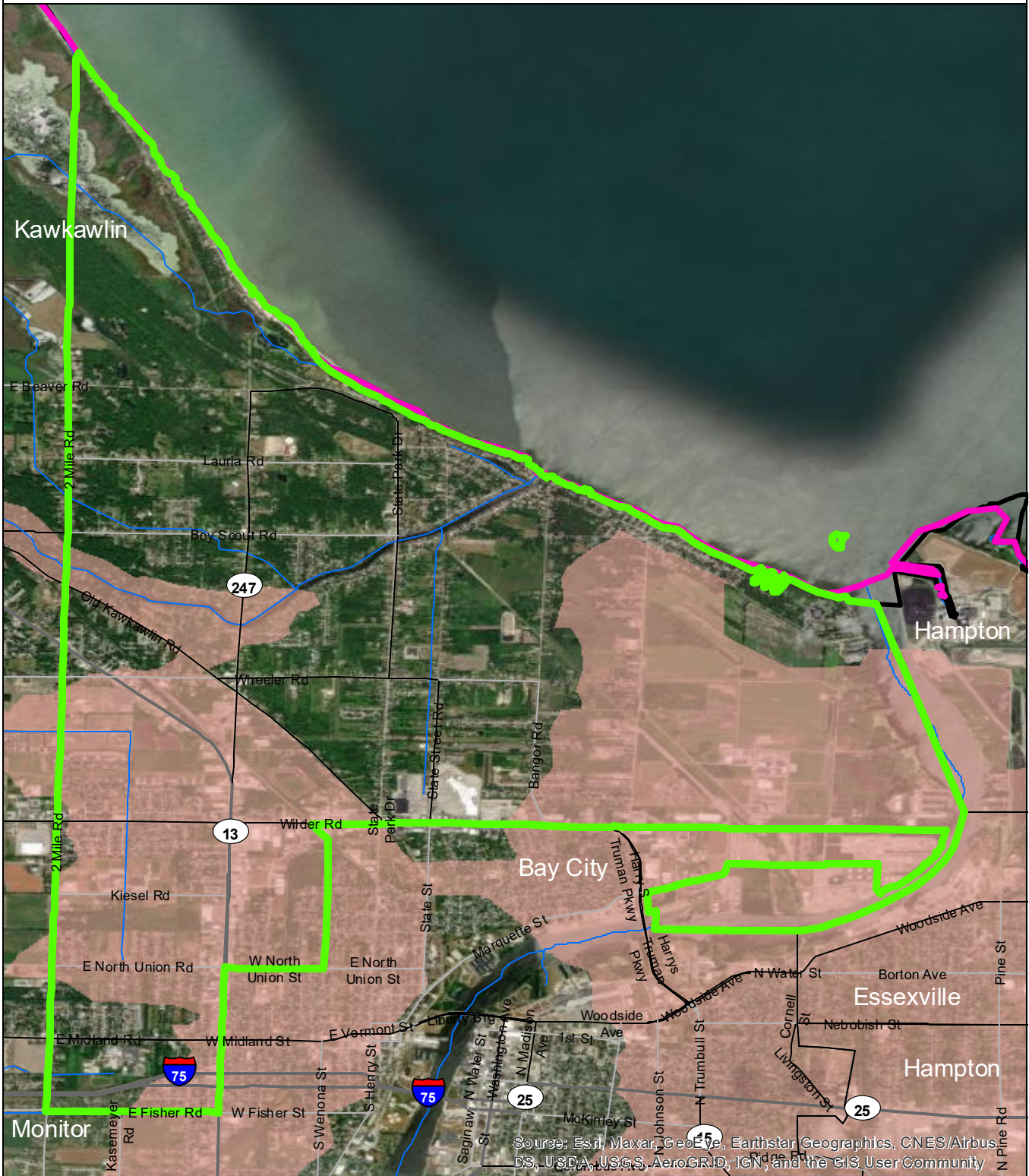
Data Sources

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

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



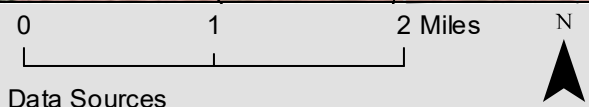
Bangor Township



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

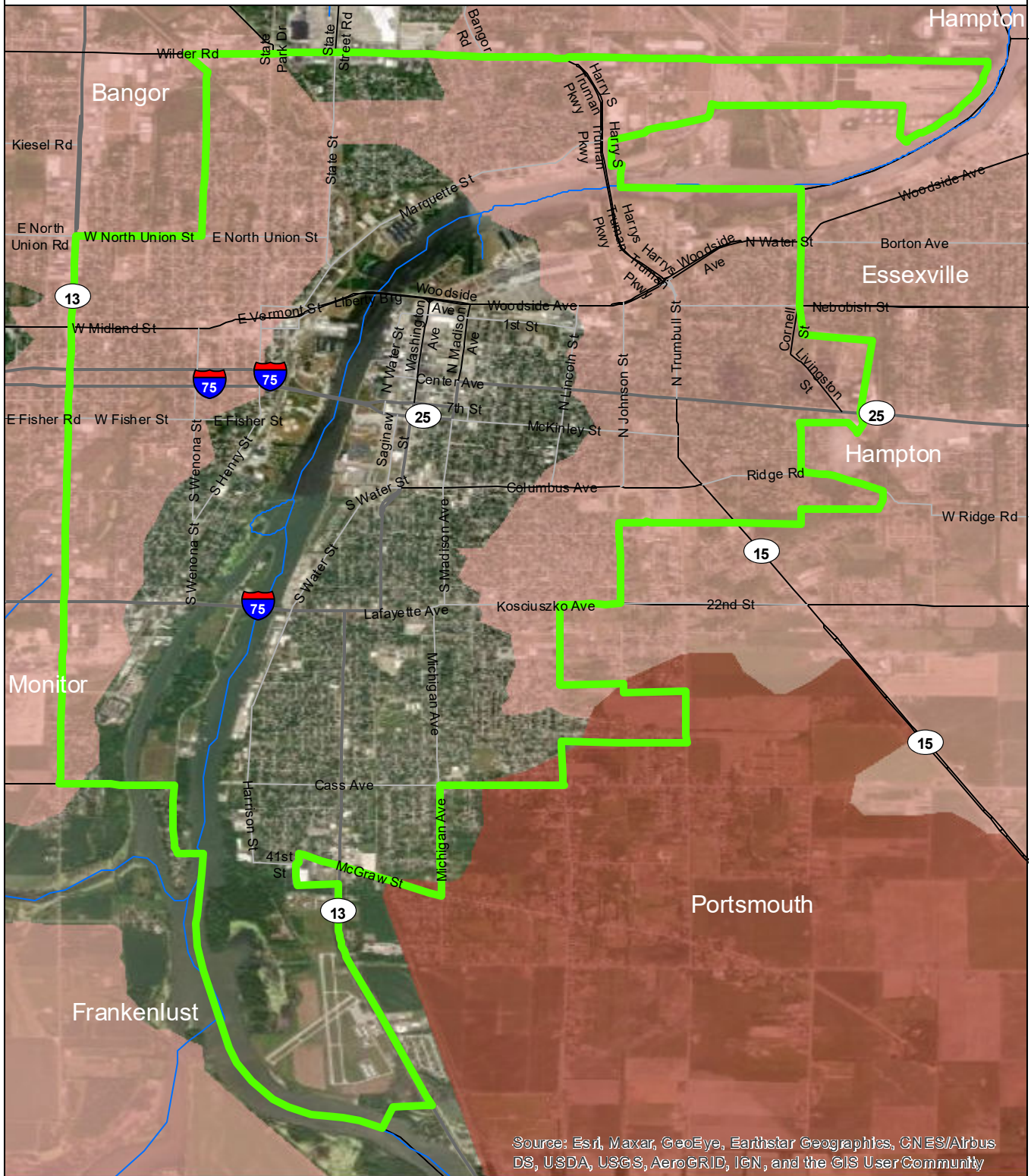
- Bangor Township
- Saginaw Bay Basin
- Counties
- Rivers and Streams
- Townships & Cities

- Sediment Loading Risk**
- low
 - moderate
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 - very high



Data Sources
 State of Michigan: Counties, Townships & Cities
 USGS: Sediment Loading Risk
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City of Bay City



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

- City of Bay City
- Saginaw Bay Basin
- Counties
- Rivers and Streams
- Townships & Cities

