

CREP Prioritization: Mapping Sediment Loading Risk in the Lake Macatawa 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 Lake Macatawa 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).

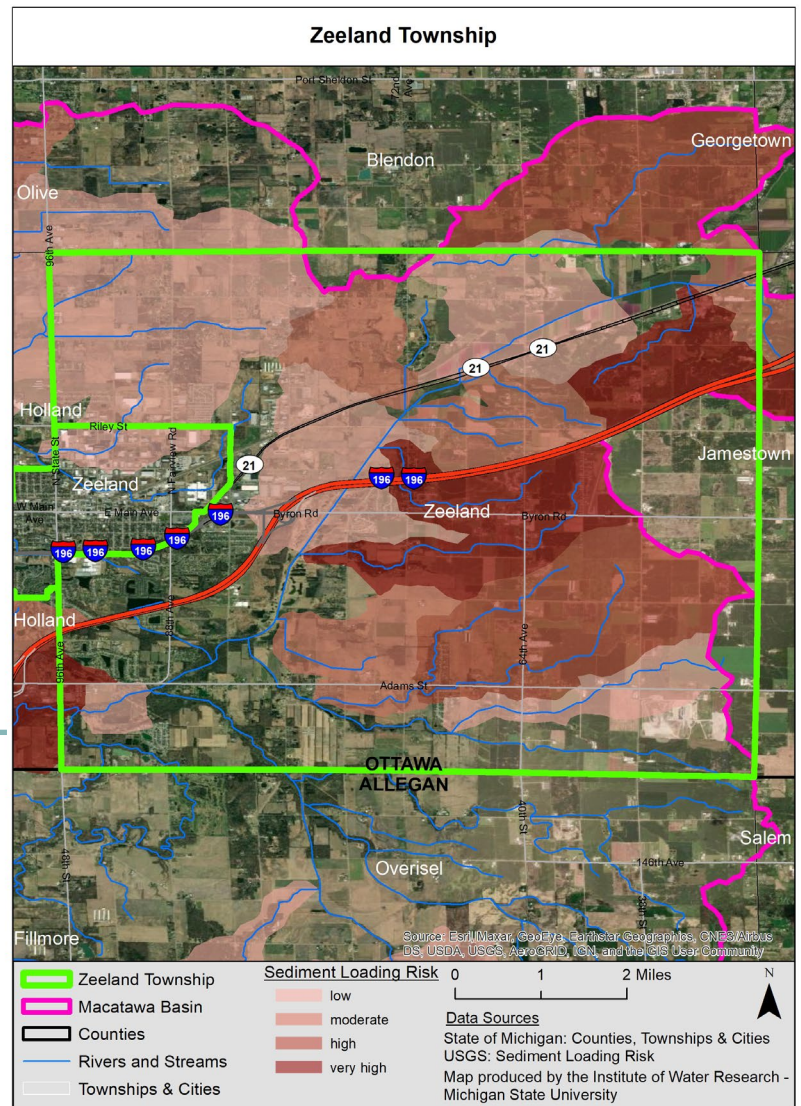
Contacts

Please direct questions about MSUE's project to:

Sarah Fronczak
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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

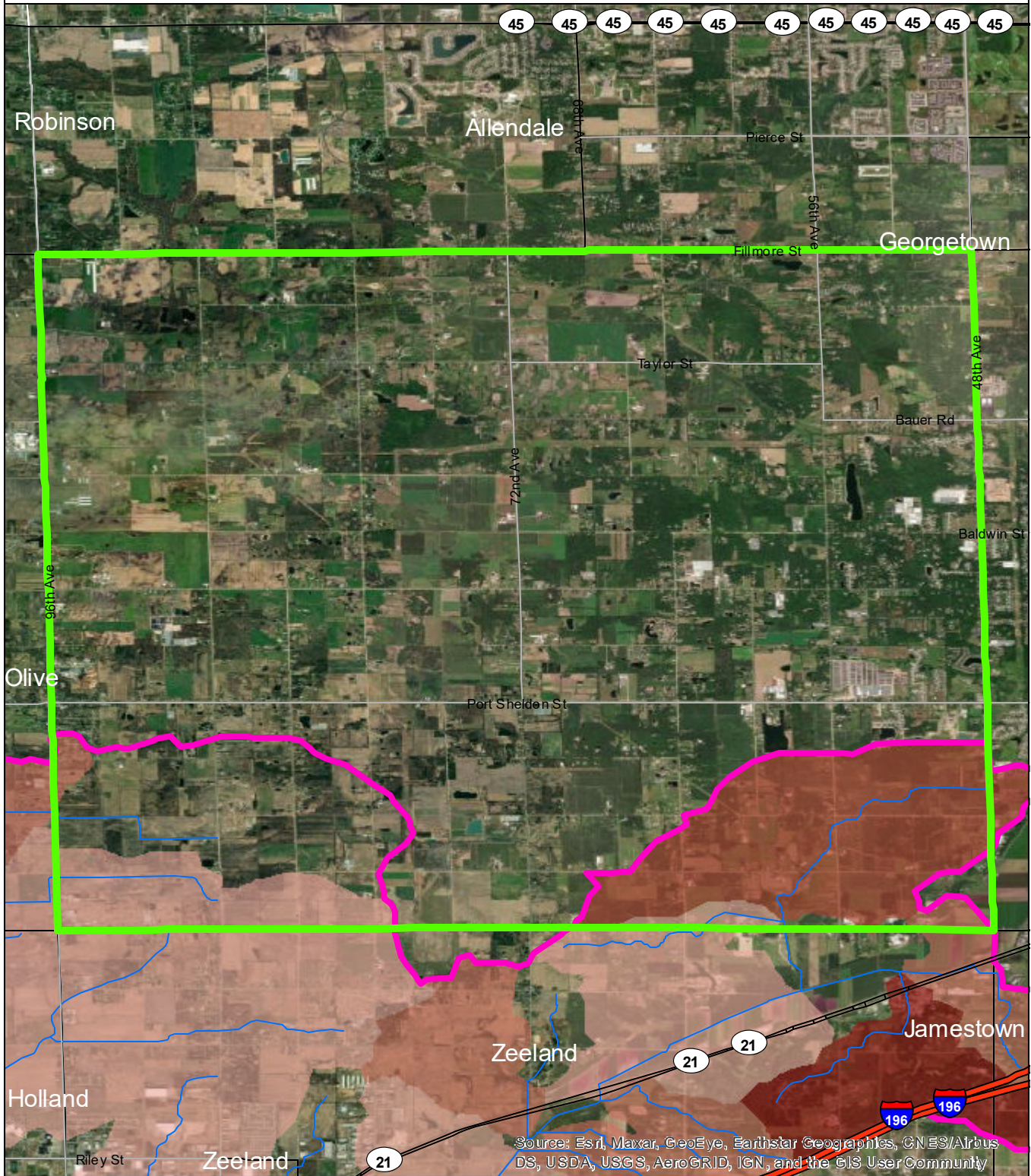


* <https://www.sciencebase.gov/catalog/item/5cbf5150e4b09b8c0b700df3>

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Blendon Township

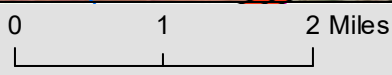


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Blendon Township
- Macatawa Basin
- Counties
- Rivers and Streams
- Townships & Cities

