

# **MICHIGAN DESIGN MANUAL BRIDGE DESIGN**

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# MICHIGAN DESIGN MANUAL

## BRIDGE DESIGN

### CHAPTER 14

#### PERMIT APPLICATIONS AND ENVIRONMENTAL ISSUES

##### 14.00

##### PERMIT APPLICATION AND ENVIRONMENTAL ISSUES

Work performed by MDOT and other public agencies is subject to existing law and is regulated by state or federal agencies. Permits may be required as listed in administrative rules promulgated by agencies involved in the administration of appropriate statutes. The Design Unit preparing the plans is responsible for obtaining the required permits through the Environmental Services Section of the Bureau of Highway Development and insuring that the permits are included in the contract proposal. A copy of the permit shall be sent to the Region/TSC Delivery Engineer with a cover letter under the signature of the Engineer of Design.

Permit application should be made approximately three to six months prior to the plan completion date of the project to initiate the process. In the event of an urgent job, the Design Engineer should request that the application be given special attention.  
(8-20-99)

##### 14.00 (continued)

MDEGLE permits involve several Parts of the Michigan Natural Resources and Environmental Protection Act, ACT 451, Public Acts of 1994 as amended. Pertinent Parts are addressed in sections 14.01 - 14.03 and 14.07 - 14.09. A copy of ACT 451 and its Parts is located at the MDEGLE web site, under the [Laws and Rules](#) section.  
(8-20-2009) (2-17-2014) (6-24-2019)

Federal permits issued by the U.S. Army Corps of Engineers, under the Clean Water Act and the Rivers and Harbors Act of 1899, and Coast Guard permits and are addressed in sections 14.05 - 14.06. U.S. Army Corps of Engineers Permit information is located at their website under the [Regulatory Programs and Permits](#) section. The US Army Corps of Engineers regulates watercourses near the Great Lakes and on navigable waters. Work in navigable waters of the US may also require approval from the US Coast Guard. The Federal Aviation Administration (FAA) regulates navigable airspace and permit requirements are addressed in section 14.14.  
(8-20-99) (2-17-2014) (2016)

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### **14.01**

#### **PART 301 of ACT 451**

This Part refers to the "Inland Lakes and Streams Act". A permit must be obtained from the Michigan Department of Environment, Great lakes and Energy (MDEGLE) for the crossing of an inland lake or stream by either a bridge or culvert or the fill and excavation of an inland lake or stream below the ordinary high water mark. (2-17-2014) (6-24-2019)

##### **14.01.01**

#### **Definitions**

An "inland lake" is a natural or artificial lake, pond or impoundment with a surface area of 5 acres or more. A "stream" is a waterway, which may or may not be serving as a county or inter county drain, which has definite banks, a bed and visible evidence of a continued flow or continued occurrence of water. Included are the St. Mary's, St. Clair and Detroit Rivers. Any work in an inland lake or stream below the Ordinary High Water Mark (OHWM) requires state and/or federal permits and must be documented during the environmental classification process. In some instances, work within 500 feet of an inland lake and stream is also regulated. Many inland lakes and streams have special regulatory concerns that must be addressed before a permit will be issued. In some locations, approval of the US Army Corps of Engineers or the US Coast Guard may also be required. Project types that often require an Inland Lakes and Streams permit include culvert replacements, culvert extensions, bridge replacements, pier repairs, riprap placement, stream relocation and other drainage work. (8-20-99)

##### **14.01.02**

#### **Exemptions**

The Environmental Services Section of the Bureau of Highway Development will notify the Design Engineer of any exemptions that apply to specific projects.

### **14.01.03**

#### **Applications**

The Design Engineer will complete a Bridge and Culvert Data Form and forward it along with necessary attachments to the Environmental Services Section of the Bureau of Highway Development. The Environmental Services Section will complete Form PR2731, Application for Permit, sign and transmit it to MDEGLE. For a sample Bridge and Culvert Data Form see MDOT [Form 4200](#). (8-20-99) (2-17-14) (6-24-2019)

##### **14.01.04**

#### **Attached Materials (8-20-99)**

For attachment requirements see section [14.11](#).