Sediment Loading Risk

- low
- moderate
- high
- very high

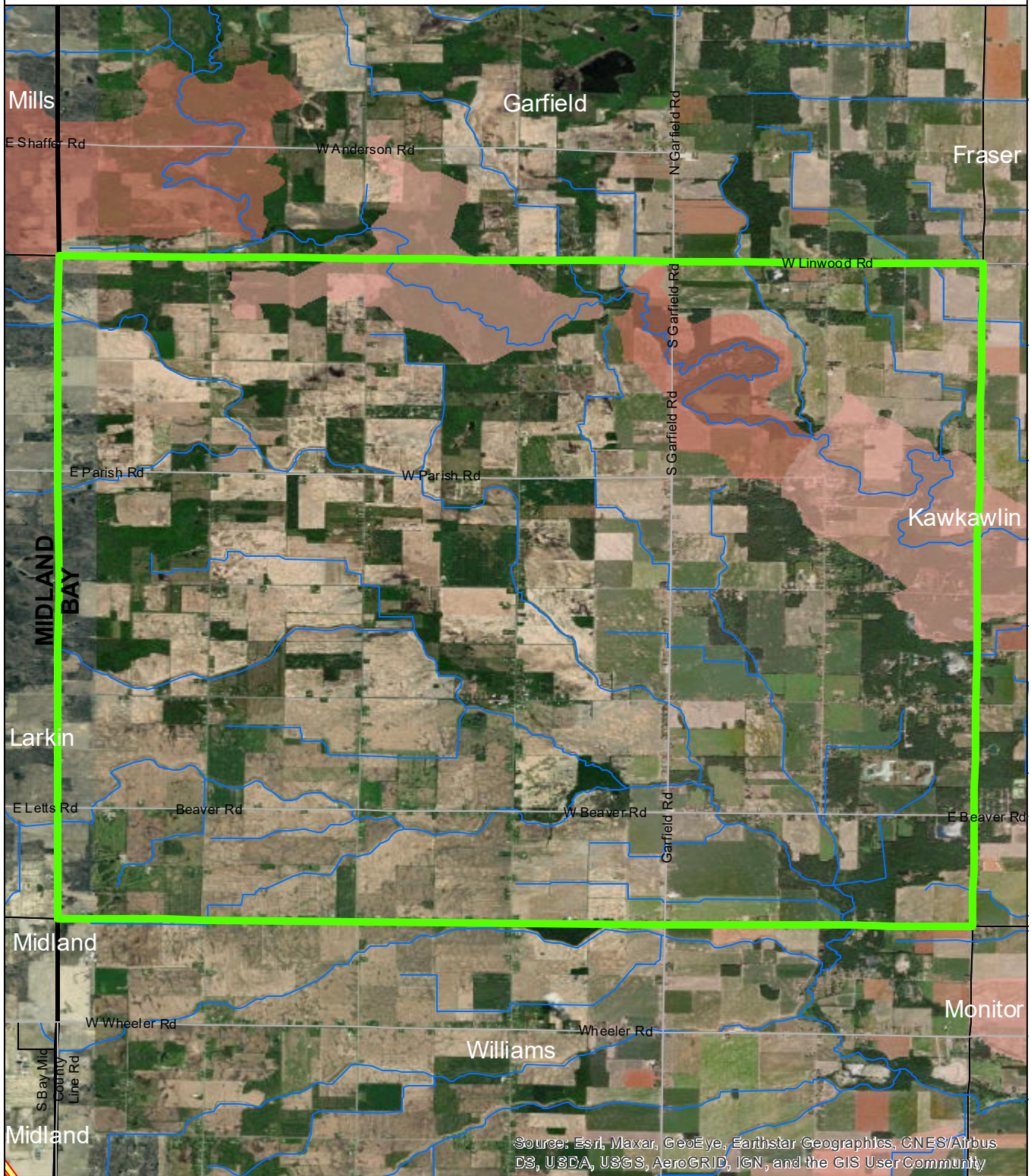


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Beaver Township

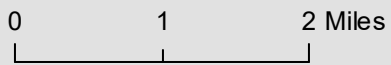


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- Beaver Township
- Saginaw Bay Basin
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Sediment Loading Risk

- low
- moderate
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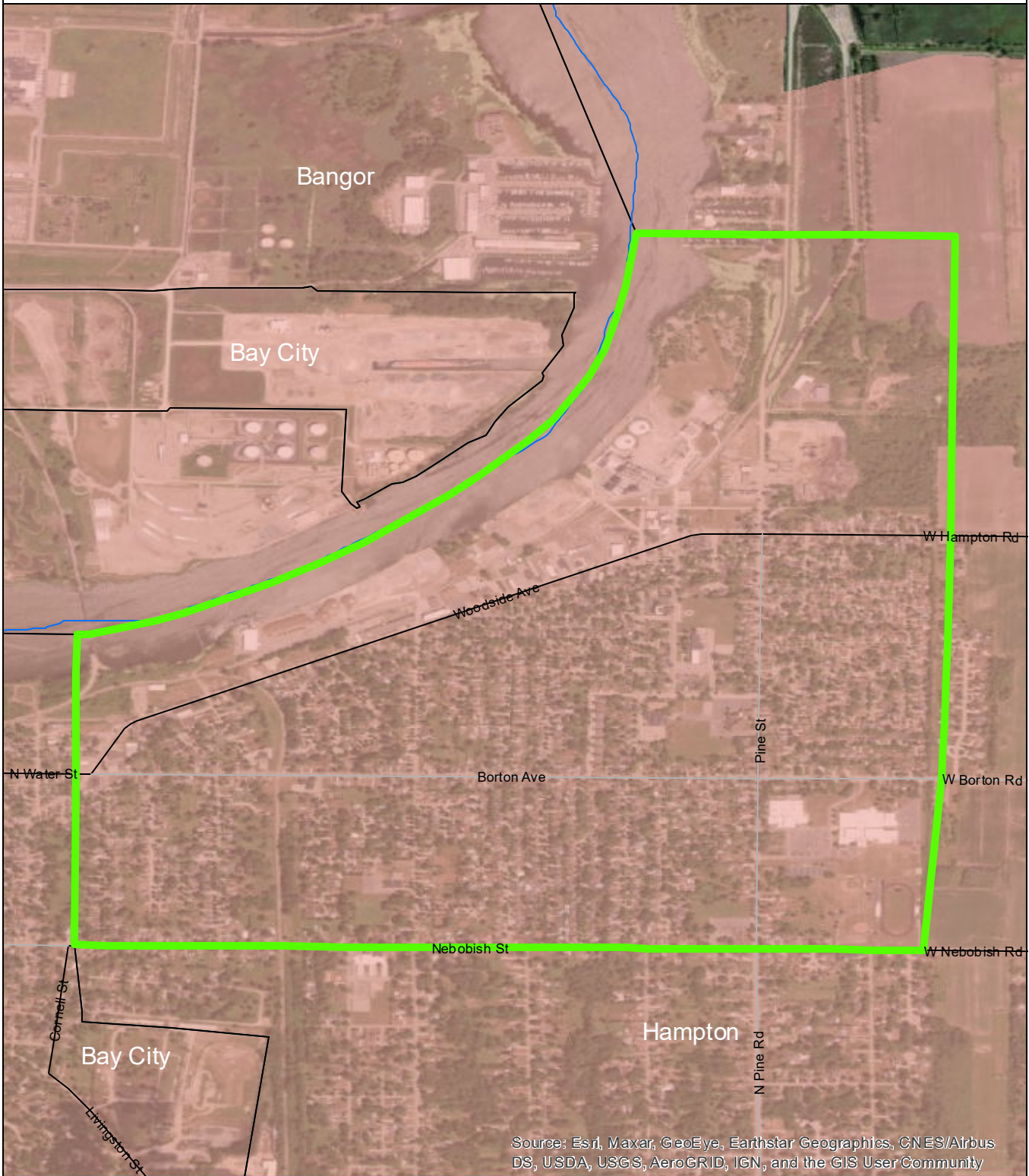
Data Sources

