

ENVIRONMENTAL MITIGATION

MAP-21

Moving Ahead for Progress in the 21st Century (MAP-21) is the new transportation legislation package, in effect at the time of writing. The bill was passed by Congress and signed into law by President Obama in July 2012. The bill replaces the extensions to SAFETEA-LU legislation that were in place during the previous long range plan update. At the same time, MAP-21 reinforces SAFETEA-LU's provisions for environmental mitigation, and in some ways increases funding avenues for environmental mitigation activities on all types of projects. While streamlining the environmental review process, MAP-21 reiterates the need, as SAFETEA-LU did, for a discussion in the planning process that addresses:

"types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. This discussion shall be developed in consultation with federal, state, and tribal wildlife, land management, and regulatory agencies."

Therefore, this chapter will serve as an introduction to a concentrated effort by the TwinCATS MPO, the SWMPC, to place greater emphasis on the environmental impact of federally funded transportation projects in the region, and to develop and maintain partnerships with private and public state and local governments/agencies and Native American Tribes who can assist in the development of the LRTP and TIP.

The TwinCATS MPO is considered to be a "small" MPO. Its federal aid STP revenues are less than \$1.5 million per fiscal year. The MPO Policy Committee has historically voted to use federal aid disbursements for rehabilitation/reconstruction projects and bus replacements. However, climate change trends, sprawling land use patterns, habitat fragmentation, and the local economy all necessitate greater integration of transportation planning with general land use planning. The following paragraphs describe the efforts of SWMPC to assess potential environmental impacts of the projects in the LRTP as well as a description of potential mitigation activities. This document is intended to be a work in progress, rather than a static or exhaustive description of transportation-related environmental considerations.

It is important to note that in order to develop this chapter, and assess potential environmental impacts of TwinCATS LRTP projects, the SWMPC used a consultation process to enlist the assistance of many partners and complete the following steps:

1. SWMPC consulted with submitting agencies to review projects listed in the current LRTP. Agencies were asked to verify that projects were not adding capacity, altering traffic patterns, and were within the existing right-of-way.
2. In order to develop the environmental mitigation maps, agencies such as the Southwest Michigan Land Conservancy, the Nature Conservancy, and the Berrien County Planning Department, shared data files with SWMPC. SWMPC environmental planners assisted in identifying important environmental features, in developing buffer sizes, and in reviewing the plan. Environmental mitigation maps are located in Appendix J.

Based on guidance from local FHWA representatives, a list of projects from the LRTP was sent to each agency that submitted a project. Agencies that applied for projects were asked on their applications whether their projects would expand traffic capacity. In addition, agency contacts were asked to review each of their projects and determine responses to the following four questions:

- Will this project alter traffic patterns?
- Are all proposed improvements in the existing right-of-way?
- Is the project resurfacing, safety, bus replacement, etc.?

A list of the projects submitted to the local agencies, as well as their responses, are located in Appendix J.

In general, the projects proposed for LRTP are resurfacing/reconstruction projects that were entirely within the existing right-of-way, and even those projects that required new right of way did not add capacity or alter traffic patterns. One proposed project, the Botham Avenue Reconstruction Project in St. Joseph, involves simultaneous expansion of the water distribution system, as part of a local water distribution plan.

A possible project that may eventually expand traffic capacity in the region is the US-31 freeway. The US-31 Freeway project in Berrien County has been under development for over 30 years. The objective of the project has been to provide a freeway from the Indiana-Michigan border (and the Interstate 80 toll road to the south) to a logical terminus at the I-94/I-196 interchange. This freeway has been constructed up to Napier Avenue, and the current US-31 Freeway Connection to I-94 project seeks to provide a cost effective and environmentally sensitive alternative to complete the segment of US-31 between Napier Avenue and I-94.

According to MDOT, as of March 2013, the US-31 interchange project remains a deferred project. MDOT has completed design and plan review, and is acquiring real estate in the right-of-way per design requirements. Since design completion, no further progress has been made because of the absence of the funding needed to proceed with construction. MDOT's focus since 2004 has been on system preservation, leaving little funding available for new freeway construction. For more information on the US-31 connection to I-94 project, visit the project specific website:

http://www.michigan.gov/mdot/0,1607,7-151-9621_11058_22860---,00.html

Assessing Impact: Define and Inventory Environmentally Sensitive Areas

In addition to the examination of LRTP projects, the SWMPC staff have begun to identify environmentally and historically/culturally sensitive areas within the TwinCATS boundaries through a collaborative process. Features identified include the following:

- Floodplains
- Wetlands
- Potential conservation areas
- Parks, trails, and other recreational lands(not including golf courses or camps)
- Cemeteries
- Other conservation easements
- Aquifer recharge areas
- Other water features (lakes, ponds, rivers, coldwater streams, and county drains)
- Woodlands
- Well heads
- Cultural, historical, archeologically significant sites
- FEMA-identified flood plain areas

MPO staff utilized GIS software to map the sensitive areas along with the 2040 LRTP projects. Each project was mapped with a buffer, depending on the type of environmental resource¹, to show the potential area that could be affected. Water features, wetlands, floodplains, and woodlands sites were given a buffer size of 1,320 feet, or one-quarter mile. Parklands, cemeteries, conservation easements, and cultural sites were given a 250 foot buffer.

¹ Project type was not considered to be a substantial factor in determining buffer size because projects listed in the LRTP, with the exception of US-31, are rehabilitation, resurface, or reconstruction projects.

Findings

The environmental assessment included in this document is intended to serve as an initial screening of each transportation project's proximity to sensitive environmental features and is to be used to prevent potential negative impacts to the environment. The spreadsheet and maps found in this section demonstrate the results of the feature identification and draw attention to areas to be examined further at the project level. The spreadsheet and maps indicate which projects are adjacent to various environmental features, but do not identify the level of potential impacts. Project-level environmental impact assessments go into far greater depth when these impacts may be more pronounced. The Appendix of this section contains maps of environmentally-sensitive areas throughout the region.

All of the proposed transportation projects listed in the spreadsheet are adjacent to at least one environmental feature. Woodlands, wetlands, aquifer recharge areas, floodplains, and well locations were the most common features to fall within project buffers. The least common features within project buffers were cemeteries and areas of cultural significance. Depending on the project, environmental features may need to be studied further, in order to develop project-level mitigation strategies to minimize any possible negative effects on the environment. Environmental features also may influence transportation project timing and costs.

It is important to note that the features identified are not an all-inclusive list, nor is this environmental assessment considered completed. Mapped features included are those for which data were readily available. Environmental assessment will be an ongoing process, and future long range planning will reflect a continued effort to expand the scope of this effort.

Assessment of Culverts and Stream Species Protection

With any road or bridge project, it is critical to pay special attention to the impact of culverts and other potential barriers to species movement in streams and creeks, particularly native fish. The movement of these species happens as part of their lifecycle and in response to varying environmental conditions of certain sections of the watershed. Impediments to movement can potentially reduce fish populations and impact the entire river ecosystem. A 2011 study by the Potawatomi Resource Conservation and Development Council conducted an inventory of culverts and dams in the St. Joseph River watershed to

determine the extent of adverse impacts of infrastructure on native fish species in high priority water streams.

Four creeks that are at least partially within the TwinCATS region were part of the survey: Blue Creek, Yellow Creek, Love Creek and Pipestone Creek. Maps of these streams from the study are provided in the Appendix ____.

The main potential barriers to species movement within the TwinCATS area appear to be culverts, which are drains that allow water to flow under a road or railroad. According to the 2011 study, the vast majority of the culverts observed in the TwinCATS area do not completely stop fish movement. However, with the exception of a long stretch of Yellow Creek in St. Joseph Township and Royalton, most of the culverts currently in place do block at least some fish species movement.

The study was designed to be an inventory that would serve as a starting point for federal, state, regional, local, and tribal governments to work in cooperation with one another and with environmental organizations in the area to identify problematic culverts and allow better fish movement throughout the creek. While many of the suggested actions focus on removal of dams, the study suggests that installing culverts in the proper position on a streambed, and making sure that they are the right size, will both promote better movement of species throughout the watershed.

PHOTO OF PROPERLY SIZED CULVERTS NEEDED

Mitigation Guidelines

Each project, of any type, proposed in the LRTP should be examined for potential environmental impacts prior to being programmed into the TIP. This is particularly important in an area like the Twin Cities area where natural features are abundant and important to residents. Because each TwinCATS project was adjacent to at least one environmental feature, it is important to implement planning and construction practices that will protect the natural environment and cultural resources. The following are general guidelines that, if implemented, will help to ensure solid planning practices and enhance the general quality of life within the TwinCATS boundaries.