### **14.02**

#### **PART 325 of ACT 451**

This Part is known as the "Great Lakes Submerged Lands Act". The act requires a permit from MDEGLE for excavating, filling or in any manner altering or modifying the Great Lakes bottomland or waters, including the bays and harbors. (2-17-2014) (6-24-2019)

##### **14.02.01**

#### **Applications**

The application procedure for permits under PART 325 of ACT 451 is identical to the procedure under PART 301 of ACT 451.

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### 14.03

#### PART 31 of ACT 451

This Part refers to Water Resources Protection/ Floodplain Authority/ Stormwater Control and requires the establishment of the waterway opening size so as not to cause a harmful interference on adjacent riparian property owners that may be impacted by the project. (8-20-99)

#### 14.03.01

##### MDEGLE Review

The act requires MDEGLE to review and/or permit all flood plain related projects. (2-17-2014) (6-24-2019)

#### 14.03.02

##### Exemptions

Permits under this act are not required for the following types of projects:

- A. A watershed, the total drainage area of which measured from the downstream limits of the project site, is less than 2 square miles
- B. Those projects which are clearly beyond the flood plain limits.

The Environmental Services Section of the Bureau of Highway Development will notify the Design Engineer of any exemptions that apply to specific projects. (8-20-99)

#### 14.03.03

##### Applications

When a permit is required, the application procedure is the same as the procedure for application under PART 301 of ACT 451.

### 14.03.04

#### Coordination

A preliminary review of the waterway crossing shall be coordinated with the Design Engineer - Hydraulics/Hydrology and the Transportation Review Unit of the Land and Water Management Division of the Department of Environmental Quality. All correspondences and findings/results will be provided to the Bridge Design Unit, Hydraulics/Hydrology Unit and the Environmental Services Section. (8-20-99)

### 14.04

#### PART 111 of ACT 451 (8-20-2009)

This Part refers to Hazardous Waste Management and requires the establishment of Regulated Waste Activity Identification Numbers (U.S. EPA Identification Number). MDEGLE has been authorized to issue these numbers. MDEGLE, Waste and Hazardous Materials Division publication **Notification of Regulated Waste Activity, EQP5150** (replaces U.S. EPA Form 8700-12) contains instructions and an application form. A copy of the application form is also located at the MDEGLE website under the [Waste section](#). (2-17-2014) (6-24-2019)

#### 14.04.01

##### Applications

For MDOT projects these numbers are requested from MDEGLE/WMD by the Bridge Management Unit of the Design Division. The application form shall be sent to the Bridge Management Unit for their submission to MDEGLE/WMD. Generally, MDOT requests are for, but not limited to, painting projects. See section [8.02](#) for note regarding Regulated Waste Activity Numbers. (2-17-2014) (6-24-2019)

## MICHIGAN DESIGN MANUAL

### BRIDGE DESIGN

#### 14.05

##### U. S. ARMY CORPS OF ENGINEERS PERMITS (8-20-99)

The U.S. Army Corps of Engineers has been regulating the nation's waters since 1890. Their regulatory authority is based primarily on Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act.

Section 404 of the Clean Water Act requires approval prior to discharging dredged or fill material into the waters of the United States and is administered by the U.S. Army Corps of Engineers. Any permits required under this act are referred to as "Section 404 permits".

Section 10 of the Rivers and Harbors Act of 1899 requires approval prior to the accomplishment of any work in or over navigable waters of the United States, or which affects the course, location, condition or capacity of such waters. For a listing of Navigable Waters, see [Appendix 14.05](#). List to be updated as required.

#### 14.05.01

##### Definition

Road and bridge construction activities that require a permit are activities that occur below the plane of ordinary high water in any stream or body of water and in wetlands adjacent to these above waters. The Corps of Engineers defines adjacent to be a distance of approximately 2'-0". Ordinary high water is defined as the line between upland and bottomland and is the line below which the presence and action of the water is so common or recurrent that the character of the land is marked distinctly from the upland by the configuration of the surface of the soil and the vegetation.

#### 14.05.02

##### Jurisdiction

The State of Michigan is under the jurisdiction of the Detroit District Office of the U.S. Army Corps of Engineers, Regulatory Branch.