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

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City of Essexville



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

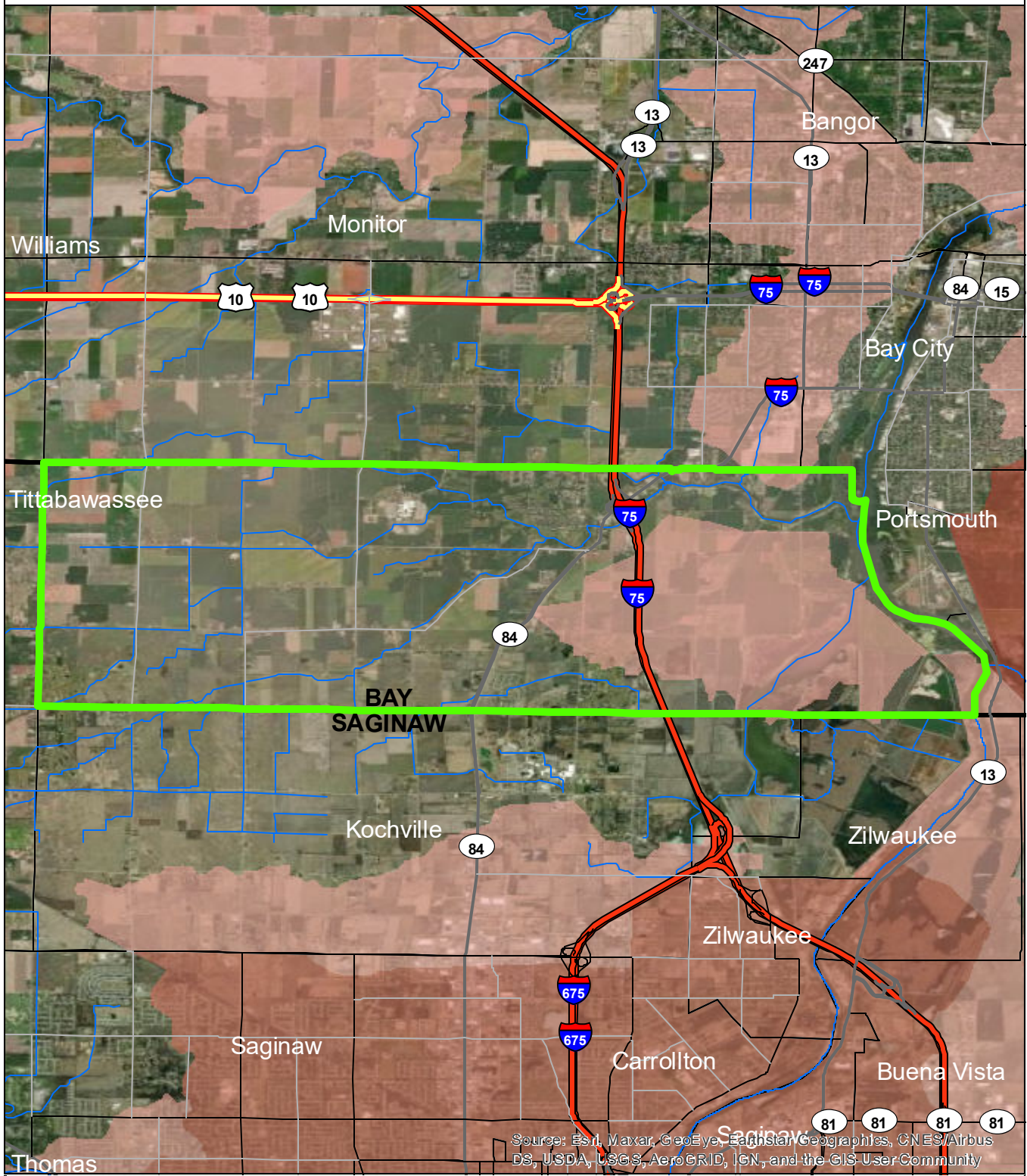
- City of Essexville
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- Counties
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- low
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Data Sources
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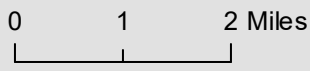
Frankenlust Township



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

- Frankenlust Township
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- Sediment Loading Risk**
- low
 - moderate
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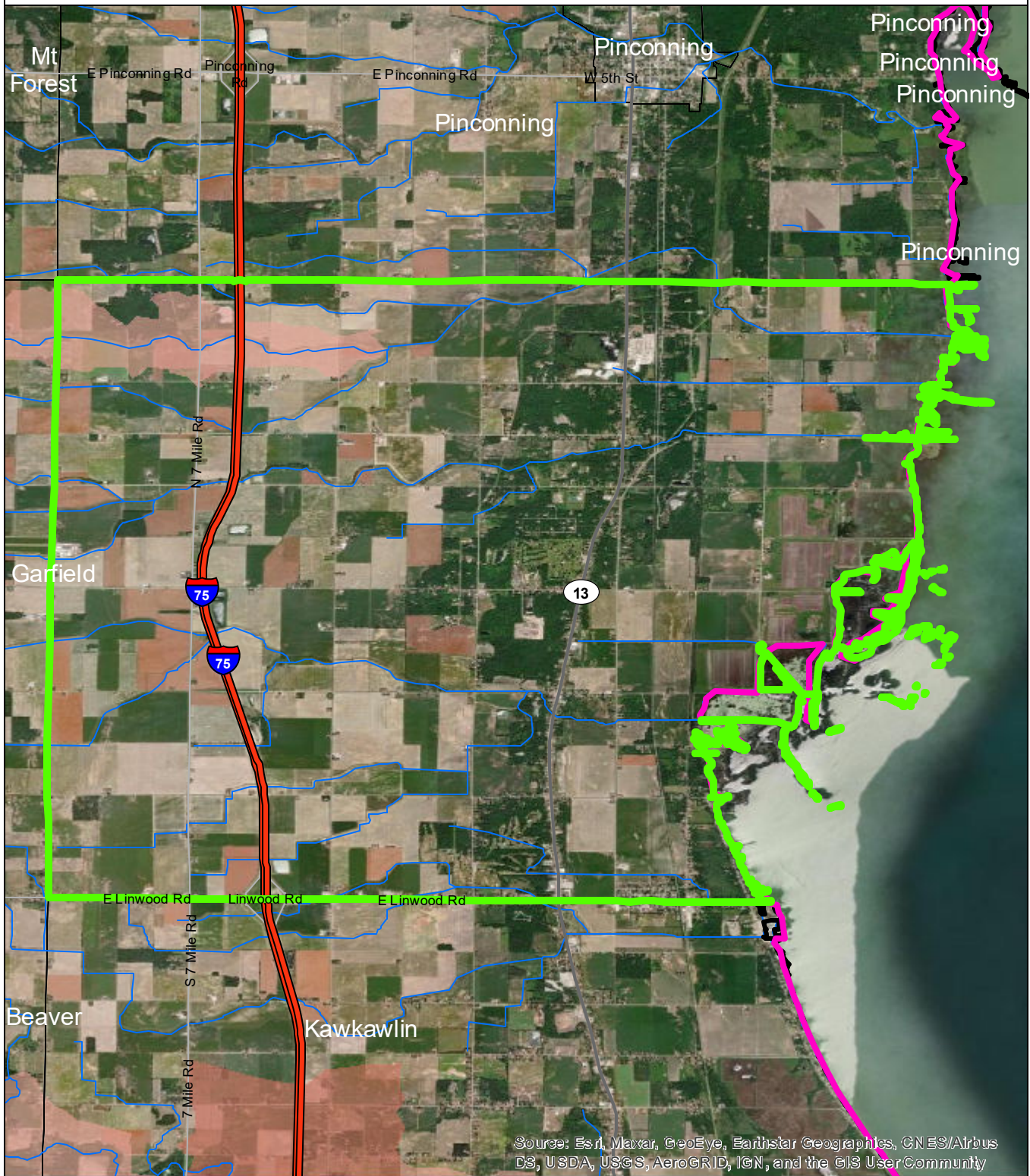


Data Sources

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

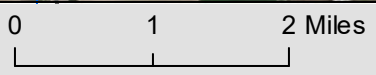


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Fraser Township
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Sediment Loading Risk