Planning and Design Guidelines

- Use Context Sensitive Solutions (CSS) throughout the planning and project development process, beginning as early as possible. CSS is a collaborative process that is designed to solicit public and stakeholder input when developing transportation projects.
- Identify the area of potential impact connected to each transportation project, including the immediate area as well as related project development areas.
- Regularly update the environmental features inventory to determine if any environmentally sensitive resources could be impacted by the project.
- Coordinate the LRTP with the County Hazard Mitigation Plan.
- Coordinate transportation projects with local plans, such as comprehensive plans, watershed management plans, recreation plans, etc.
- Regularly collaborate and meet with local community officials and other relevant stakeholders to discuss environmental issues and goals.
- Where impacts are unavoidable, mitigate them to the fullest extent possible.
- Incorporate stormwater management into design using a “green streets concept” that takes into account landscaping needs and existing runoff issues.
- Promote public education on protecting sensitive features in land use planning.

Construction and Maintenance Guidelines

- Include all special requirements that address environmentally sensitive resources into plans and estimates used by contractors and subcontractors.
- Distribute information regarding activities prohibited in environmentally sensitive areas.
- Minimize construction and staging areas with clearly marked boundaries.
- Utilize the least intrusive construction techniques and materials.
- Avoid wetlands.
- Avoid disturbing the site as much as possible.
 - Protect established vegetation (especially tree and drip zones, where tree roots are located) and habitat. If disruption is unavoidable, replace with native species as soon as possible.
 - Implement sediment and erosion control techniques.
 - Do not stockpile materials in sensitive areas.

- Protect water quality by controlling runoff, regularly sweeping streets, protecting storm drains from construction debris, and implementing salt management techniques.
- Protect cultural and historic resources, including surrounding soils and materials.
- Minimize noise and vibrations.
- Provide for solid waste disposal
 - Use the least hazardous substances possible, and ensure that such substances are properly handled, stored, and disposed.
- Keep construction activities away from wildlife crossings and corridors.
- Reduce land disturbances through efficient organization of construction activities
- Avoid equipment maintenance, fueling, leaks, spraying, etc. near sensitive areas.
- Incorporate Integrated Pest Management techniques if pesticides are used during maintenance.
- Properly size and place culverts to ensure fish passage and reduce erosion.
- Conduct on-site monitoring during and immediately following construction to ensure that environmental resources are protected as planned.
- Utilize buffer strips to protect sensitive features, especially wetlands.
- Where possible, realign/design routes or interchanges to protect sensitive features, especially wetlands.
- Consider alternatives to capacity expansion.
- Promote proactively restoring sites/building corridors and wildlife during road projects.

It is important to note that these guidelines are suggested as steps to mitigate potentially harmful effects of transportation projects on the natural environment. The SWMPC has no authority to require implementation of these guidelines. However, this information is intended to inform the construction process, from planning to implementation, and to ensure better coordination with general land use planning practices.²

Low Impact Development

² AASHTO Center for Environmental Excellence. Environmental Stewardship Practices, Procedures, and Policies for Highway Construction and Maintenance. http://environment.transportation.org/environmental_issues/construct_maint_prac/compendium/manual/
 GVMC. 2035 Long Range Transportation Plan for the Grand Rapids Metropolitan Area. Draft Document February 1, 2007.
 SEMCOG. Integrating Environmental Issues in the Transportation Planning Process. Guidelines for Road and Transit Agencies. January 2007.