#### 14.05.03

##### Types of Permits

There are two types of Permits: General and Individual. The permits are divided into the following categories:

Individual Permits:

- Standard Permit
- Letter of Permission (LOP)

General Permits

- Nationwide Permit (issued Feb. 11, 1997)
- Regional Permit

It is Federal Policy, established by Executive Order 11990, that no excavated material is to be placed in wetlands regardless of size or jurisdiction. (The General Permit requires that all excavated material will be deposited at an upland site so that no runoff containing contaminated/suspended material will be allowed into any waterbody or wetland.) If the requirements of the General Permit cannot be met, an Individual Permit is required.(8-20-99)



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### **14.05.04**

#### **Scope of Work (8-20-99)**

The following types of work require a permit:

Section 404 of the Clean Water Act

- Depositing of fill or dredged material in waters of the U.S. or adjacent wetlands.
- Site development fill for residential, commercial, or recreational developments.
- Construction of revetments, groins, breakwaters, levees, dams, dikes, and weirs.
- Placement of riprap and road fills.

Section 10 of the Rivers and Harbors Act of 1899

- Construction of piers, wharves, bulkheads, dolphins, marinas, ramps, float intake structures, and cable or pipeline crossings.
- Dredging and excavation.

### **14.05.05**

#### **Special Conditions for Permits (8-20-99)**

Special conditions are often included in the permit. The permit should be carefully read by the Design Engineer, Resident Engineer, and Contractor.

### **14.05.06**

#### **Application (8-20-99)**

When a U. S. Army Corps of Engineers Permit is required, the application procedure shall follow the format of PART 301 of ACT 451. The Environmental Services Section of the Bureau of Highway Development. will submit permit requests to U. S. Army Corps of Engineers and coordinate the process.

### **14.05.07**

#### **Attached Materials (8-20-99)**

For attachment requirements see section [14.11](#).

## **MICHIGAN DESIGN MANUAL BRIDGE DESIGN**

### **14.06**

#### **COAST GUARD PERMITS**

Construction or modification of a bridge or to dredge in the navigable waters as described in 14.05, will require a Coast Guard Permit, providing that the dredged material is disposed of in a upland site. Michigan, along with the Great Lakes, is part of the Ninth District located in Cleveland, Ohio. They can be contacted at:

Ninth Coast Guard District  
1240 East 9th Street  
Cleveland, OH 44199-2060  
Phone: (216) 902-6118 or  
(216) 902-6117

or: <http://www.uscg.mil/d9/>

(2-17-2014)

#### **14.06.01**

##### **Applications**

Applications for U. S. Coast Guard permits shall be submitted and coordinated by the Environmental Services Section of the Bureau of Highway Development. (8-20-99)

#### **14.06.02**

##### **Exemptions**

Repairs to a bridge which do not alter the clearances, type of structure, or any integral part of the substructure or superstructure or navigation conditions, but which consists only in the replacement of worn or obsolete parts, may, if the bridge is a legally approved structure, be made as routine maintenance without approval of the U.S. Coast Guard.

The Environmental Services Section will notify the Design Engineer of any exemptions that apply to specific projects. (8-20-99)

### **14.07**

#### **PART 305 of ACT 451**

This Part deals with the development, by Michigan Department of Natural Resources, of a Natural River System and designation of Natural Rivers in Michigan. Some rivers are designated as Federally Designated Wild and Scenic Rivers. This designation greatly restricts the number of structures and type of construction allowed in the designated area. (8-20-99)

#### **14.07.01**

##### **Trunkline Crossings**

When a project is proposed involving trunkline crossings of a natural or a wild and scenic river, the work should be coordinated with FHWA and MDEGLE. The Environmental Services Section will act as liaison between MDOT, MDEGLE and FHWA. A listing of trunkline crossings is appended as [Appendix 14.07.01](#). Appendix to be updated as required. (8-20-99) (2-17-2014) (6-24-2019)