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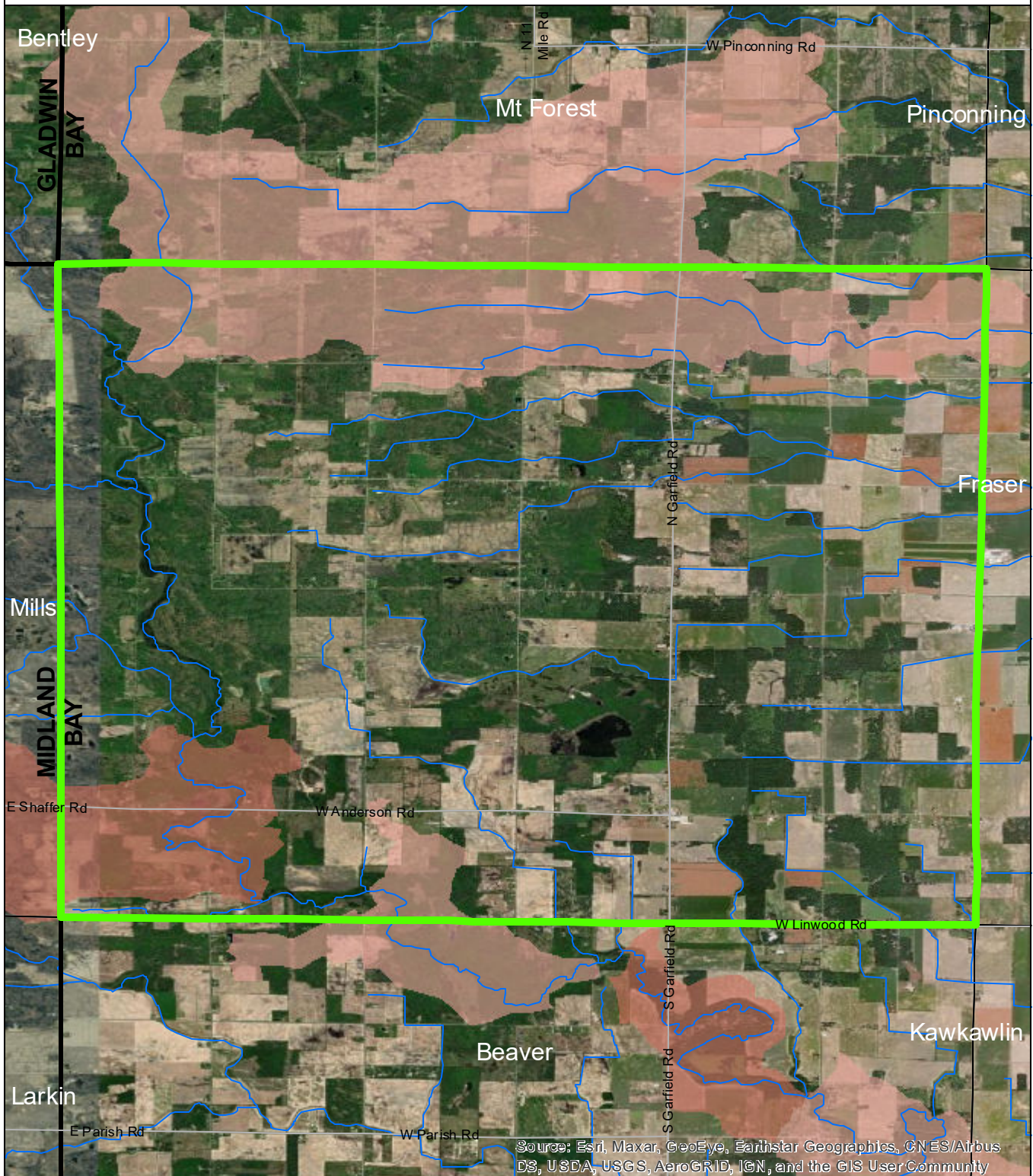


Data Sources

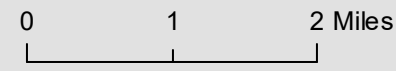
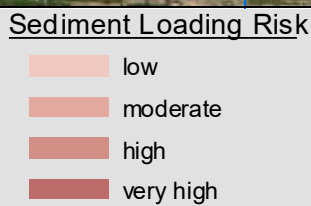
State of Michigan: Counties, Townships & Cities
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Garfield Township



- Garfield Township
- Saginaw Bay Basin
- Counties
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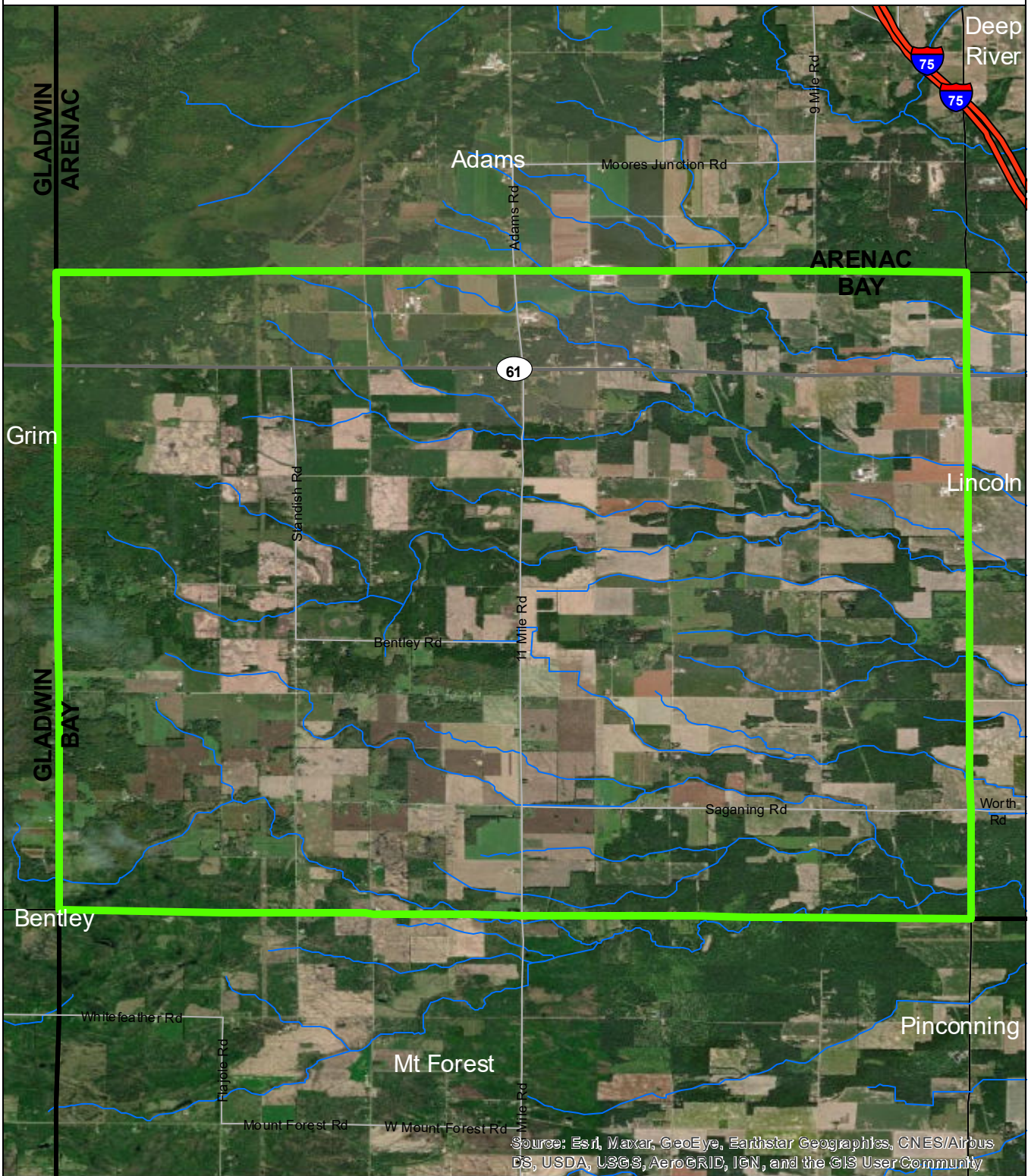
Data Sources

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

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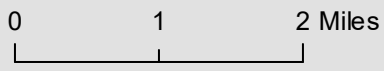
Gibson Township



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

- Gibson Township
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- Sediment Loading Risk**
- low
 - moderate
 - high
 - very high