Sediment Loading Risk

- low
- moderate
- high
- very high

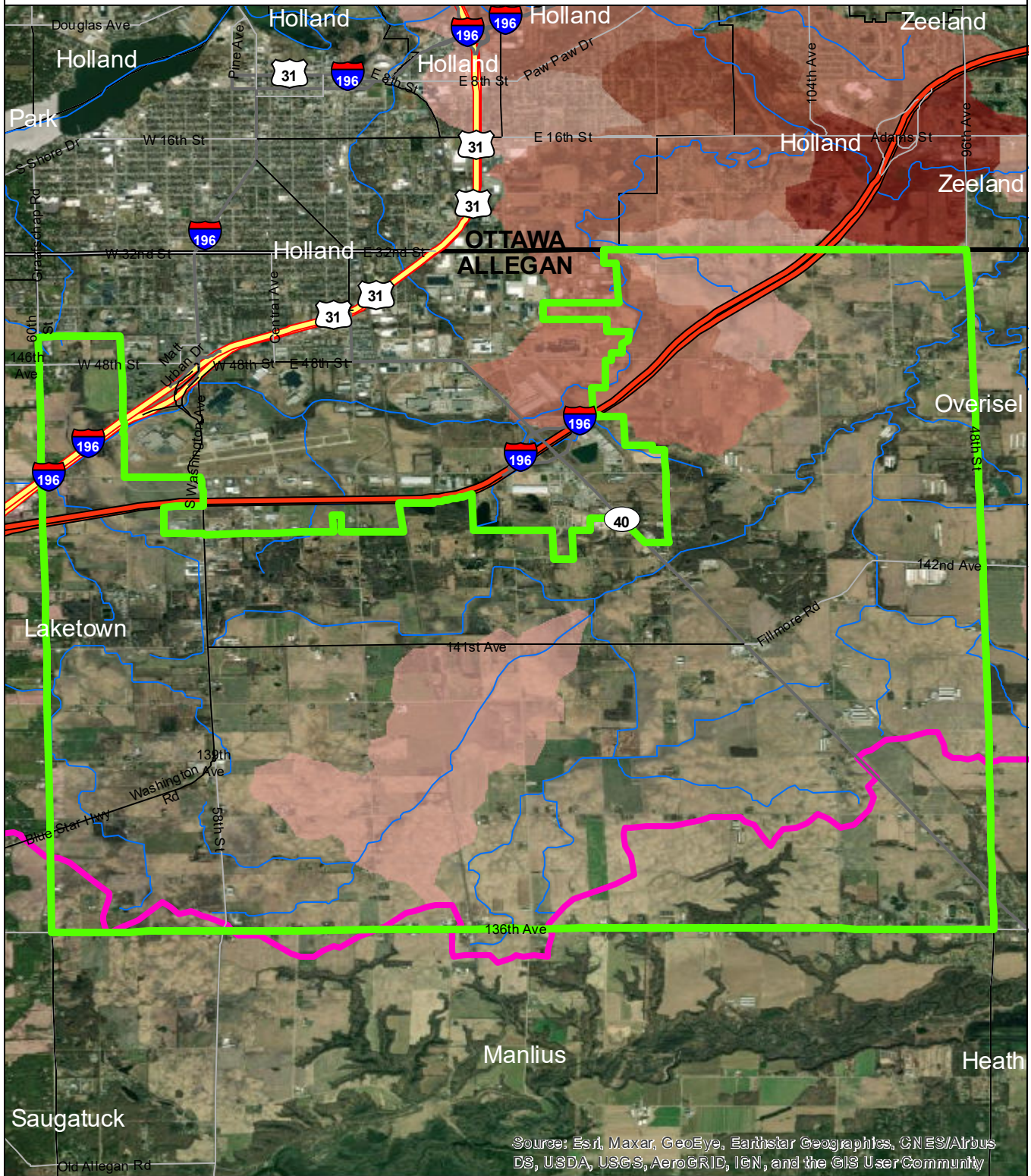


Data Sources

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



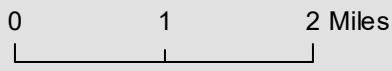
Fillmore Township



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

- Fillmore Township
- Macatawa Basin
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- Sediment Loading Risk**
- low
 - moderate
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 - very high

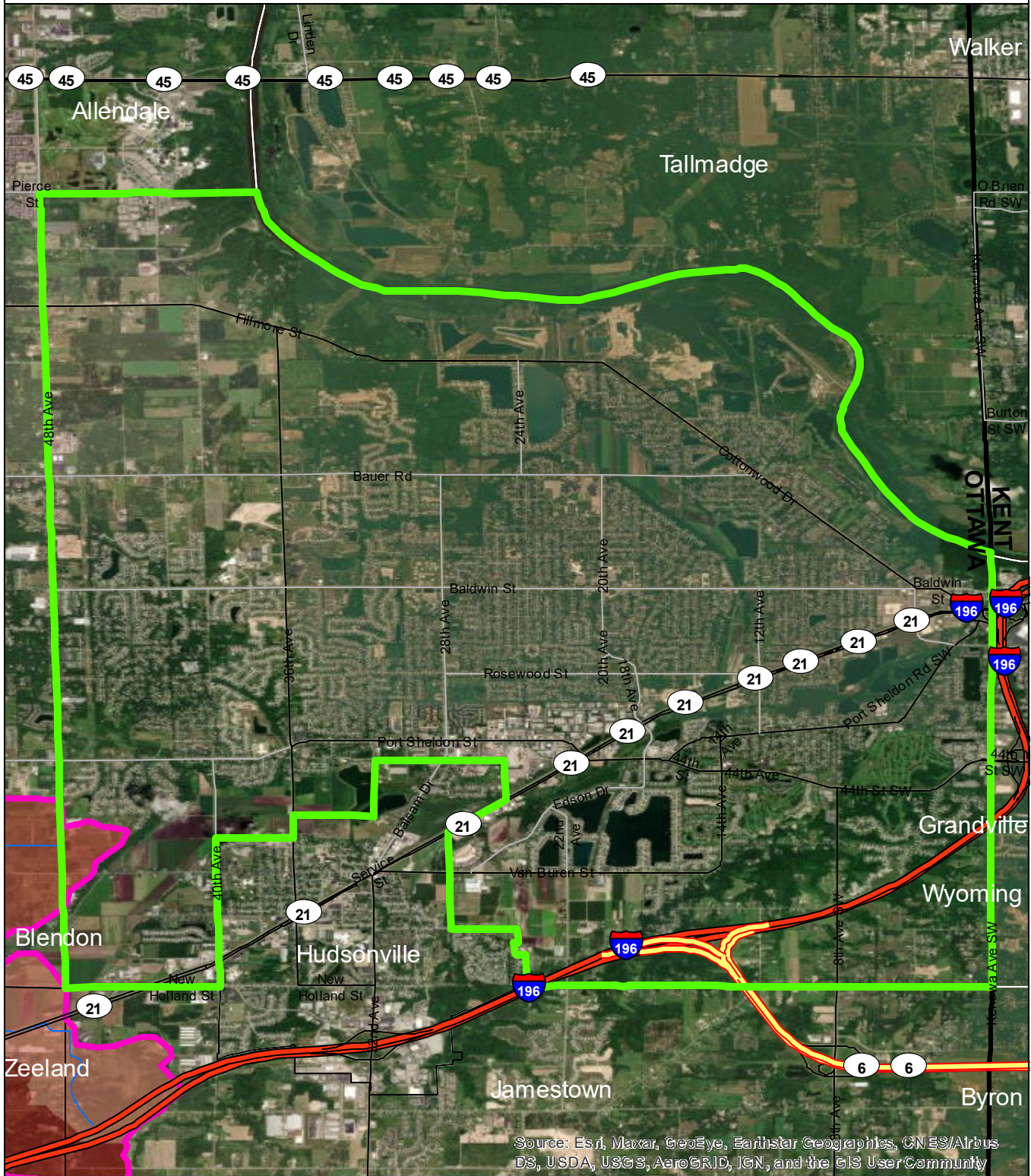


Data Sources

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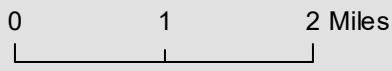
Georgetown Township