## **MICHIGAN DESIGN MANUAL BRIDGE DESIGN**

### **14.08**

#### **PART 91 of ACT 451 (8-20-99)**

This Part deals with "Soil Erosion and Sedimentation Control". "Soil erosion" is the wearing away of land by the action of wind, water, gravity, or a combination of wind, water, or gravity. "Sediments" are solid particulate matter, mineral or organic, that have been deposited in water, are in suspension in water, are being transported, or have been removed from their site of origin by the processes of soil erosion. Construction activities in or near a floodplain, lake, river or stream will require a permit and plans of the proposed actions and plans to control or prevent loss of sediments and other polluting materials. This is specifically called a Notice of Coverage for National Pollutant Discharge Elimination System (NPDES) and deals with storm water discharges from construction activity. A Soil Erosion and Sedimentation Control (SESC) Permit from the proper SESC local agency (county enforcing agency or local enforcing agency) is required before submitting this Notice of Coverage. For additional information see Road Design Manual Section [10.04.04](#) and Standard Plan R-96-Series. (5-1-2000)

#### **14.08.01**

##### **Applications**

The application procedure for permits under PART 91 of ACT 451 is identical to the procedure under PART 301 of ACT 451. In addition the Soil Erosion and Sedimentation Control staff of the Environmental Services Section of the Bureau of Highway Development. shall be contacted.

### **14.09**

#### **PART 303 of ACT 451 (8-20-99)**

This Part deals with "Wetlands Protection". "Wetlands" are land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetland vegetation or aquatic life, and is commonly referred to as a bog, swamp, or marsh. When wetlands are required to be filled or are otherwise affected by a project, it is necessary that the damages be mitigated in some fashion.

#### **14.09.01**

##### **Applications**

The application procedure for permits under PART 303 of ACT 451 is identical to the procedure under PART 301 of ACT 451.

## **MICHIGAN DESIGN MANUAL BRIDGE DESIGN**

### **14.10**

#### **PERMIT MODIFICATIONS AND EXTENSIONS (8-20-99)**

##### **14.10.01**

##### **Changes Affecting Environmental Clearance and Required Permits**

As the design of a particular roadway improvement is developed, it is sometimes necessary, for a variety of reasons, to change the original scope of the project. These changes in scope will often affect the conditions under which the environmental clearance and required permit applications for the project were originally approved. Care should be taken whenever the original project scope is modified to ensure the environmental clearance is still valid and to make sure that new permit applications or modifications to existing permits are acquired if necessary. It is advisable to discuss the proposed revisions with the Environmental Section first.

Some items that require review/discussion with the Environmental Section to determine if environmental clearance and permits are affected are listed below.

##### **Changes in Bridge Items**

1. Widening bridges, piers, and abutments
2. Culvert extensions, size changes, or new replacements
3. Construction access pads or roads in watercourses, lakes, or wetlands
4. Additional ROW or Grading Permits than originally scoped

##### **Other Factors**

1. Guardrail upgrading, including elimination and slope flattening
2. Ditch cleanouts
3. Any grading operations added to the project outside existing shoulders
4. Relocating drains or streams

##### **14.10.01 (continued)**

If these, or any other items which are suspected to impact the existing environmental clearance and permit situation arise, the Designer should contact the Environmental Section staff person who is responsible for the project.

##### **14.10.02**

##### **Permit Extensions**

MDEGLE have agreed to allow MDOT to alter the permit date on permits that have expired prior to letting of a project, if the scope of the project has not been modified.  
(2-17-2014) (6-24-2019)

An application to renew the permit is required. MDOT must receive the new permit date prior to changing the date on the permit. Permit date changes will be applied for by the Environmental Section. (8-20-99)

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#### 14.11

##### ATTACHMENTS for ENVIRONMENTAL SECTION

See MDOT [Form 4200](#); from MDOT web site (2-17-2014)

The Environmental Section shall inform the Design Unit of the permit requirements of the project. Along with **four (4)** sets of ½ sized plans (11" x 17") to be distributed to the resource agencies, the following information will typically need to be provided on letter sized (8½" x 11") paper:

- A. Project Location Map: include county, township, range and section numbers.
- B. A brief description of the project and the reason the work is necessary.
- C. The expected project letting and construction dates.
- D. For wetland impacts, the following will be required:
  - 1. Wetland limits, by station, for each take as well as type such as forested, scrub shrub, or emergent wetlands. This information will be provided by the Environmental Section and should be clearly marked on each plan sheet.
  - 2. The square footage of each take, i.e. 10' x 200', and total acreage take for entire project.
  - 3. Volume of fill in wetlands in cubic yards.
  - 4. Amount of fill per lineal foot in cubic yards for projects impacting less than 2 acres of wetland and less than .25 acre per wetland complex.
- E. For new culverts, culvert replacements and/or culvert extensions, the following information will be required:
  - 1. A completed Bridge and Culvert Data Form (for new culverts or culvert extensions on streams with a drainage area of greater than 2 square miles).

#### 14.11 (continued)

- 2. Cross section view of culvert (may use one typical if there are several of similar nature on project). Cross section should show type, length, diameter, and stationing. Elevations should be shown on new culverts, or when replacing culverts out-of-kind on regulated streams and/or county drains.
- 3. Plan view of culvert stating distance to nearest cross road or reference mark to aid the MDEGLE in locating the culvert during a field inspection. (2-17-2014) (6-24-2019)
- 4. Amount of fill and/or excavation below ordinary high water mark on streams or drains in cubic yards.
- 5. List of riparian owners with names and addresses immediately adjacent to permitted activity for new and/or replacement culverts, extensions greater than 24 feet, or waterway openings greater than 25 square feet.
- F. For bridge repair or new construction over a watercourse, the following information will be required:
  - 1. Cross section view of the bridge abutments, piers, and stream with elevations.
  - 2. Plan view of bridge.
  - 3. A completed Bridge and Culvert Data Form for new bridges, or if altering the original substructure of the existing bridge. See MDOT [Form 4200](#); from MDOT web site (2-17-2014)
  - 4. Earth excavation and fill quantities in cubic yards below the ordinary high water mark of the watercourse.
  - 5. Volume of riprap in square or cubic yards being placed below the ordinary high water mark of the watercourse.
  - 6. A list of riparian owners with their names and addresses from all four quadrants adjoining the watercourse/bridge intersection.

## **MICHIGAN DESIGN MANUAL BRIDGE DESIGN**

### **14.12**

#### **ENVIRONMENTAL POLICY (8-20-99)**

The National Environmental Policy Act (NEPA) requires an examination and consideration of the potential impacts of a transportation project upon sensitive resources. These resources include, but are not limited to, streams, lakes, floodplains, wetlands, endangered species, historic and archeological sites, parklands, air quality, wildlife habitat, fisheries, etc. It is the policy of the Federal Highway Administration that this examination be completed as part of the NEPA process, that evidence of compliance with the process be contained in appropriate documentation, and that public involvement must be an essential part of the process.

For additional information regarding MDOT environmental issues see the Road Design Manual [Chapter 10](#).

### **14.12.01**

#### **General**

Every project that utilizes federal funding must be analyzed for environmental impacts and environmental clearance obtained before the funding is released. The depth of analysis of a project is determined by the severity of its impact upon the environment, not the size of the project. It is possible to have a small project which has such severe impacts that extensive analysis is required. Conversely, it is possible to have a very large project which has very little impact and which requires relatively little analysis. In general, of course, large and complex projects often require more analysis than small, simple projects, but it should be kept in mind that this is a coincidental connection, not a procedural one.

The purposes of the analysis are, basically, to determine what the adverse effects of the project are, whether the positive benefits of the project outweigh the negative effects, to attempt to avoid the negative effects, and to attempt to mitigate those negative effects which can't be avoided. This approach recognizes that the project itself will become a part of the environment. It must therefore be integrated into the existing environment rather than imposed upon it.

The Bridge Design Engineer shall notify the Region/TSC Resource Specialist and the Environmental Section of Environmental Services Section of the Bureau of Highway Development if they identify or encounter any potentially contaminated sites in the design process. See Road Design Manual [Chapter 10](#) and [Chapter 14](#) for more detailed process. See also PPMS Task # 2810 & 2820. (8-20-2009) (2-17-2014)

## **MICHIGAN DESIGN MANUAL BRIDGE DESIGN**

### **14.12.02**

#### **Documents / Definitions**

There are three levels of analysis: Categorical Exclusion(CE), Environmental Assessment(EA), and Environmental Impact Statement(EIS).