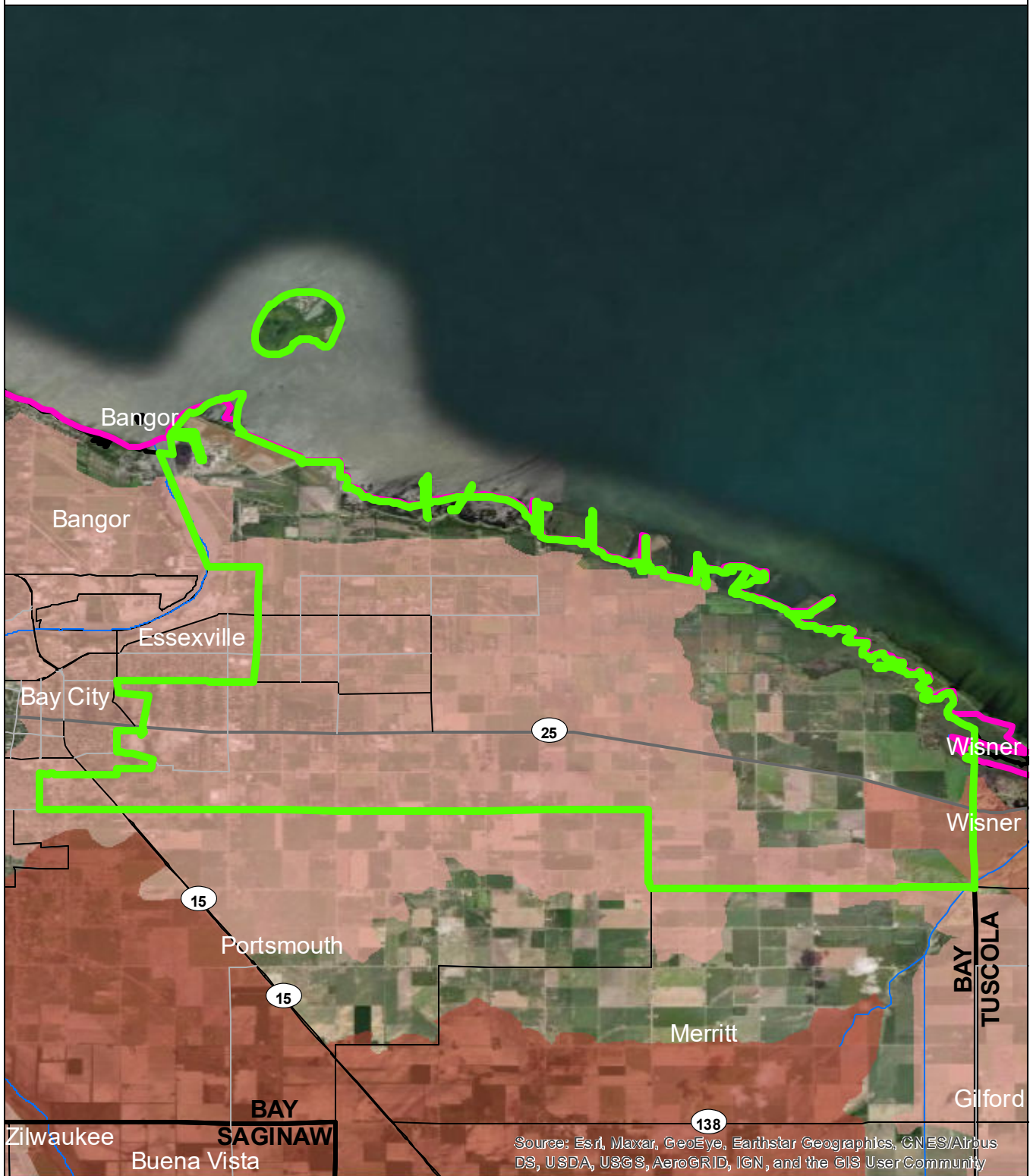
Data Sources

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

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Hampton Township

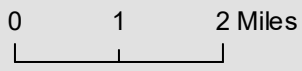


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Hampton Township
- Saginaw Bay Basin
- Counties
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Sediment Loading Risk

- low
- moderate
- high
- very high

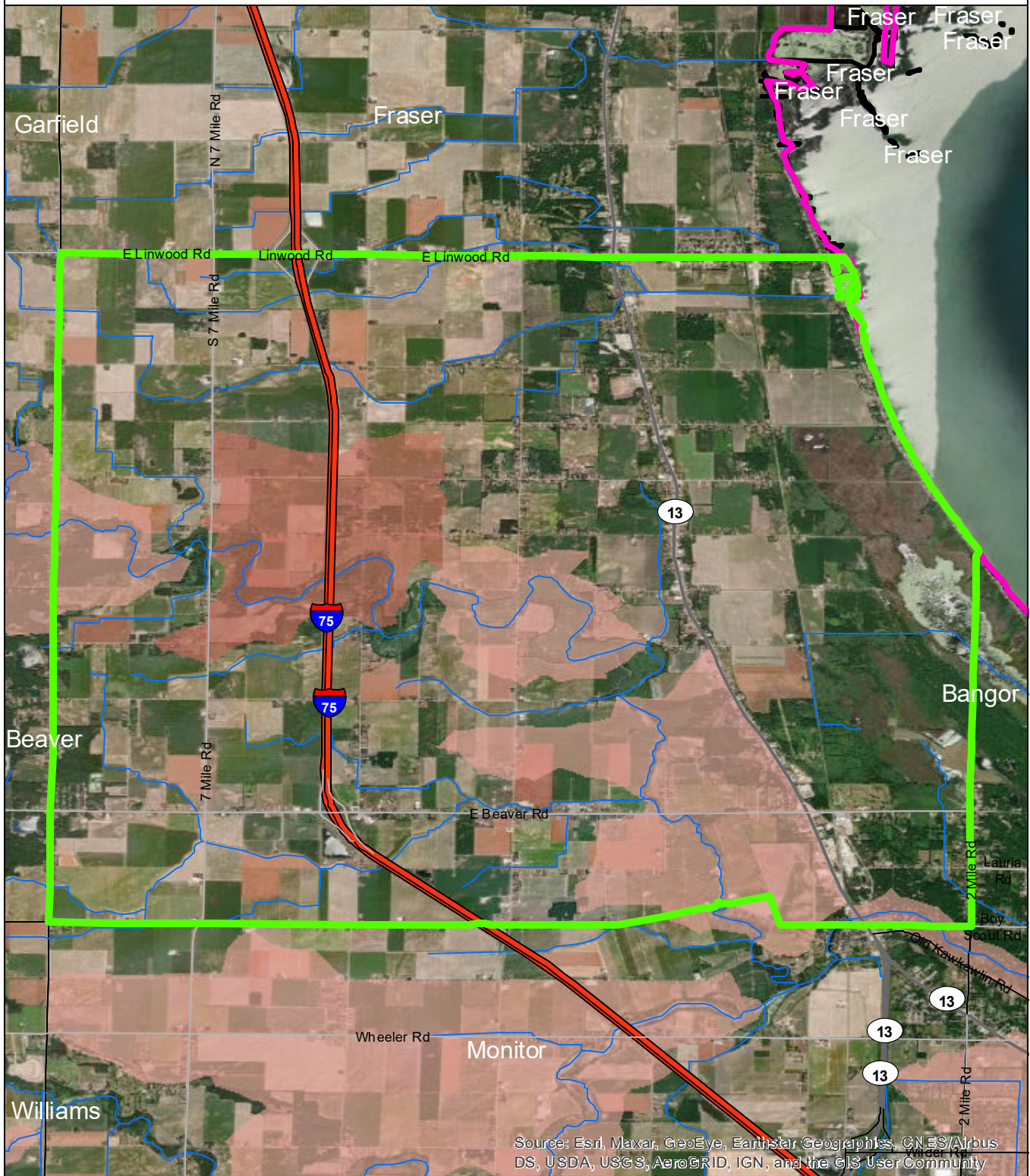


Data Sources

State of Michigan: Counties, Townships & Cities
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Kawkawlin Township



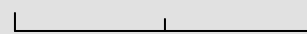
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Kawkawlin Township
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- Counties
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Sediment Loading Risk