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

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- low
 - moderate
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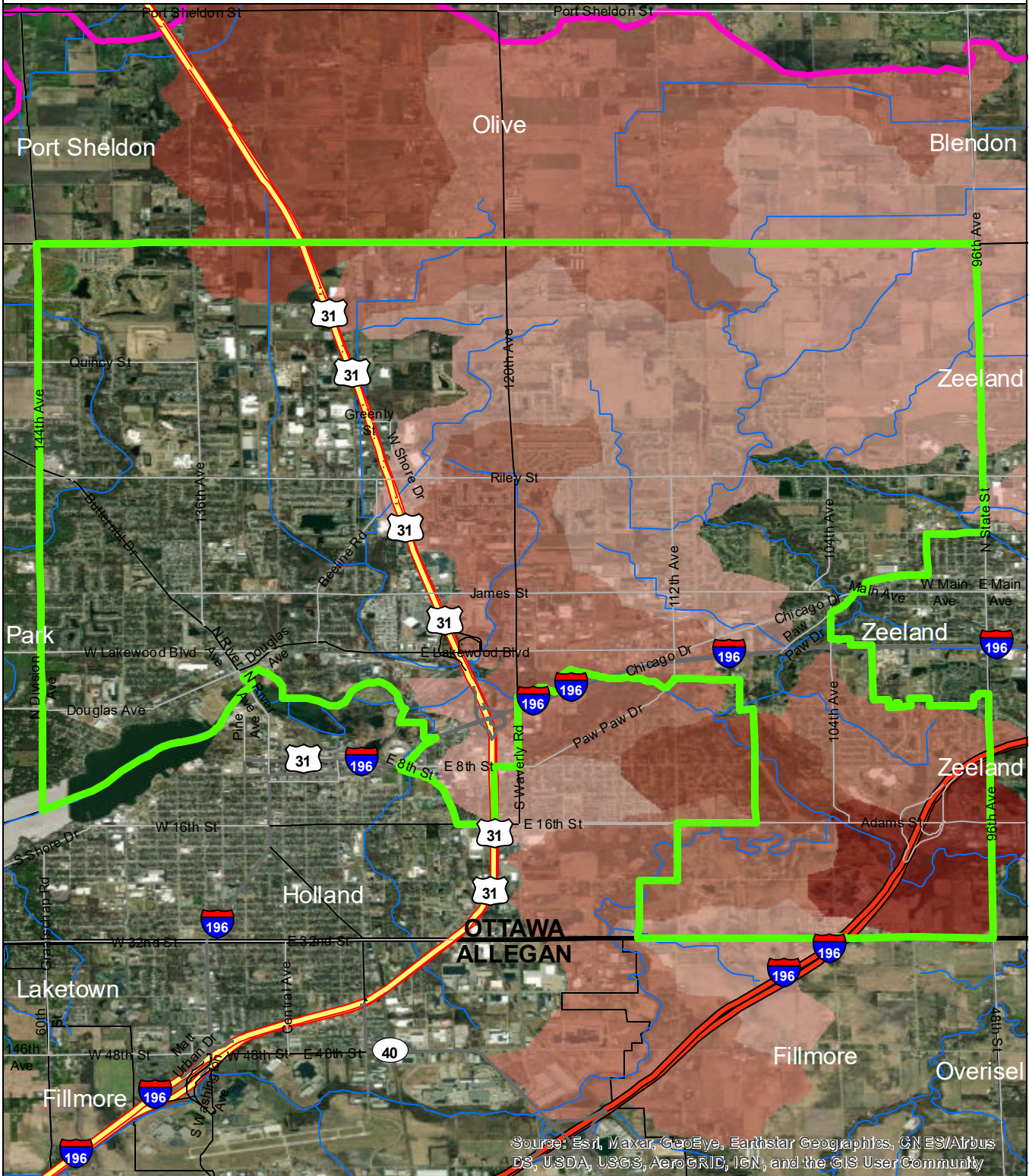


Data Sources

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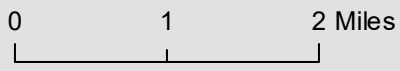
Holland Township



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

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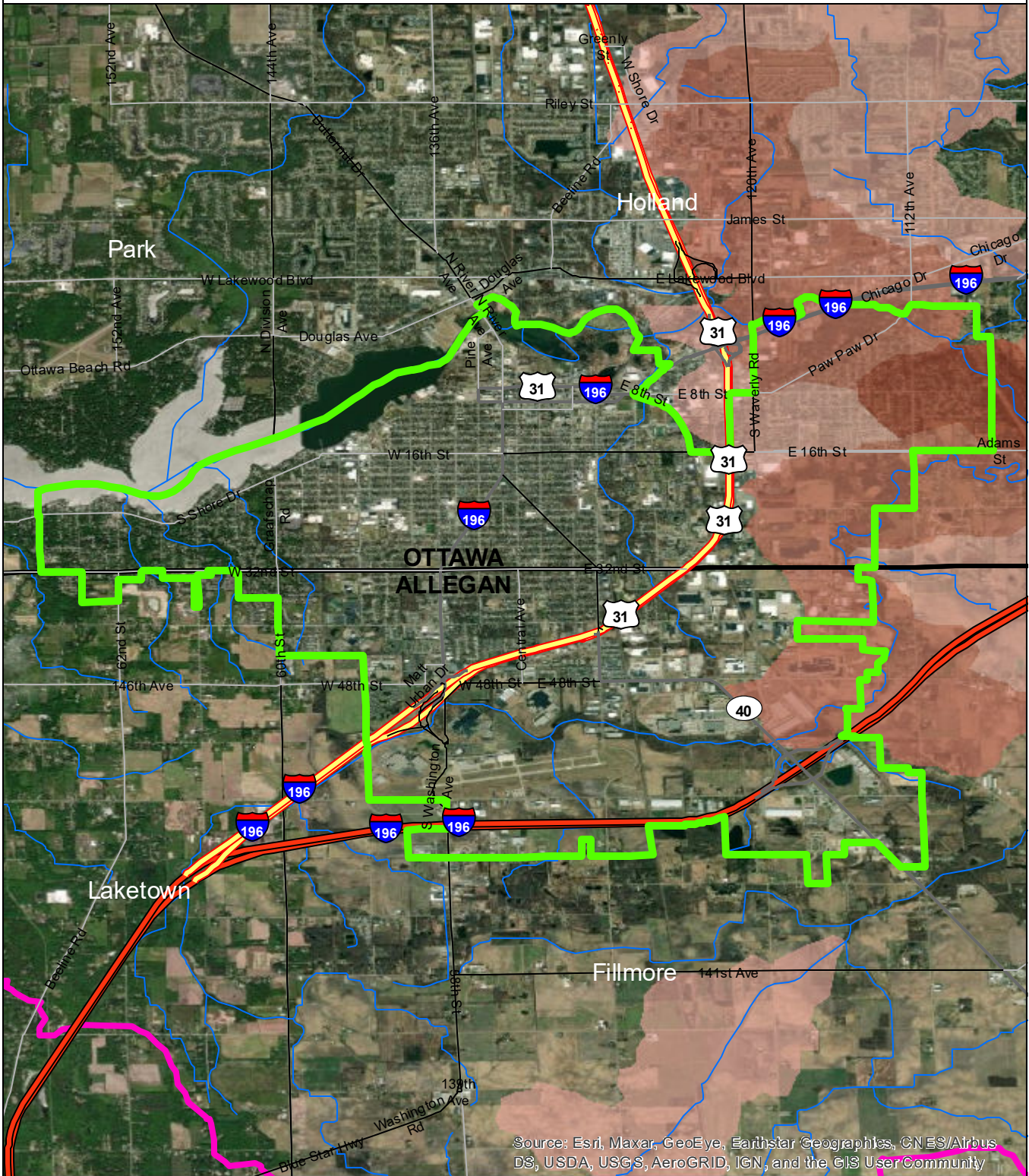
- Sediment Loading Risk**
- low
 - moderate
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 - very high