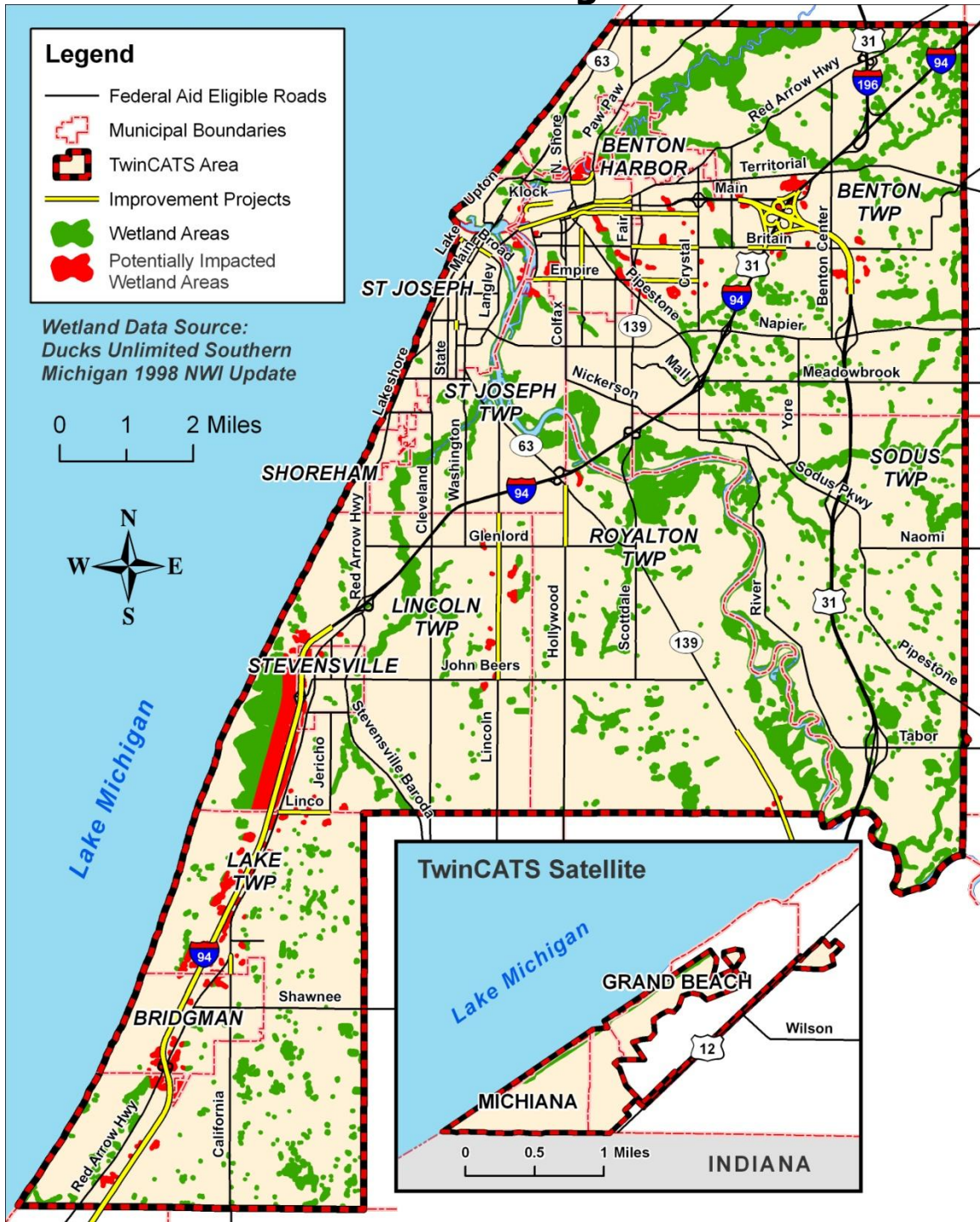
Proper planning of new developments and major reconstructions can help to minimize the negative impacts, and in some cases effect create positive impacts, of these developments on water quality. The Low Impact Development (LID) Manual for Michigan promotes development that:

- Preserves open space and minimizes land disturbance
- Protects natural systems and processes (drainage ways, vegetation, soils, and wetlands)
- Reexamines the use and sizing of traditional infrastructure (lots, streets, curbs, gutters, and sidewalks) and customize site design.
- Incorporates natural site elements (wetlands, stream corridors, mature forests) as design elements