- low
- moderate
- high
- very high

0 1 2 Miles



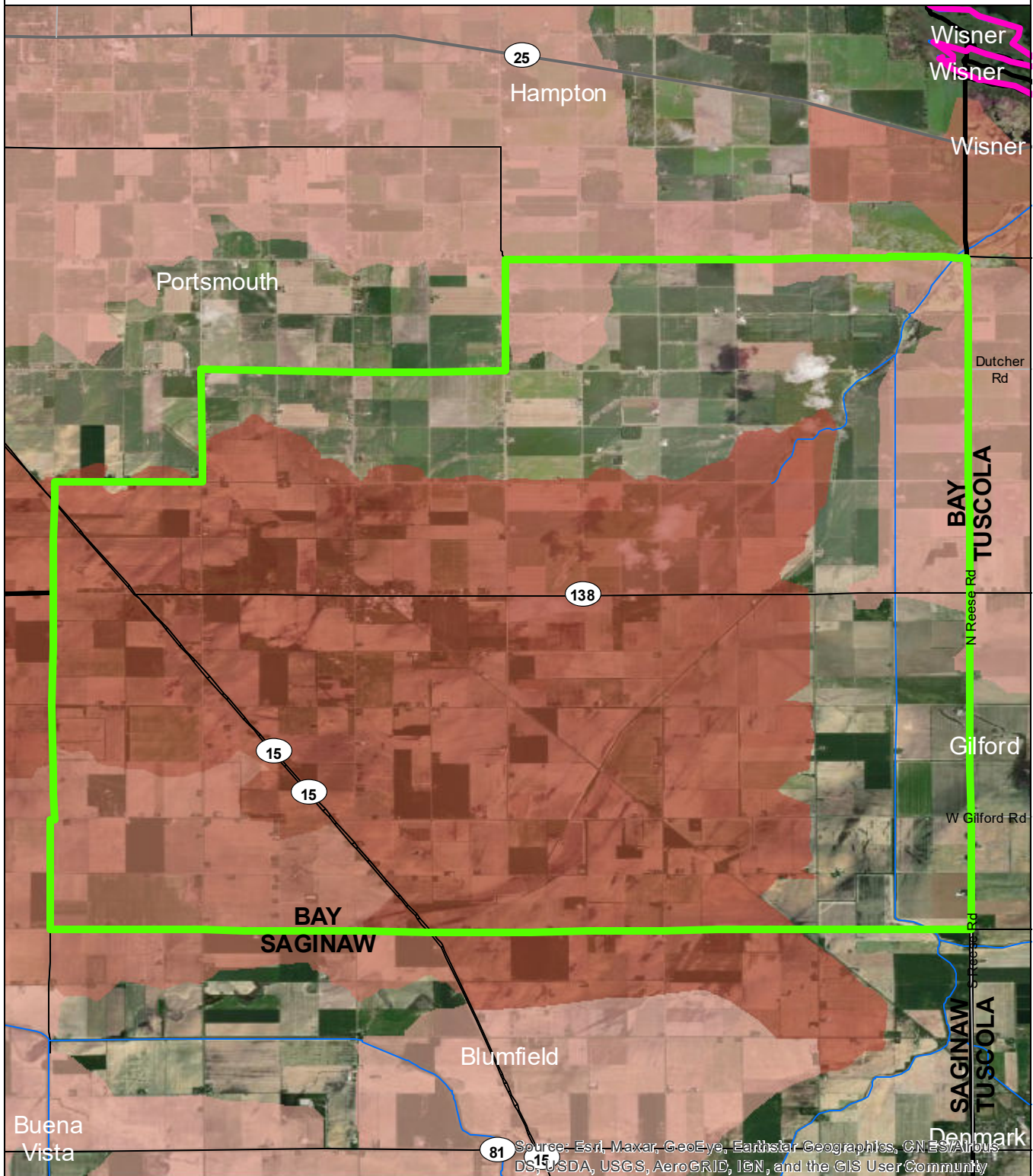
Data Sources

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

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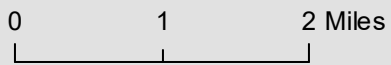
Merritt Township



- Merritt Township
- Saginaw Bay Basin
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Sediment Loading Risk

- low
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- high
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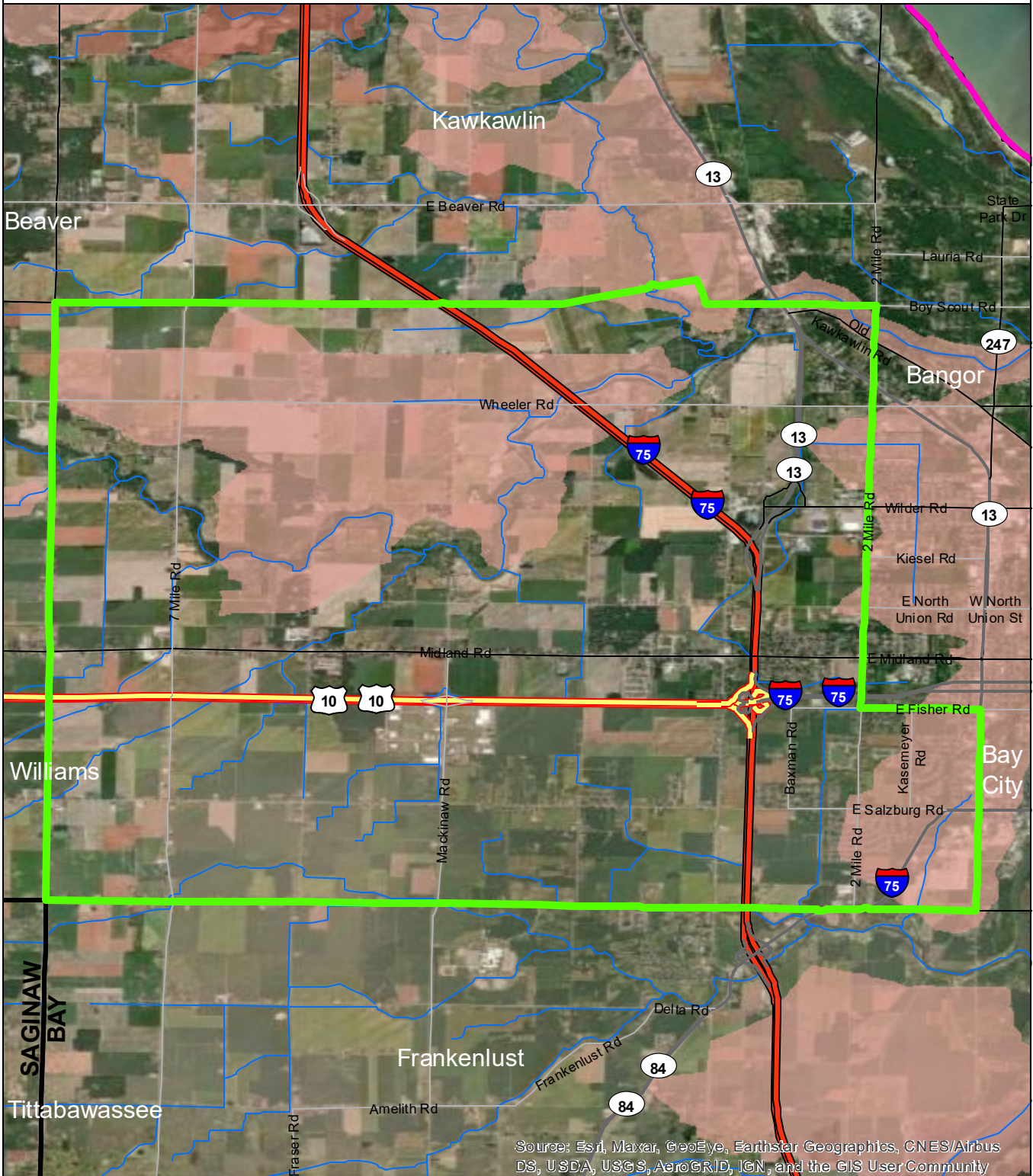
Data Sources

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Monitor Township

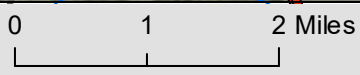


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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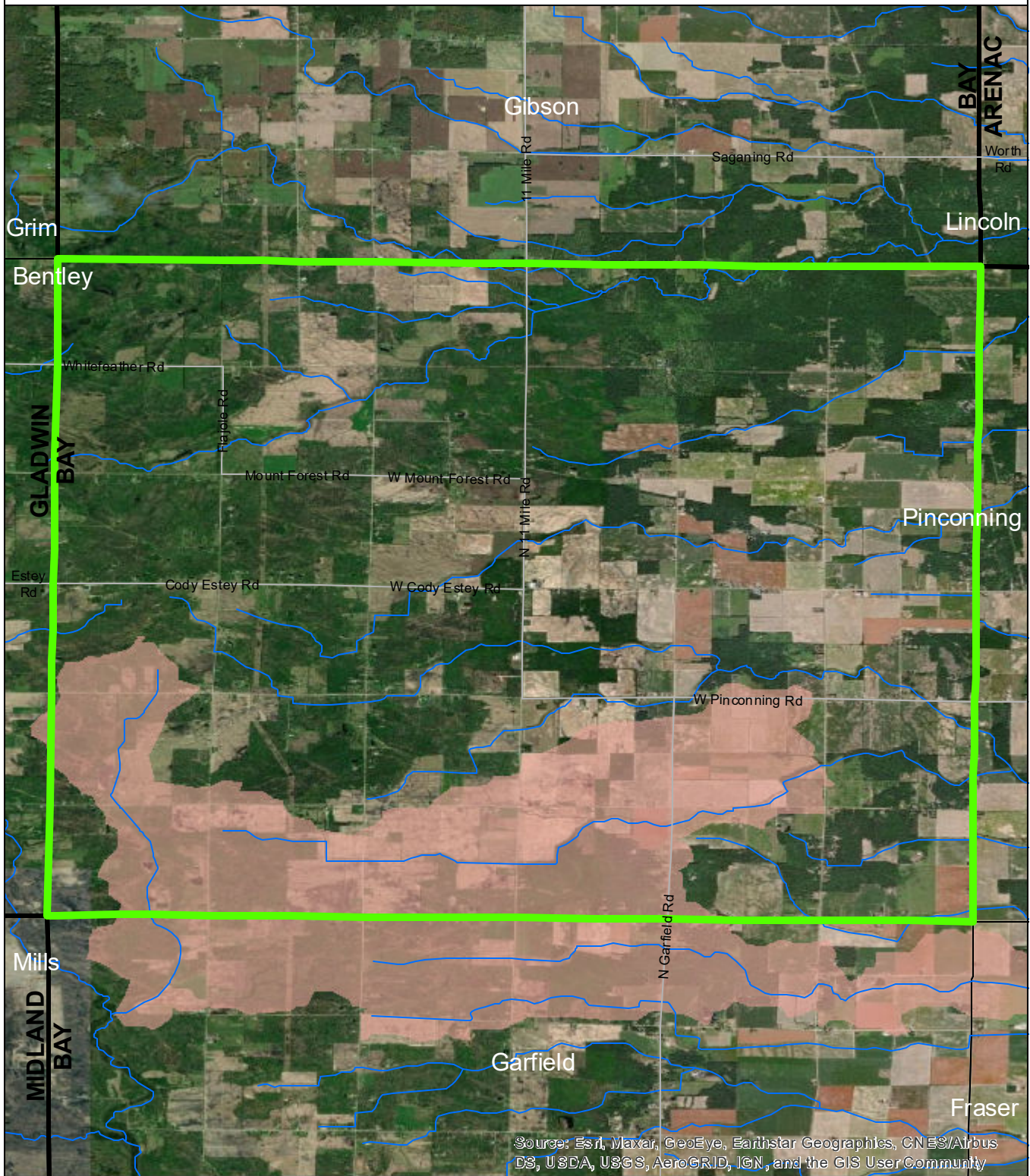