Data Sources

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

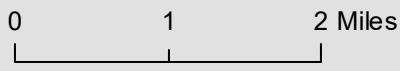


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- City of Holland
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Sediment Loading Risk

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- moderate
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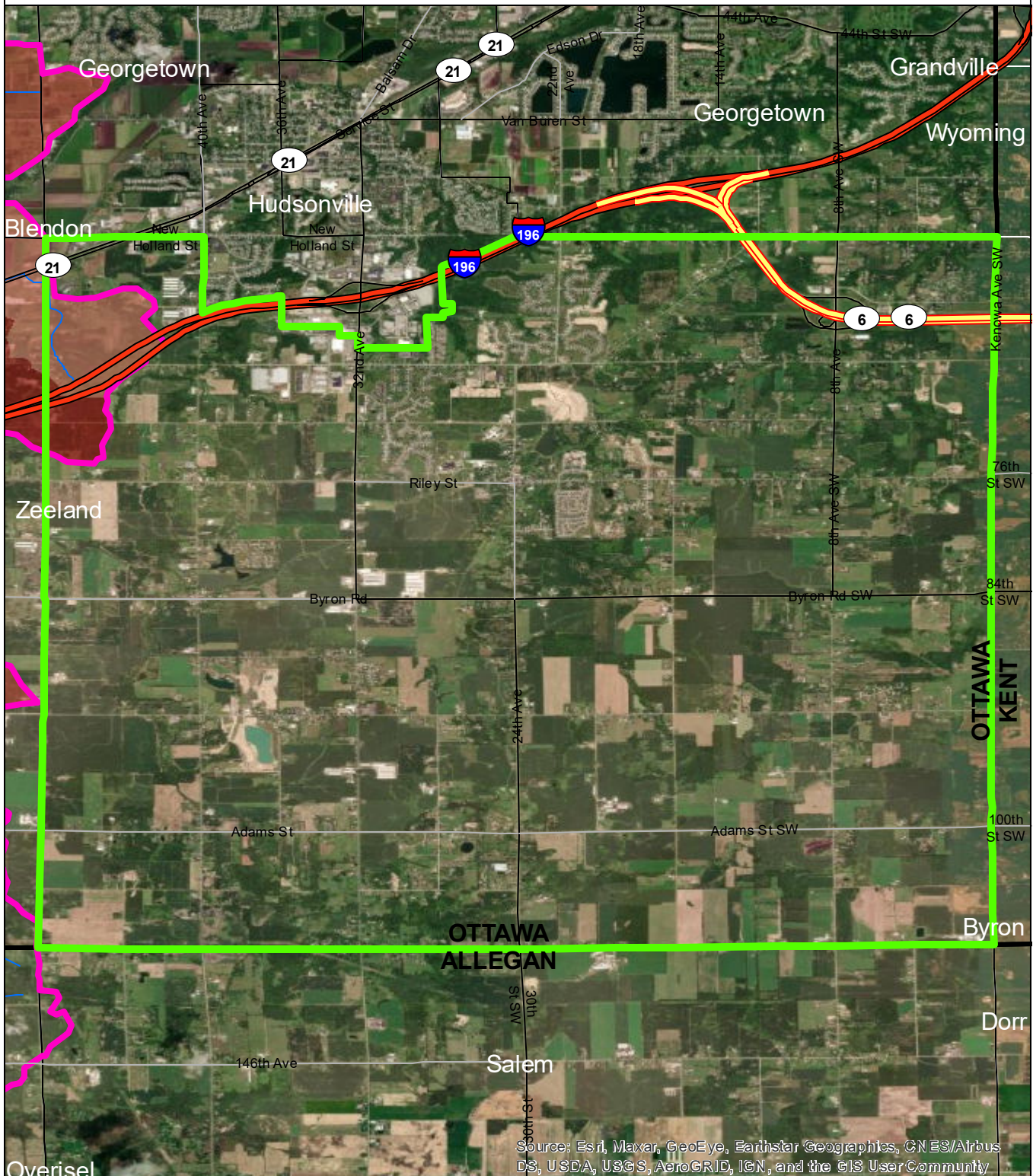
Data Sources

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

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

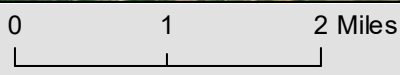
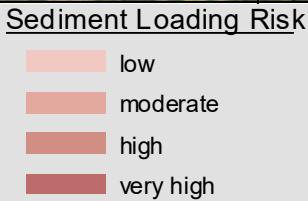


Jamestown Township



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

- Jamestown Township
- Macatawa Basin
- Counties
- Rivers and Streams
- Townships & Cities