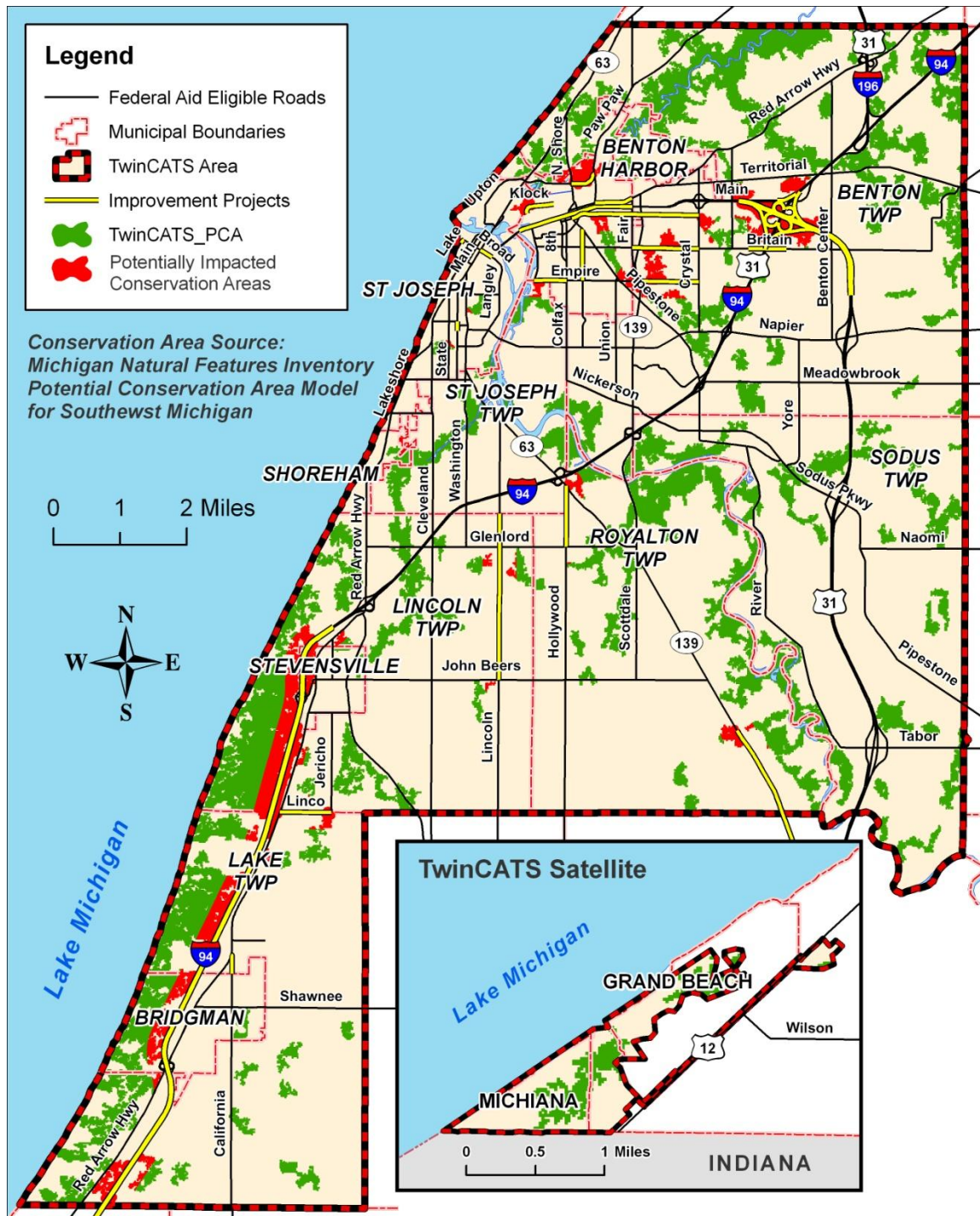
Decentralizes and micromanages stormwater at its source Appendix J.

Environmental Mitigation Maps and Table

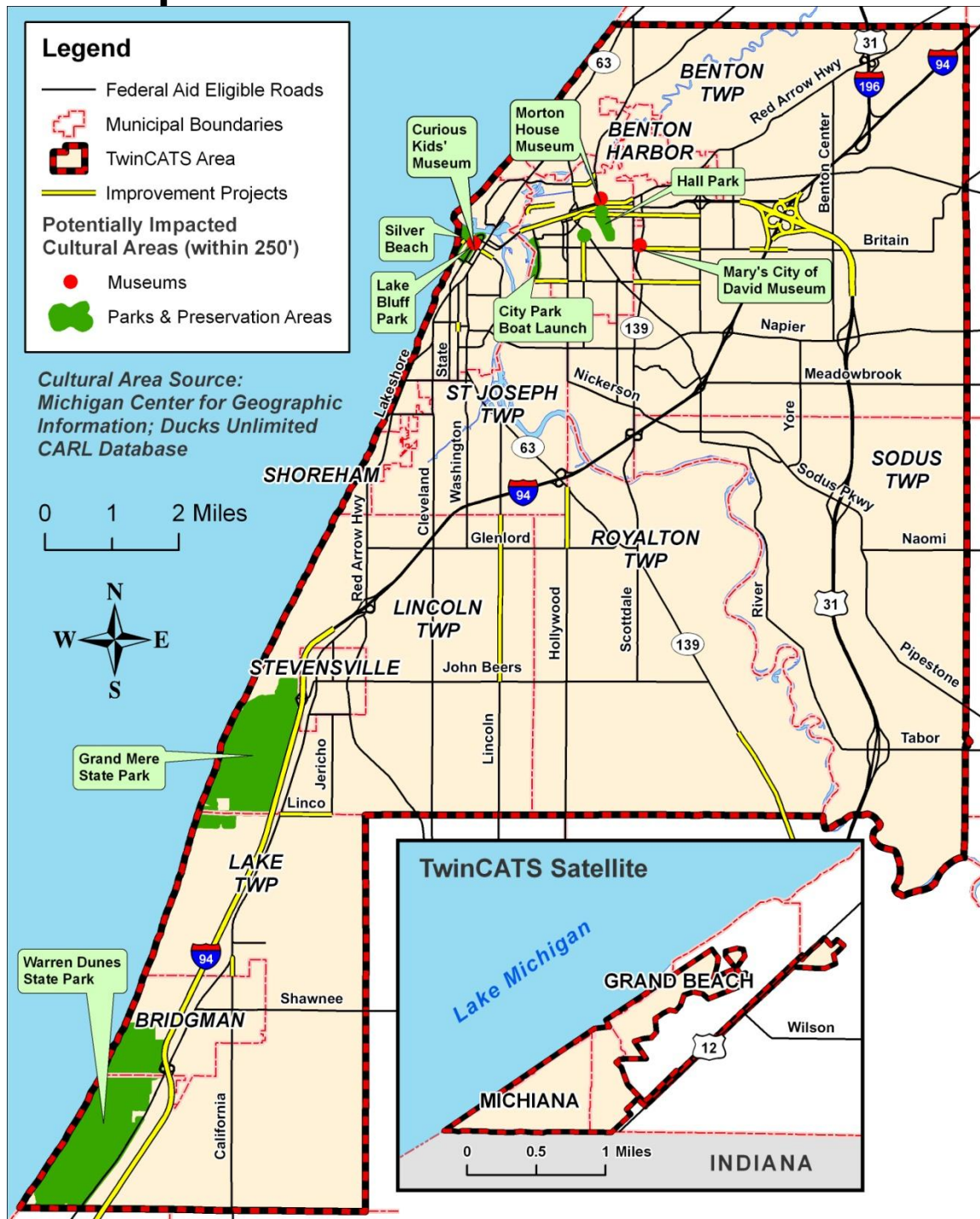
TwinCATS Environmental Mitigation Wetland Areas