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Mt Forest Township

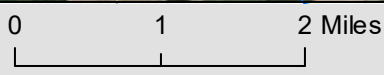


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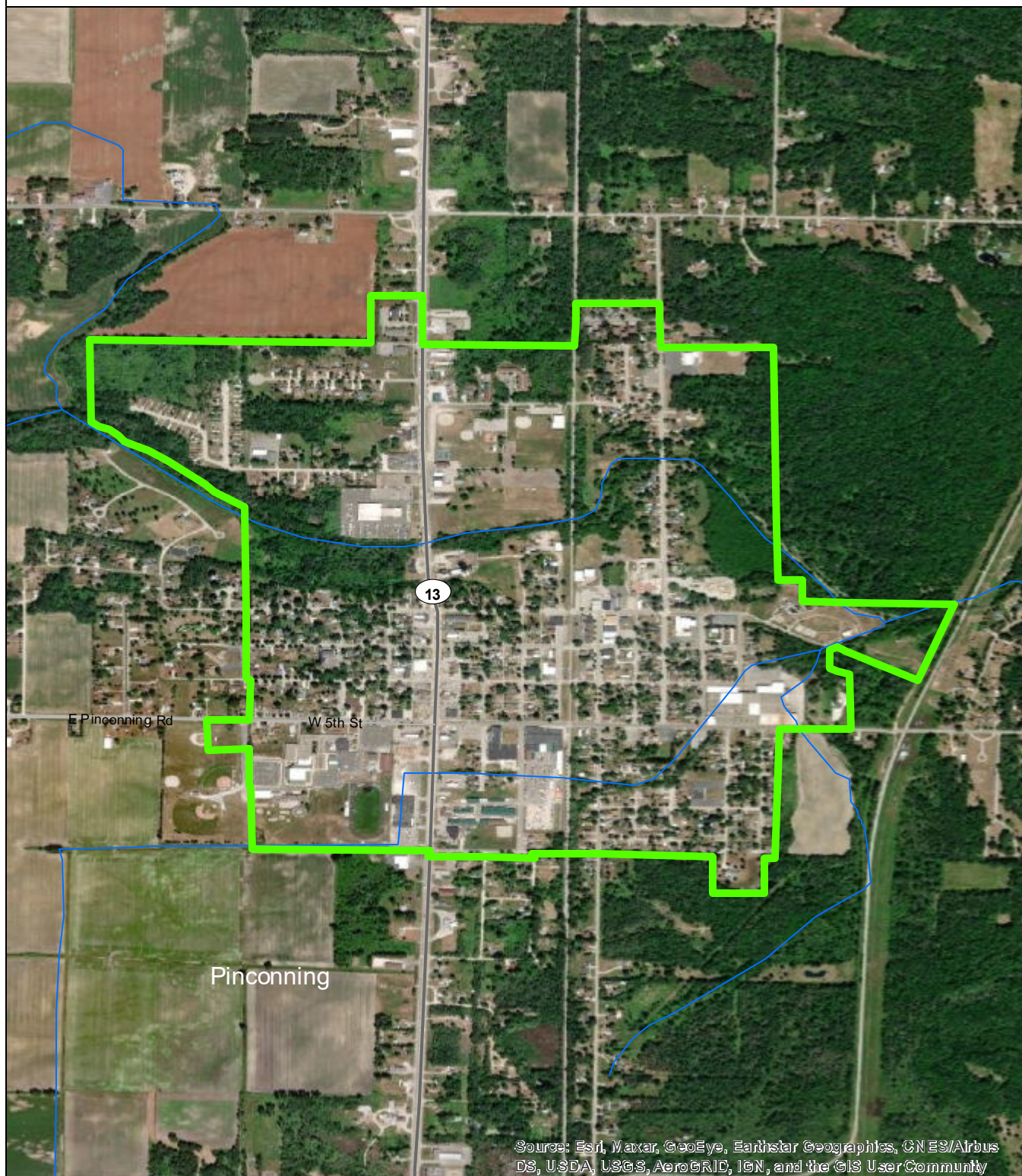
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City of Pinconning



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- City of Pinconning
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Sediment Loading Risk

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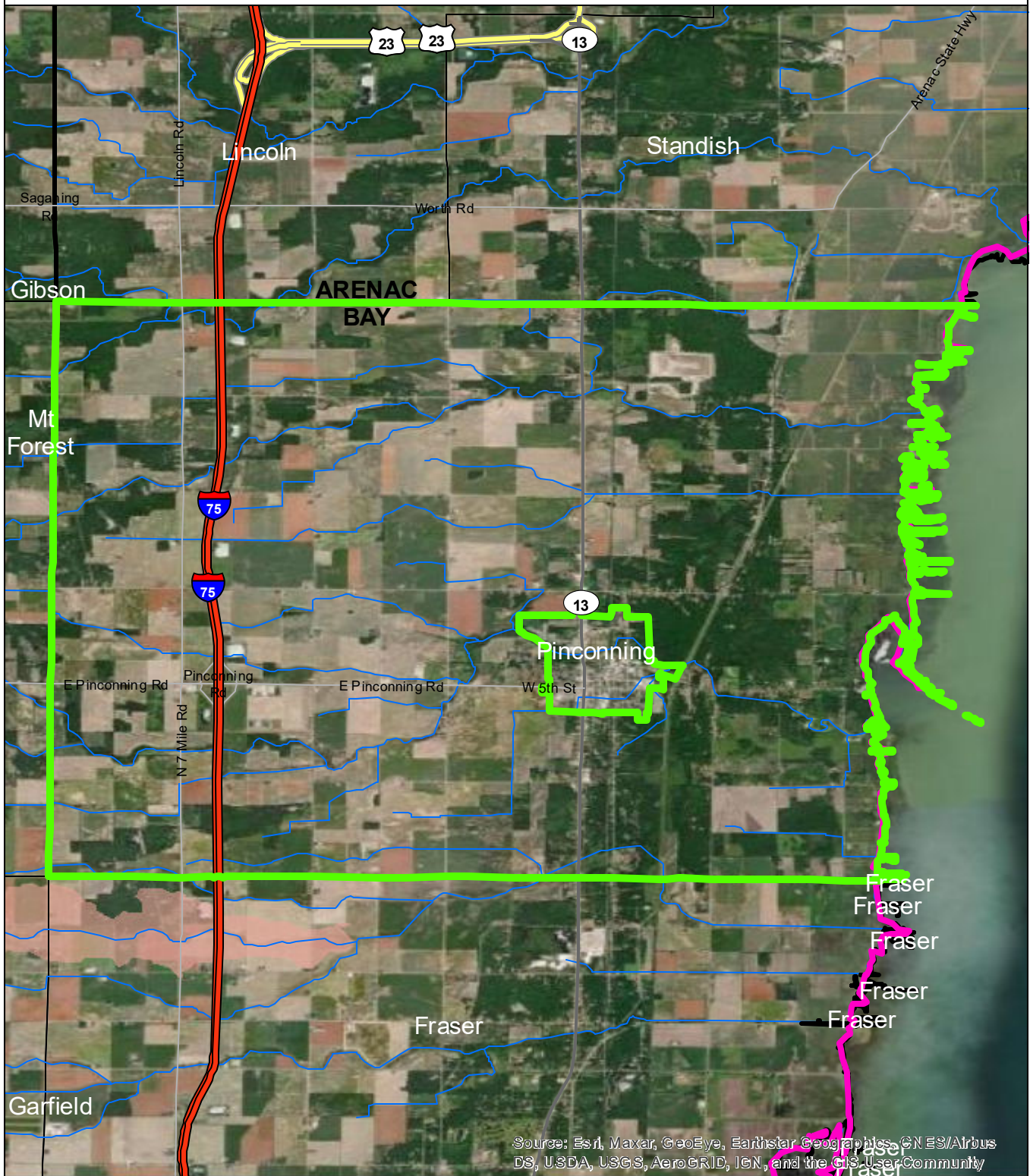