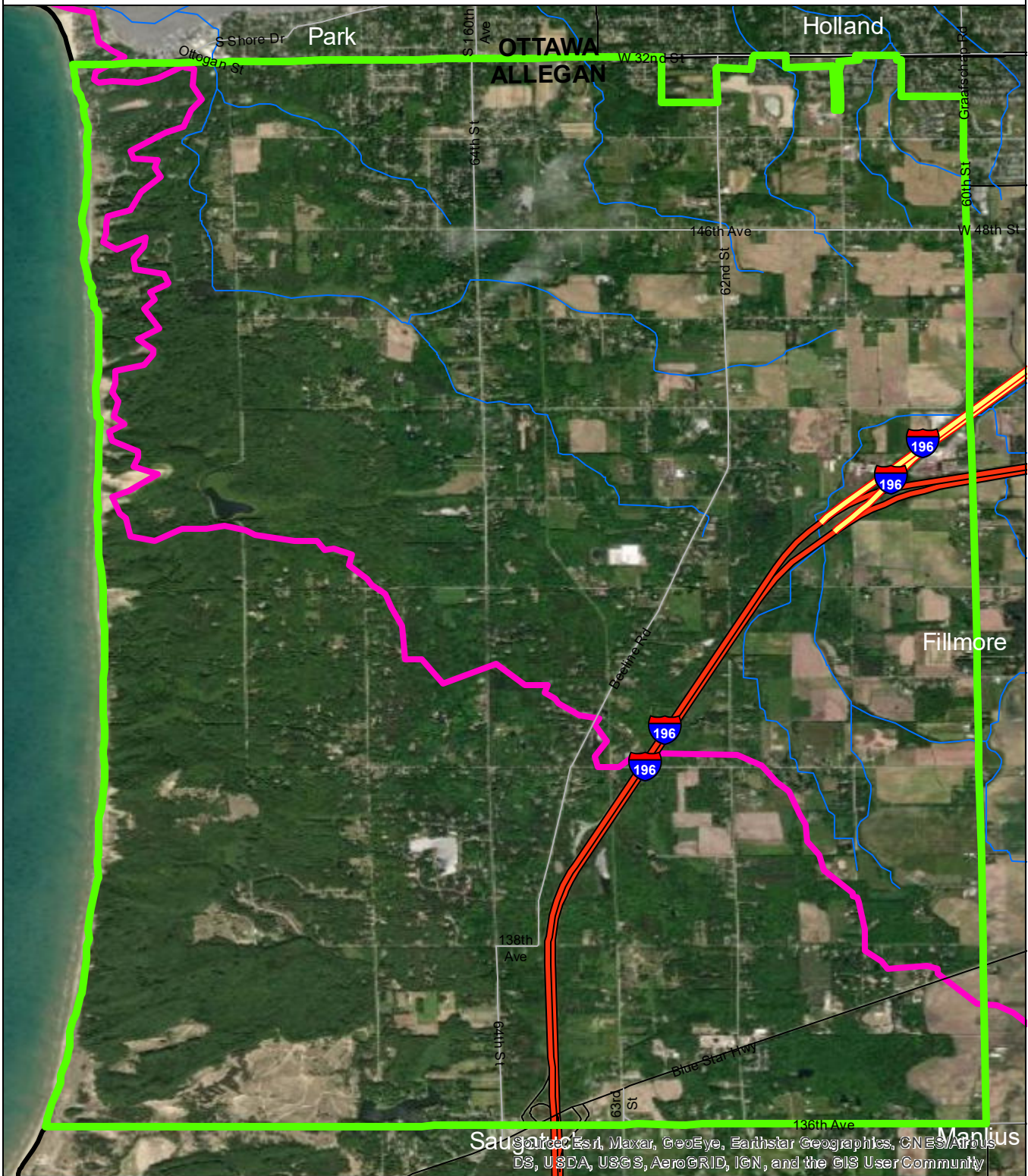
Data Sources

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

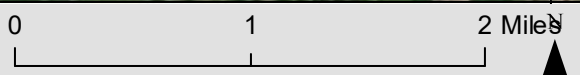
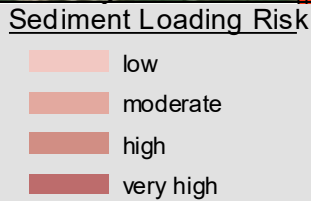
Map produced by the Institute of Water Research - Michigan State University



Laketown Township



- Laketown Township
- Macatawa Basin
- Counties
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- Townships & Cities

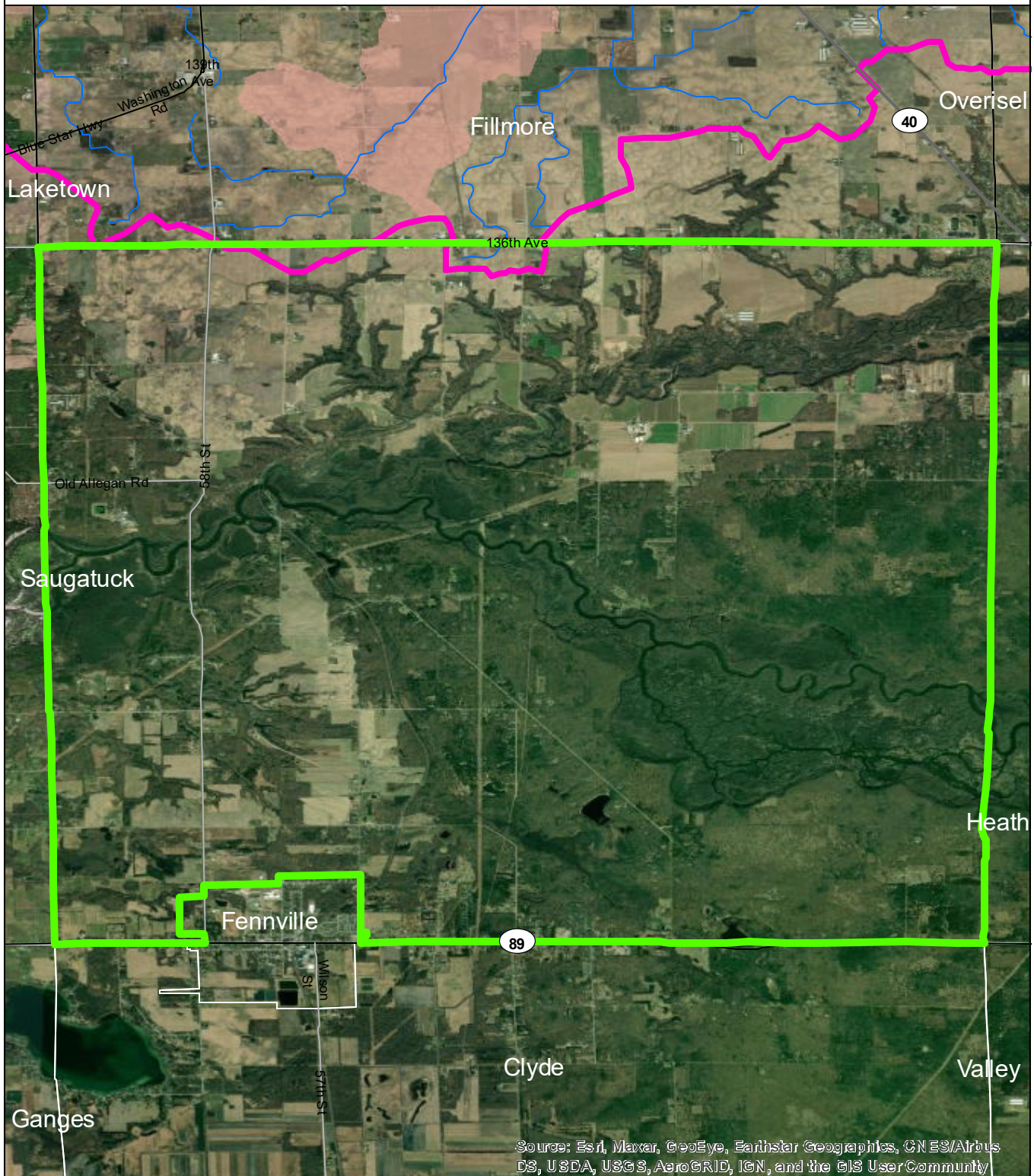


Data Sources

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

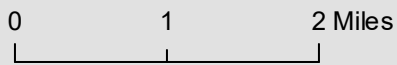
Map produced by the Institute of Water Research - Michigan State University