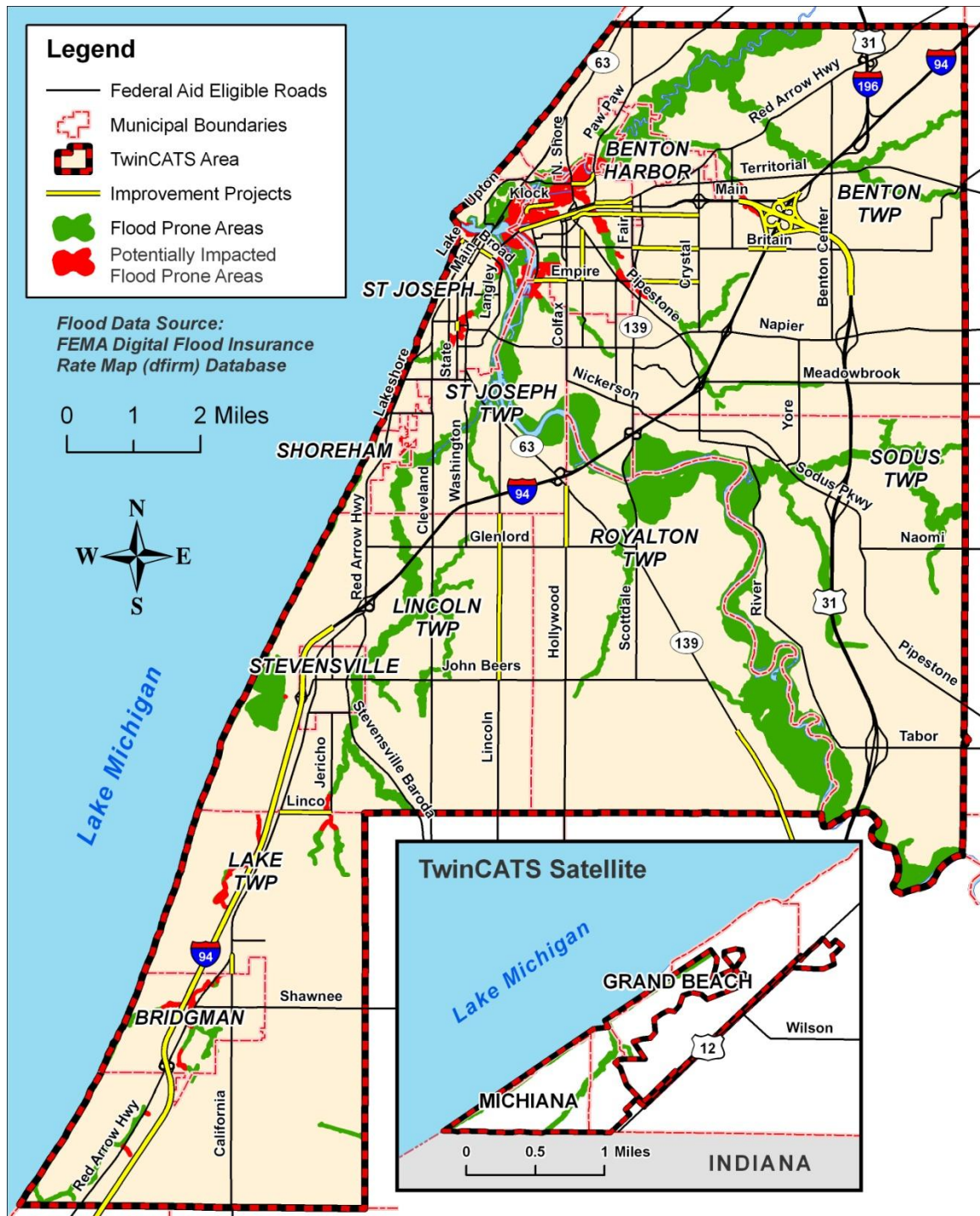
TwinCATS Environmental Mitigation Conservation Areas



