# 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 -

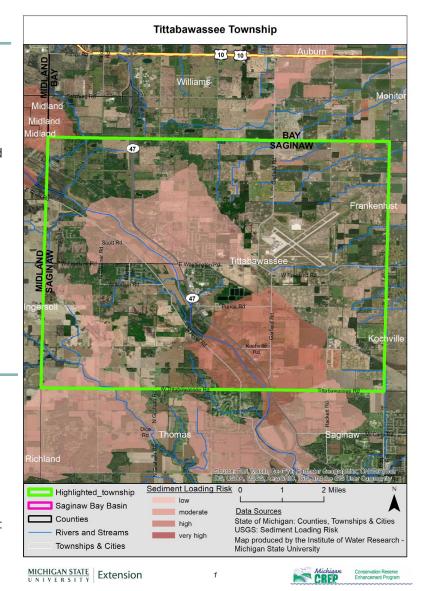
The maps are based upon data from the United States Geological Survey's (USGS) SPAtially Referenced Regression On Watershed attributes (SPARROW) model\*. The model uses observations, land use characteristics, and statistical relationships, among other variables, to estimate pollutant loads to streams 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
froncza3@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

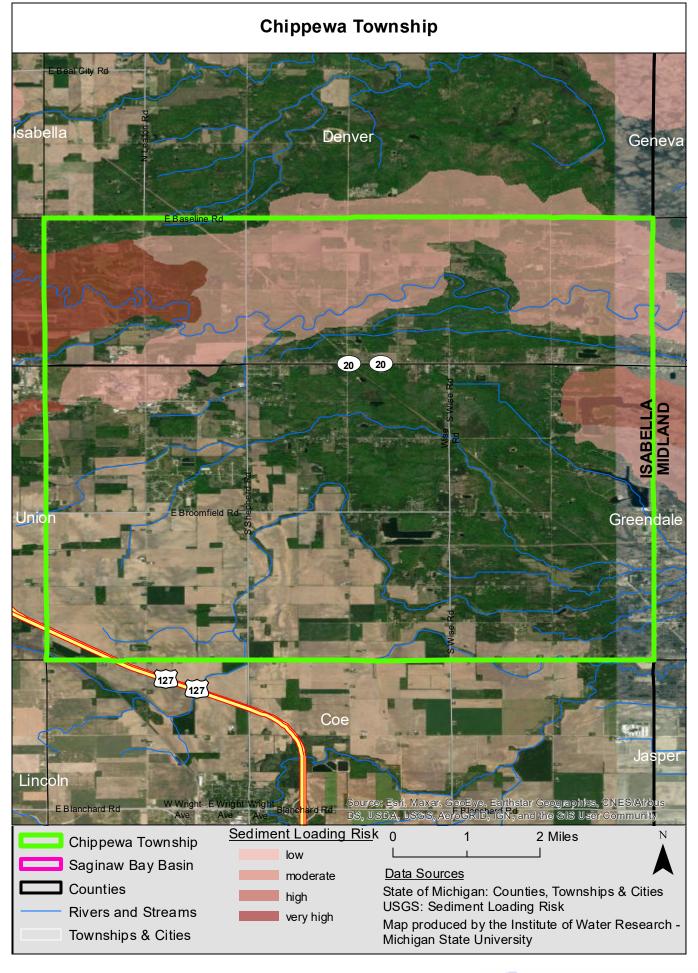


#### **Table of Contents**

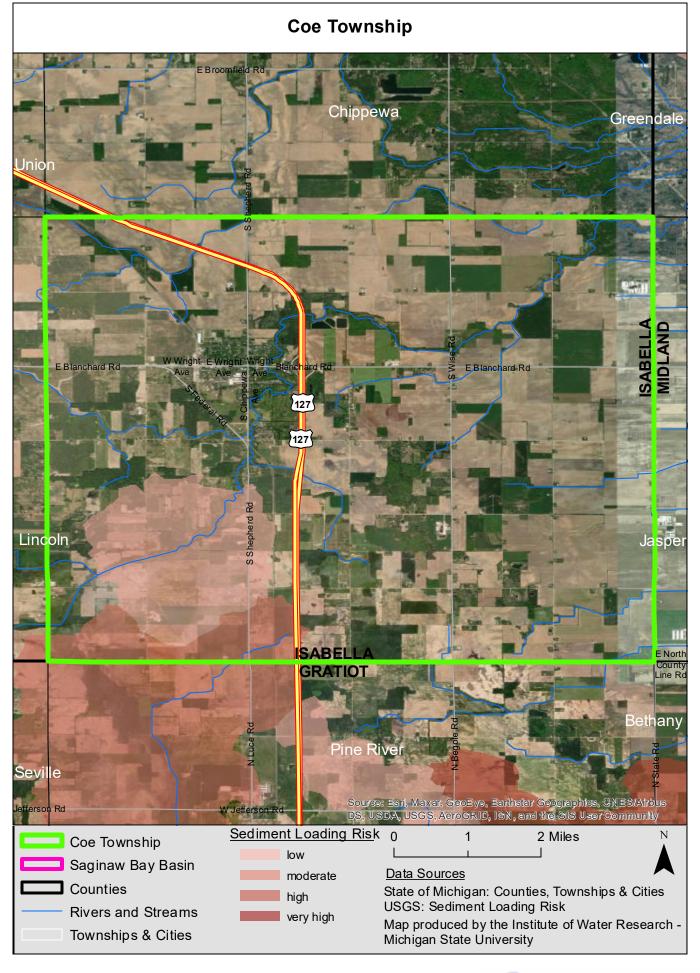
Broomfield Township
Chippewa Township
Coe Township
Coldwater Township
Deerfield Township
Denver Township
Fremont Township
Gilmore Township
sabella Township
_incoln Township ........................12
City of Mt Pleasant
Nottawa Township..........................14
Rolland Township .......................15
Sherman Township
Jnion Township .........................17
Vernon Township
Nico Township

## **Broomfield Township** Sherman Nottawa Sheridan W River Rd Deerfield Wheatland Fremont Rolland Millbrook rce: Esrl, Mayar, Geo<u>Eye, Earthstar Geographics, CN ES/Airbus</u> USDA, USOS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles **Broomfield Township** low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University











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#### **Coldwater Township** Orient Surrey Garfield Fork Gilmore 20 Mile Rd MECOSTA SABELLA Sherman Nottawa Sheridan Source: Esri, Maxar, Geollye, Earlingtar Geollymphics, CN ES/Airbus DS, USDA, USGS, Aerogric, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Coldwater Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University

#### **Deerfield Township** W Jordan Rd Nottawa Isabella Sherman W River Rd Union Broomfield Fremont incoln Rolland BlancharSource: Esrl, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Deerfield Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University