Manlius Township



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



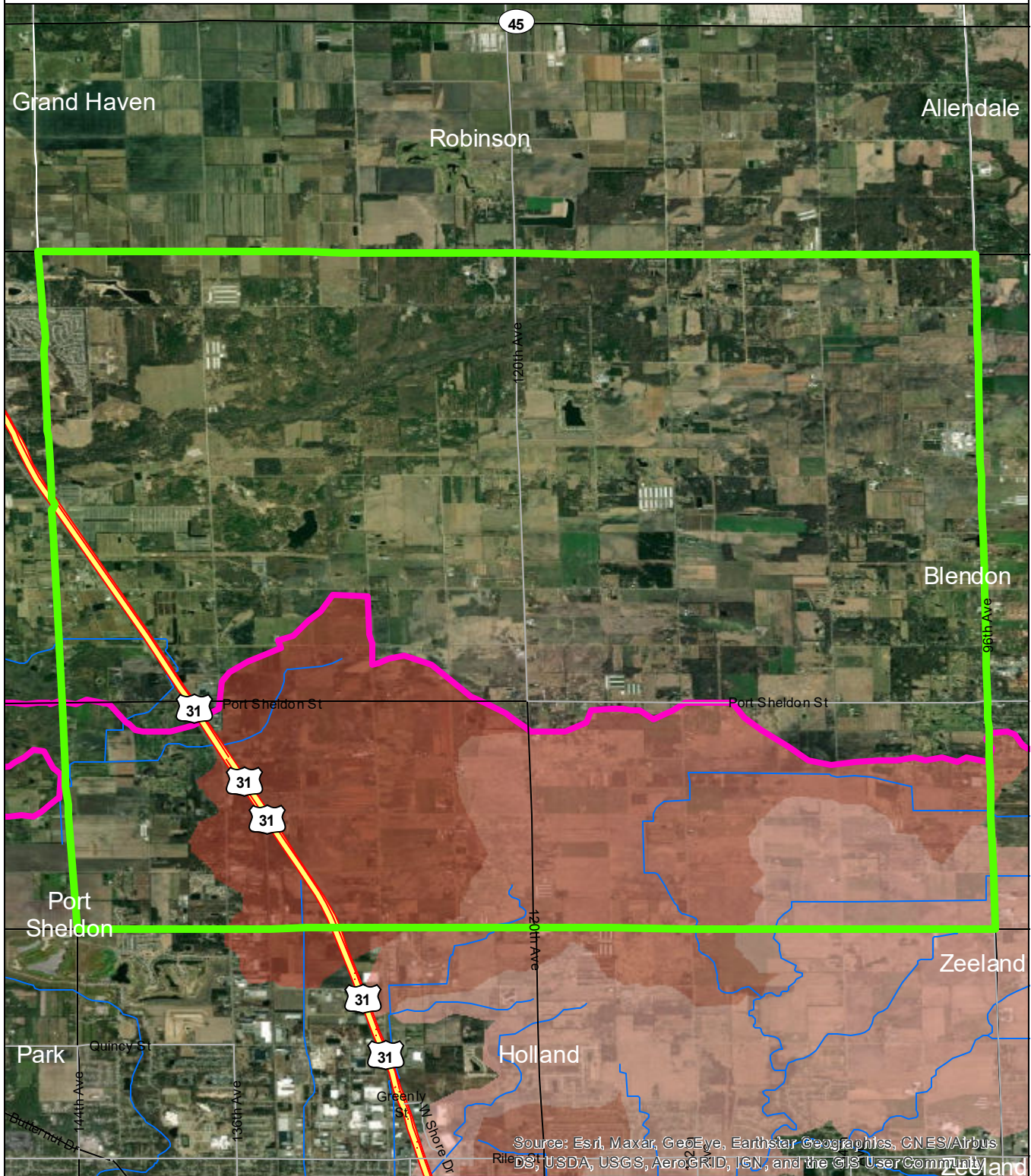
Data Sources

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






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

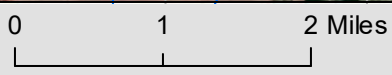
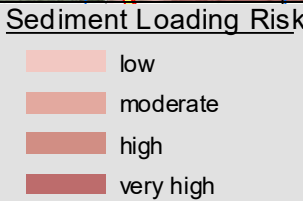


Olive Township



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

-  Olive Township
-  Macatawa Basin
-  Counties
-  Rivers and Streams
-  Townships & Cities



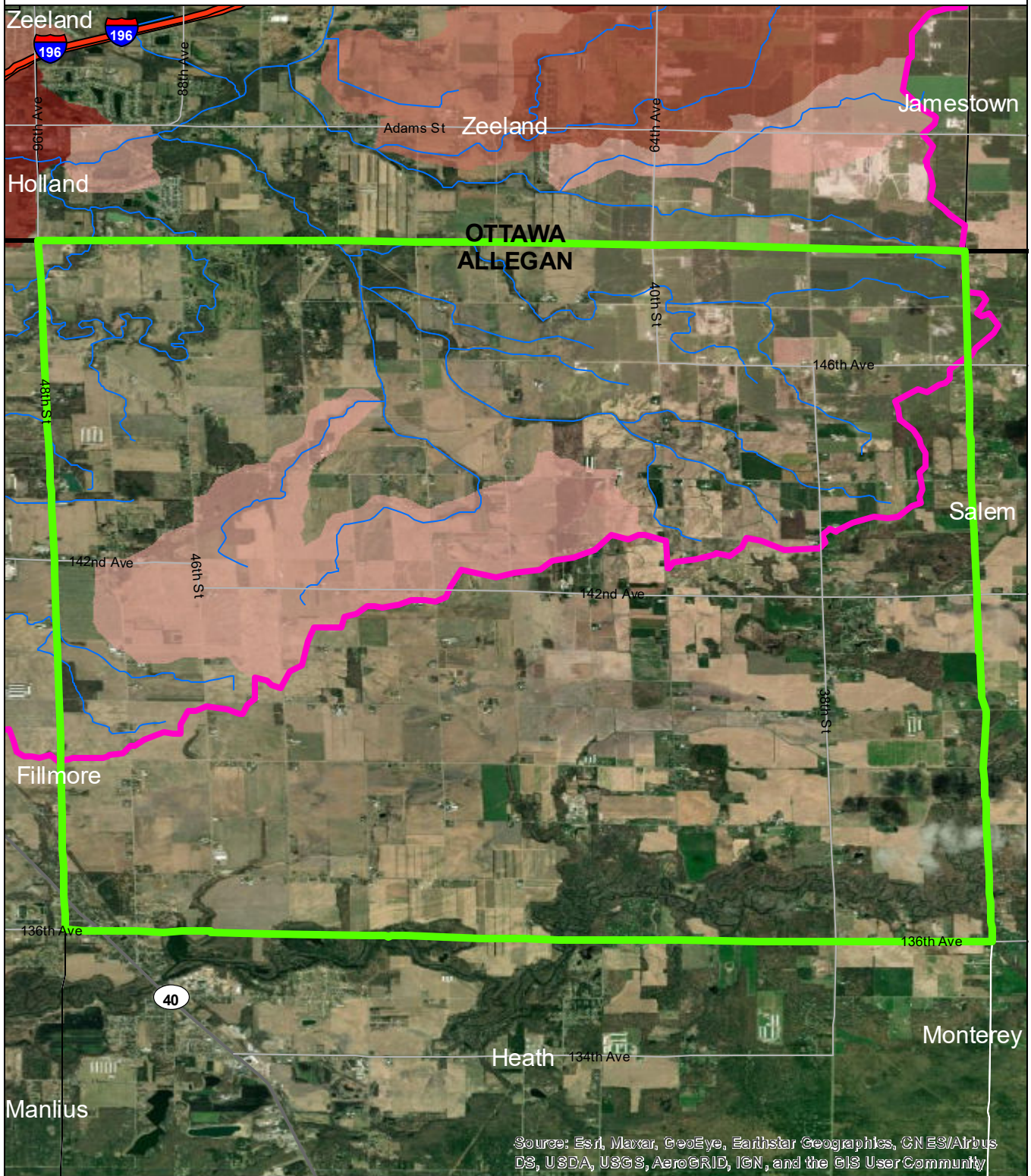
Data Sources

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

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



Overisel Township

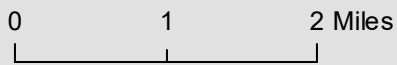


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Overisel Township
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Sediment Loading Risk