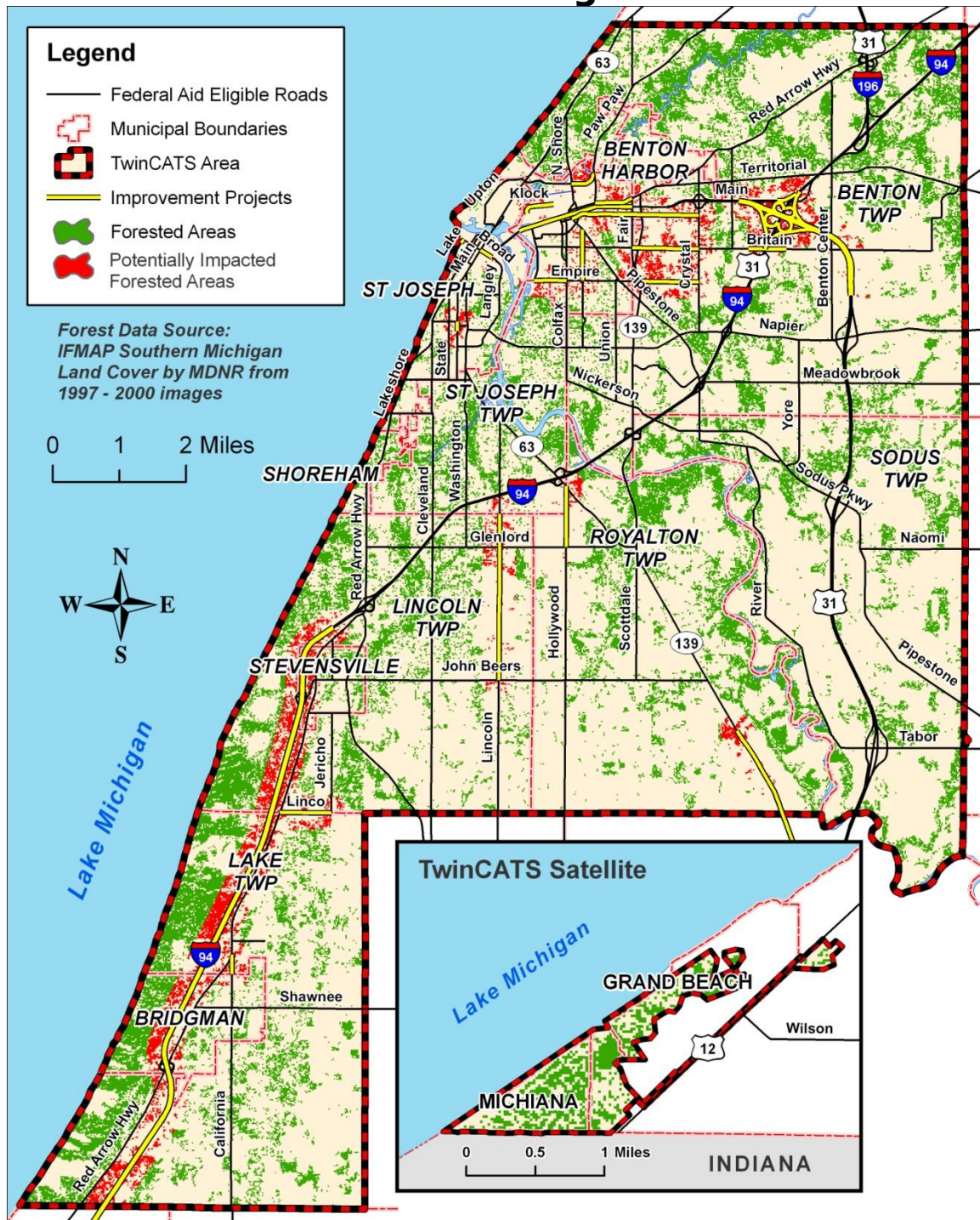
TwinCATS Environmental Mitigation Parks, preservation areas and Museums