Data Sources

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

Pinconning Township

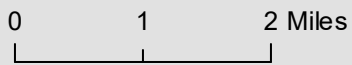


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Sediment Loading Risk

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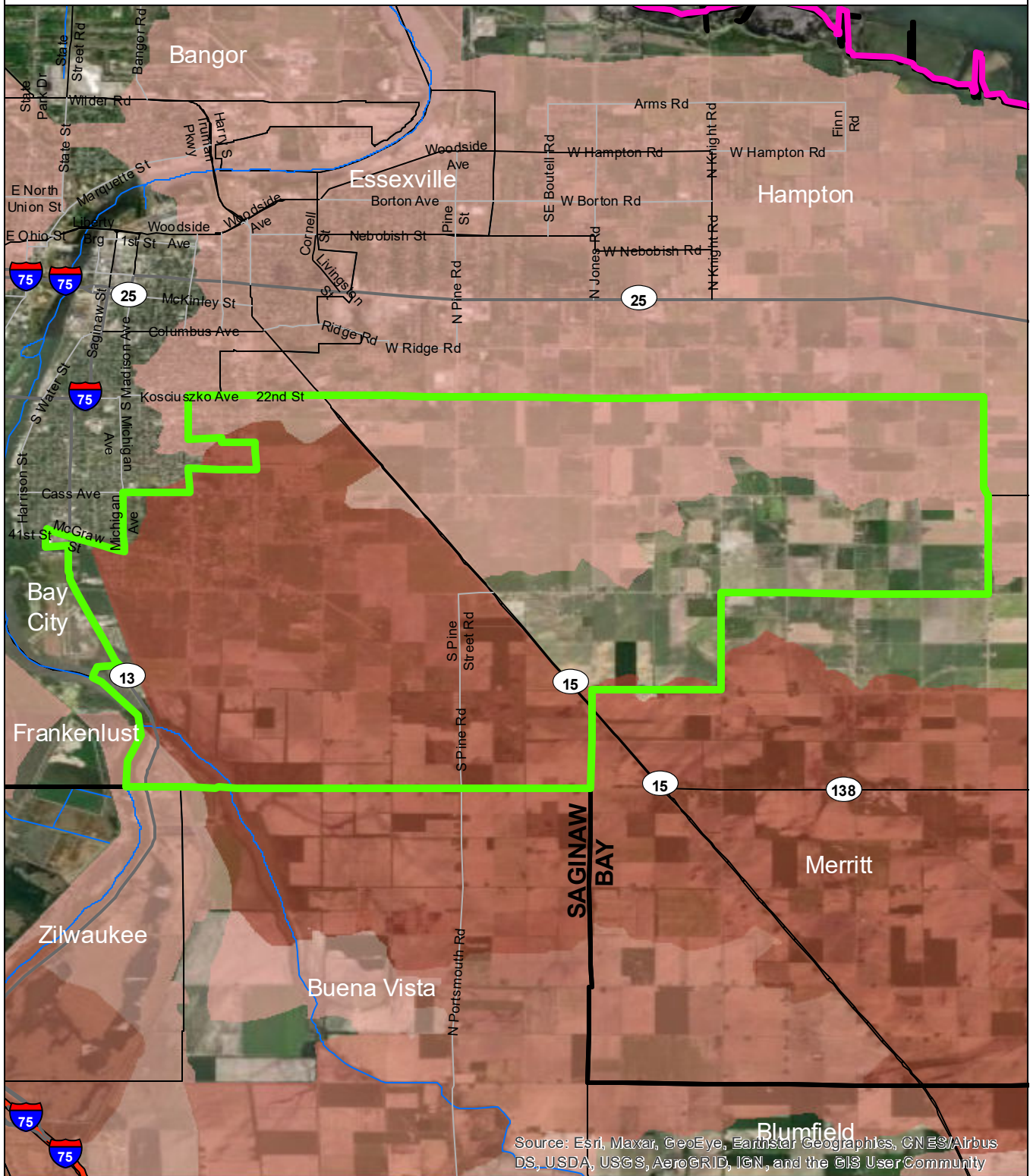
Data Sources

State of Michigan: Counties, Townships & Cities
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Portsmouth Township

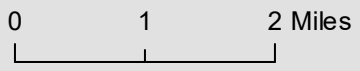


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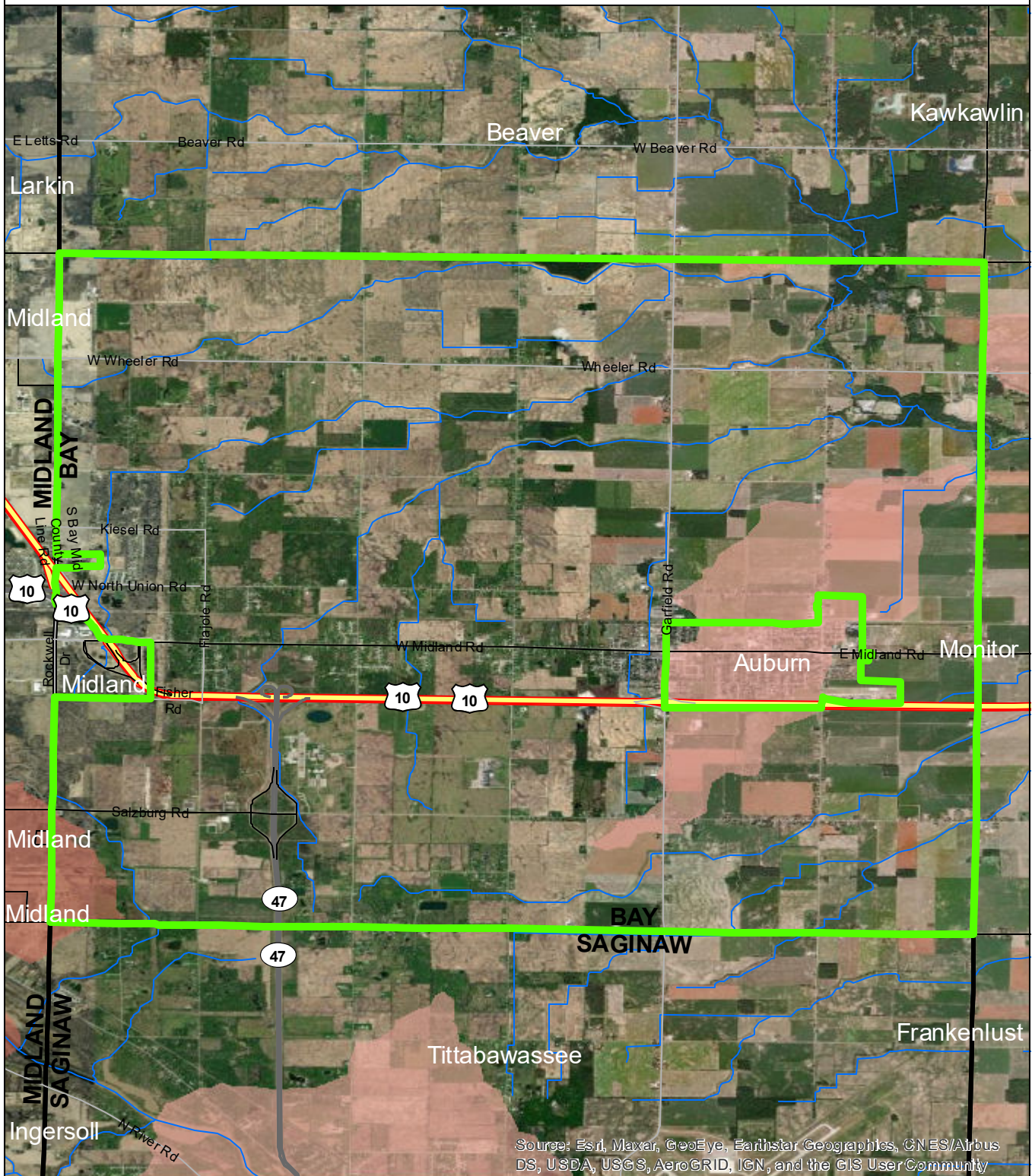
Data Sources

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Williams Township



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- Williams Township
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0 1 2 Miles

Scale bar showing 0, 1, and 2 miles.

Data Sources

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