- low
- moderate
- high
- very high



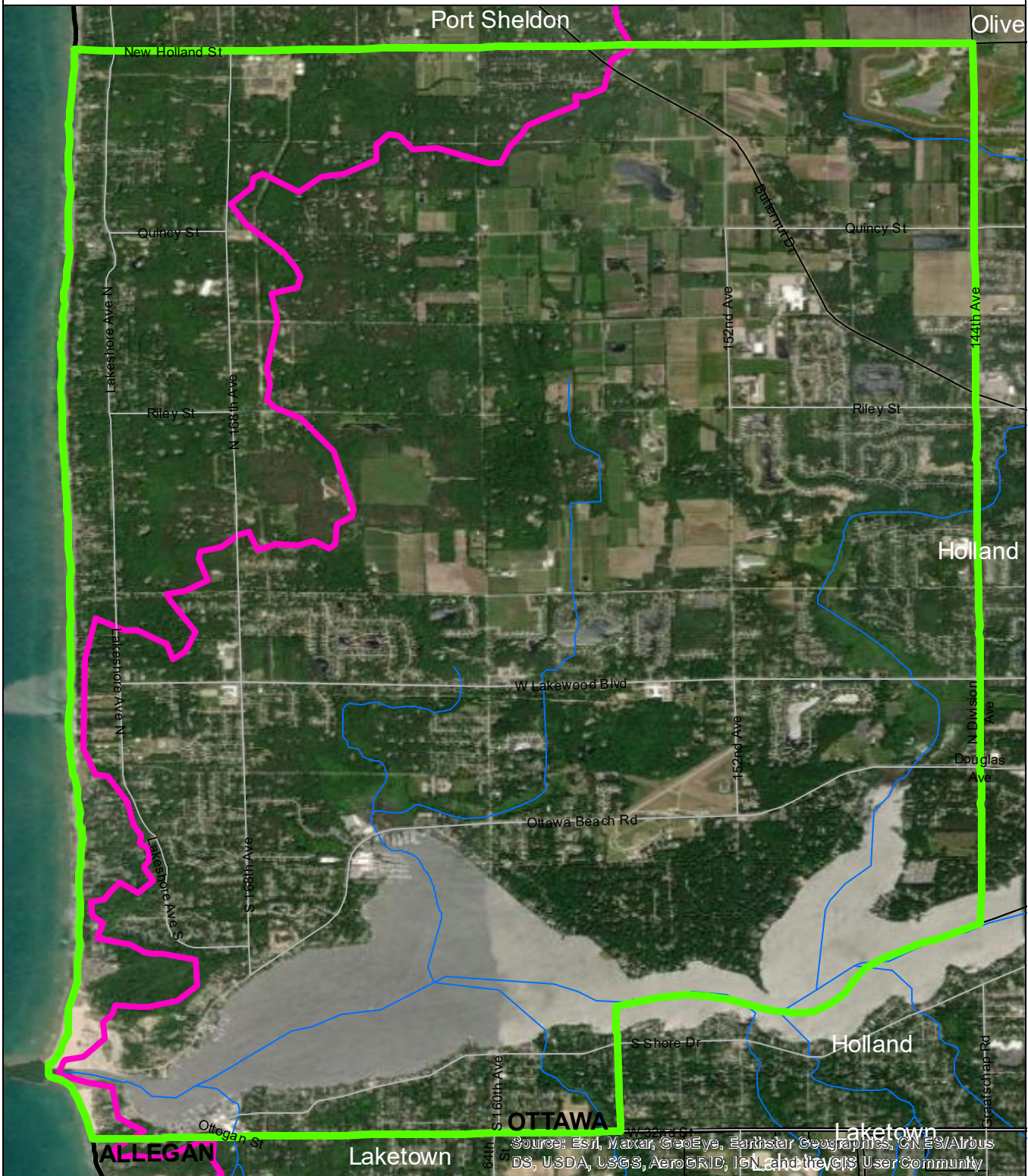
Data Sources

State of Michigan: Counties, Townships & Cities
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




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







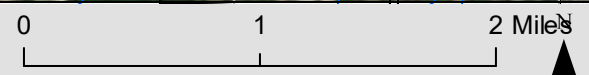
Park Township



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

-  Park Township
-  Macatawa Basin
-  Counties
-  Rivers and Streams
-  Townships & Cities

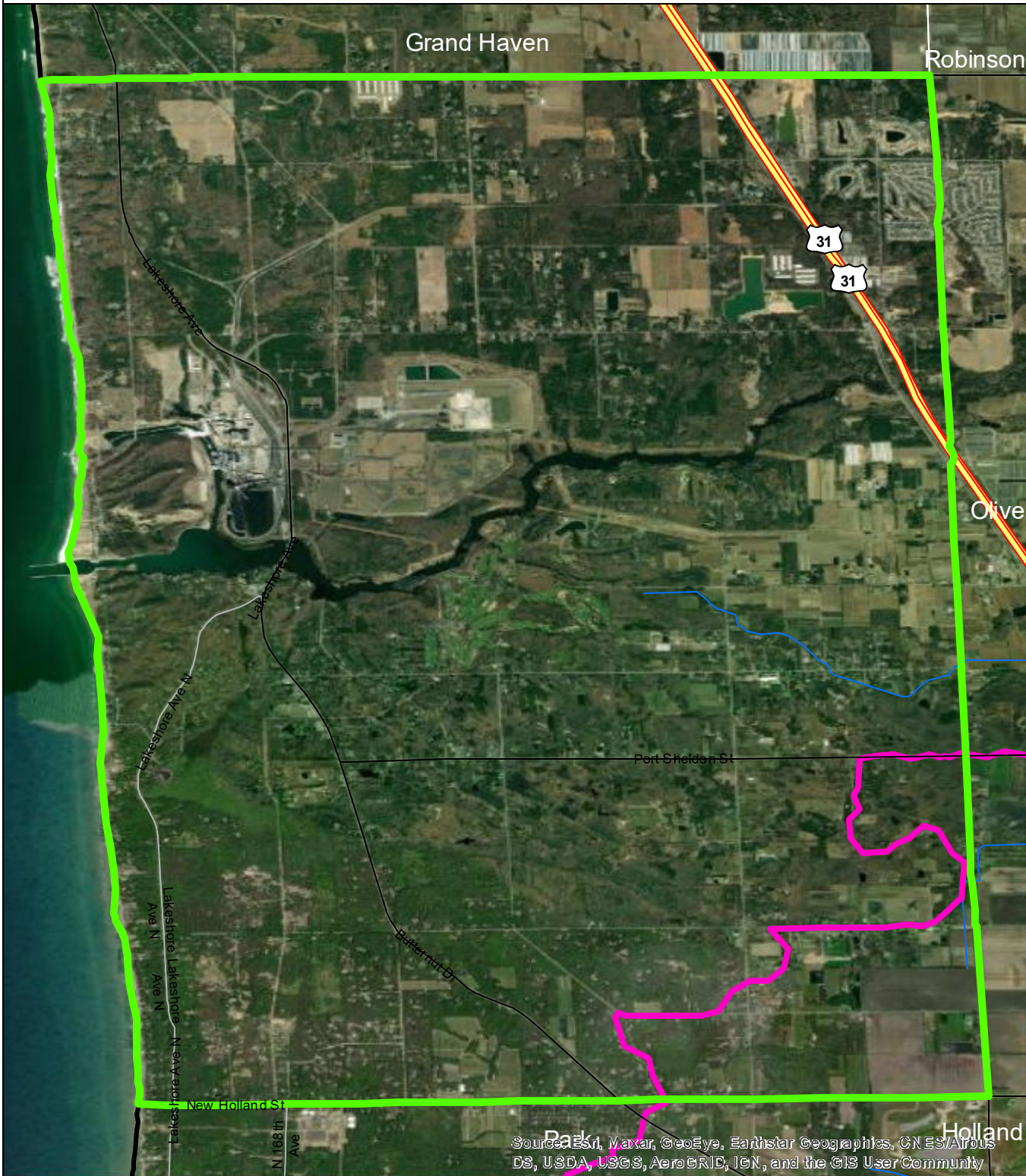
- Sediment Loading Risk**
-  low
 -  moderate
 -  high
 -  very high



Data Sources

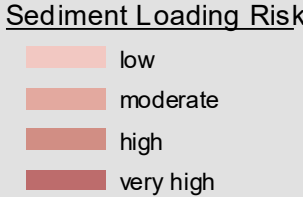
State of Michigan: Counties, Townships & Cities
 USGS: Sediment Loading Risk
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Port Sheldon Township