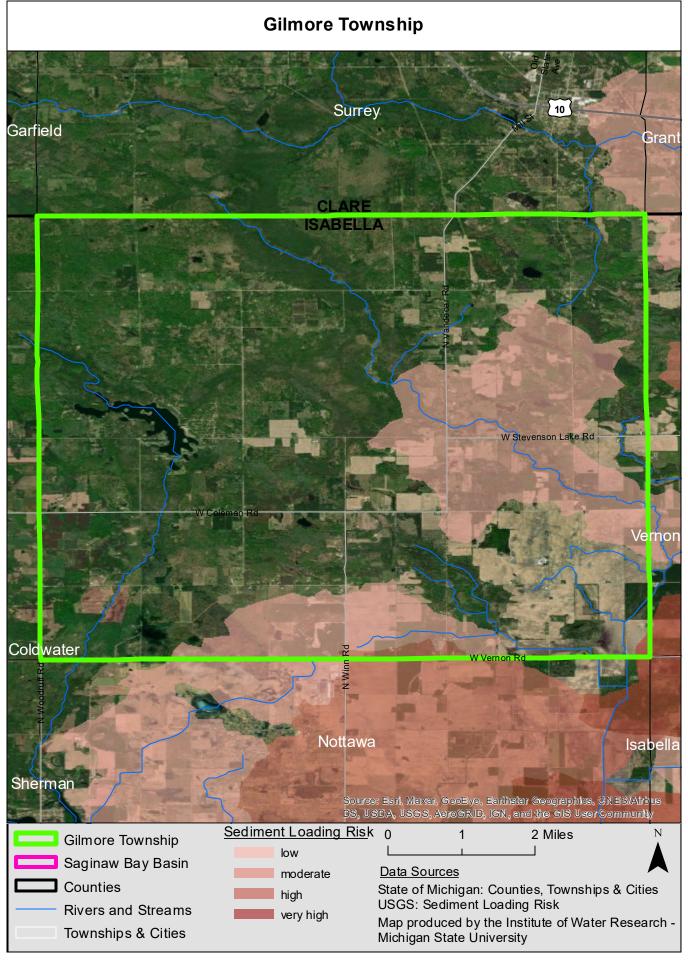


## **Denver Township** Warren /ernon ISABELLA MIDLAND BARNE E Rosebush Rd Isabella Geneva Chippewa Greendale Union Source: Esri, Maxar, Geofye, Earthstar Geographics, GN ES/Airb DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles **Denver Township** low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



# **Fremont Township** Union Deerfield Broomfield Lincoln Rolland Richland Home Sourse: Es il, Naxar, Geoeye, Earlinstar Geographics, CN ES/Airbus DS, USDA, USGS, Aero GRID, 16N, and the GIS User Community Sediment Loading Risk 0 2 Miles Fremont Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University





#### Isabella Township Wise Vernon Gilmore E Rosebush Ro 127 E Weidman Rd Denver 127 E Beal City Rd Nottawa Chippewa Union E River Rd W River Rd ncoln Rd Deerfield Mt Pleasan axar, Geollye, Earthstar Geographics 38, Aero GRID, IGN, and the GIS Use Sediment Loading Risk 0 2 Miles Isabella Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



#### **Lincoln Township** E Broomfield E Broomfield Rd W Broomfield St Mt Pleasan Chippewa Union 127 127 Deerfield Rd E Blanchard Ro Fremont Coe Seville Source: Esrl, Maxar, Geoeye, Earthstar Geographis, CN ES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Richland Sediment Loading Risk 0 2 Miles Lincoln Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



# **City of Mt Pleasant** 27 OF THE Union 20 127 E Broomfield Rd W Broomfield St E Broomfield St Source: Est, Maxar, GeoEye, Earthstar Geographics, GNES/Airbus DS, USCA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 12 Miles City of Mt Pleasant low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



#### **Nottawa Township** Gilmore Vernon Coldwater W Weidman Rd Isabella W Jordan Rd <u>Sherman</u> W River Rd Deerfield Union Source: Esri, Maxar, GeoEye, Earthstar Geographics, GN ES/Airbus DS, USDA, USSS, AeroGRID, IGN, and the GIS User Community Broomfield Sediment Loading Risk 0 2 Miles Nottawa Township low Saginaw Bay Basin moderate **Data Sources** Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



### **Rolland Township** Broomfield Wheatland Deerfield Mill<mark>b</mark>roo Fremon ISABELLA MONTCALM Richland Home Belvidere Source: Esrl, Maxer, Geoegye, Earthstar Geographics, CN ES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Rolland Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



### **Sherman Township** Coldwater Gilmore For WAirline Rd W Weidman Rd Nottawa V Drew Rd She<mark>r</mark>idan w River Rd Deerfield Broomfield Source: Est, Maxar, GeoEye, Earthstar Geographics, GN ES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Sherman Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