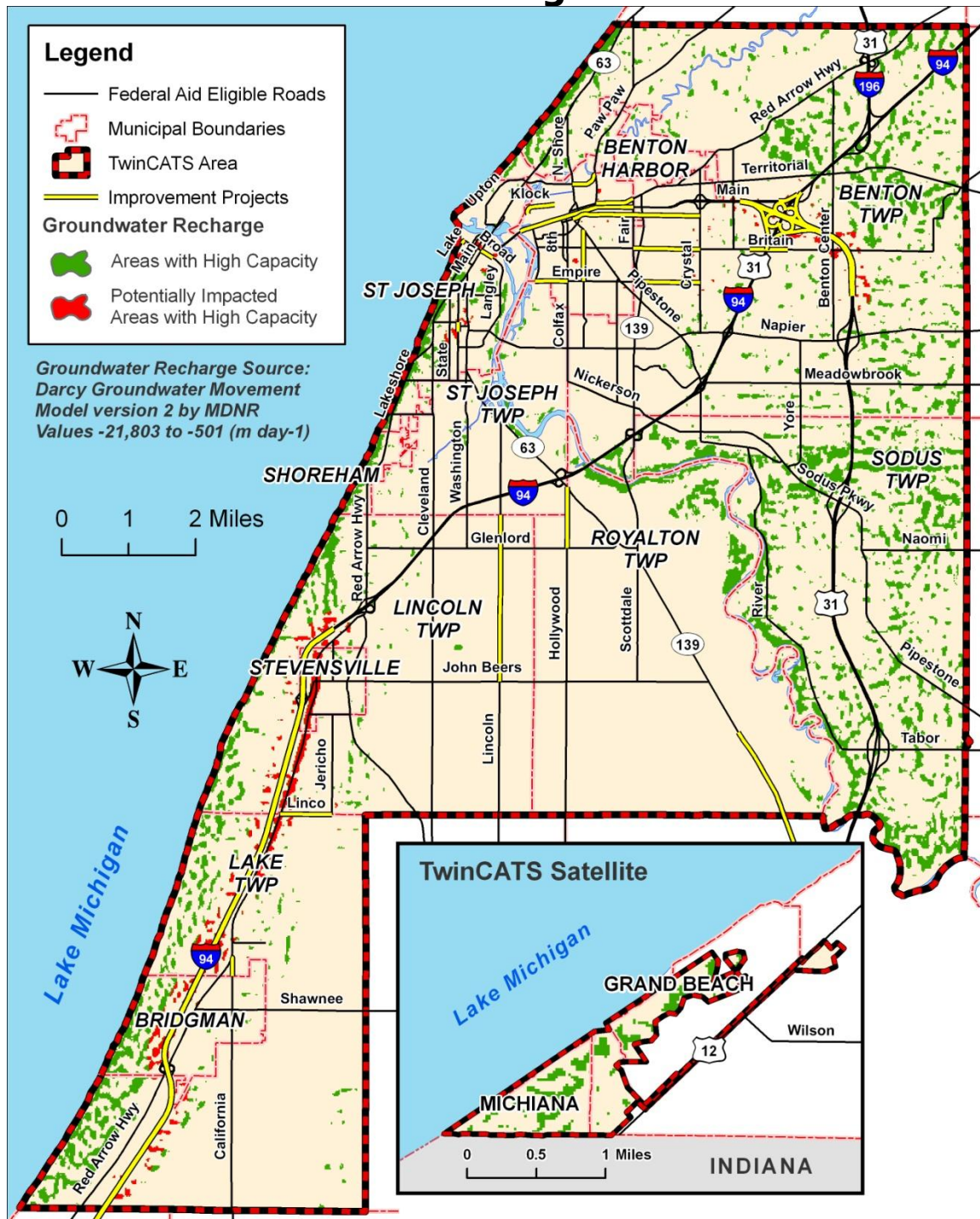
TwinCATS Environmental Mitigation Flood Prone Areas



TwinCATS Environmental Mitigation Forested Areas



TwinCATS Environmental Mitigation Ground Water Recharge



TwinCATS Environmental Mitigation Water Features