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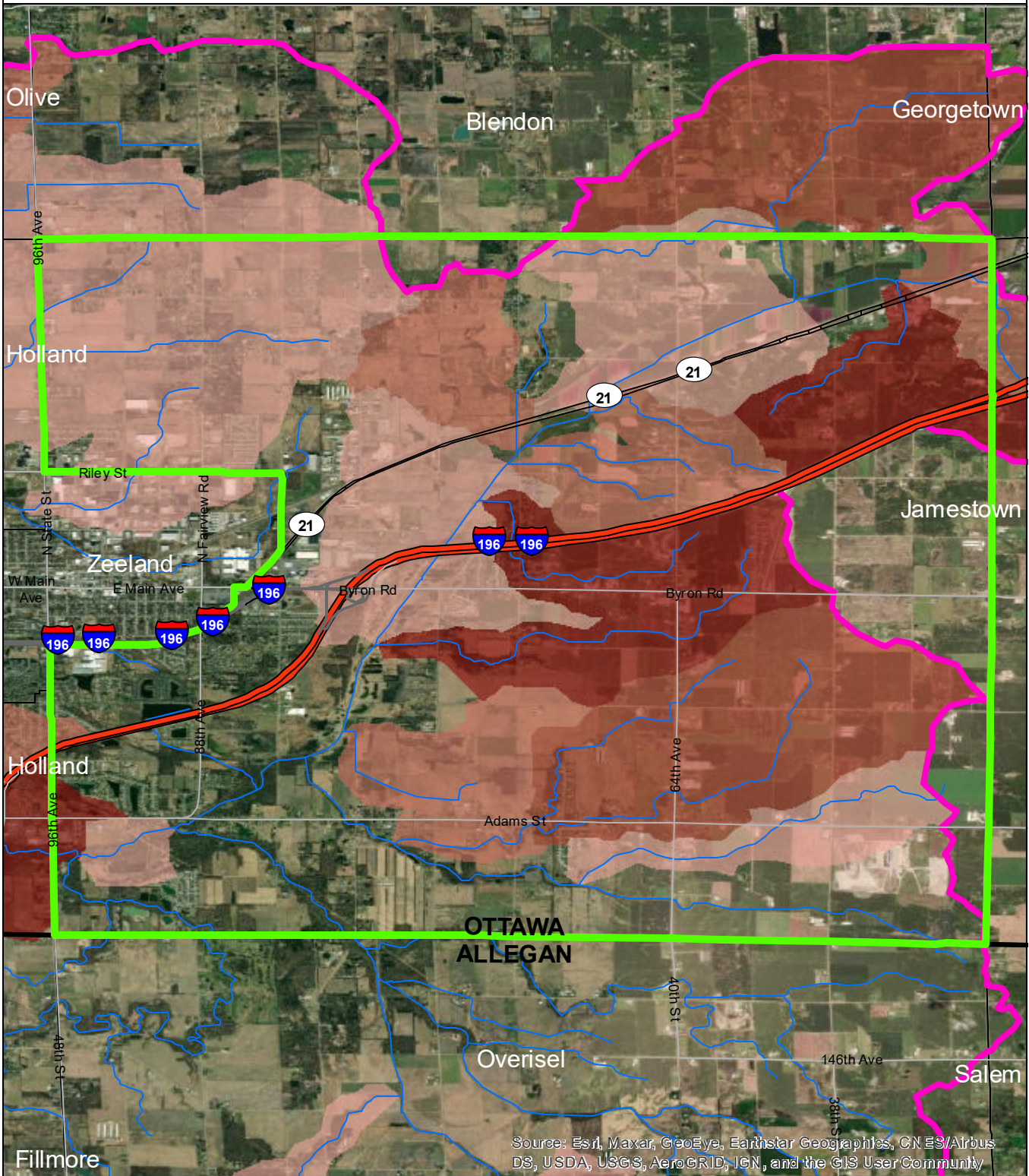
- Port Sheldon Township
- Macatawa Basin
- Counties
- Rivers and Streams
- Townships & Cities



Data Sources

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

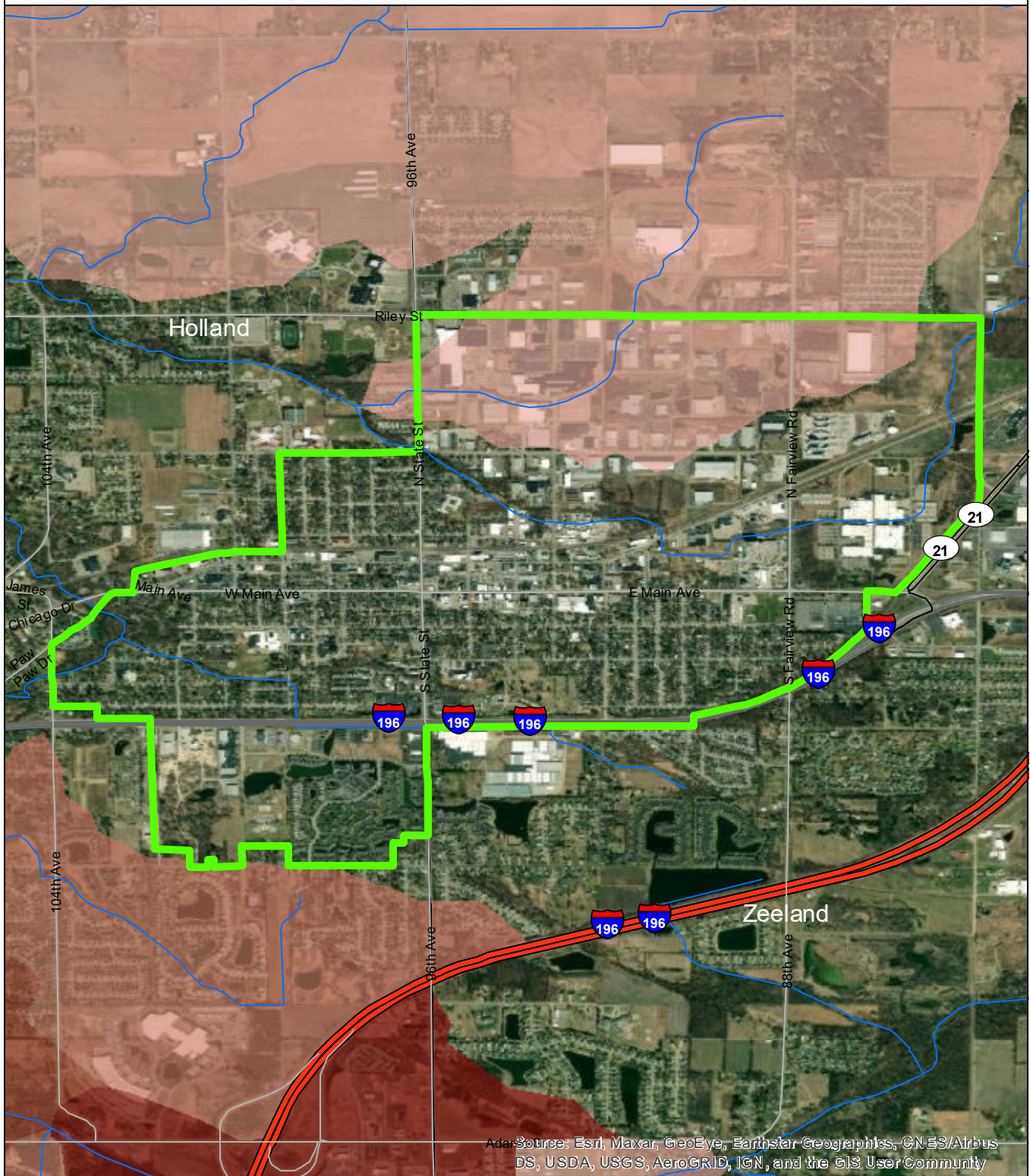
Zeeland Township



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

<ul style="list-style-type: none"> Zeeland Township Macatawa Basin Counties Rivers and Streams Townships & Cities 	<p>Sediment Loading Risk</p> <ul style="list-style-type: none"> low moderate high very high 	<p>0 1 2 Miles</p> <p>Data Sources State of Michigan: Counties, Townships & Cities USGS: Sediment Loading Risk Map produced by the Institute of Water Research - Michigan State University</p>
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City of Zeeland



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

- City of Zeeland
- Macatawa Basin
- Counties
- Rivers and Streams
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Sediment Loading Risk

- low
- moderate
- high
- very high



Data Sources

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