#### **A. Categorical Exclusion**

Most projects are cleared through the Categorical Exclusion (CE) process. This process consists of a cursory examination of the proposed scope of work by specialists in the Environmental Section of the Environmental Services Section of the Bureau of Highway Development. If there are no apparent “significant” long term negative environmental impacts, “substantial” controversy on environmental grounds, or significant impacts upon public parks, recreation areas, refuges, or other natural and cultural resources, the project receives an environmental clearance to proceed. Environmental Study for Project Classification (MDOT only form 1775), with any necessary attachments, serves as the documentation of compliance with the NEPA process. Environmental Study for Project Classification (MDOT only form 1775), will often include mitigation measures such as limitations on areas where work can occur, or compensation such as replacement trees in order to avoid or minimize environmental impacts. These mitigation measures must be incorporated into the design of the project.

(2-17-2014)(3-21-2016)

### **14.12.02 (continued)**

#### **B. Environmental Assessment**

When it is uncertain whether or not a project may have a “significant” impact upon the environment, an Environmental Assessment (EA) is prepared. The purpose of the EA is to conduct a more in-depth analysis of the project and to determine either that there is a “Finding of No Significant Impact” (FONSI) or that there is significant impact. If it is determined that there is significant impact, an Environmental Impact Statement will be required.

#### **C. Environmental Impact Statement**

When it is obvious that a significant impact upon the environment will result from a project, or when an Environmental Assessment determines that a significant impact will result, an Environmental Impact Statement (EIS) must be prepared. The main purpose of the EIS is to insure that all considerations and deliberations required by NEPA are carried out and that the decision making process is documented.

## **MICHIGAN DESIGN MANUAL BRIDGE DESIGN**

### **14.13**

#### **PROJECT ENVIRONMENTAL CLASSIFICATION (8-20-99)**

Every MDOT project is reviewed and it is assigned an environmental classification. The classifications are: Class I (Environmental Impact Statement), Class II (Categorical Exclusion) and Class III (Environmental Assessment). The Majority of projects receive a Categorical Exclusion classification.

#### **14.13.01**

##### **General**

Projects are classified according to the significance of the impact(s) that they will have upon the environment. The level of analysis of a project increases as the significance of its impacts increases. Those projects in which there are no perceived impacts are classified as Class II (Categorical Exclusions). Those projects in which there is uncertainty as to whether significant impacts will occur receive a Class III (Environmental Assessment) classification. Projects in which it is known or strongly suspected that significant impacts will occur receive the Class I (Environmental Impact Statement) classification.

### **14.13.02**

#### **Environmental Impact Statement**

##### **A. Draft Environmental Impact Statement (DEIS)**

A DEIS containing a description of project, a discussion of alternative to the construction of the project (including "no build"), an analysis of the impacts that the project and the alternatives would have upon the human and natural environment is developed. The DEIS is then circulated to the appropriate federal and state regulatory agencies and made available for public review. A public hearing on the DEIS is held and public comments recorded. Agency and public comments are incorporated into the DEIS and it is sent to the FHWA for review and approval.

At this stage of analysis, no decisions are made. It is a fact and opinion finding stage.

##### **B. Final Environmental Impact Statement (FEIS)**

The FEIS includes discussion of the "recommended alternative" and presents justification for its selection. It also responds to comments gathered from the DEIS and the Public Hearing, and incorporates any corrections to the DEIS. Mitigation and / or enhancement measures intended to reduce or correct any adverse impacts of the recommended alternative are described. Any major unresolved issues will also be incorporated.

The FEIS is then given a final distribution to the public and agencies. A Record of Decision (ROD) is issued by FHWA. After issuance of the ROD, which constitutes environmental clearance and design approval, the project can proceed to the final design, right-of-way acquisition and construction stages.



## **MICHIGAN DESIGN MANUAL BRIDGE DESIGN**

### **14.13.03**

#### **Environmental Assessment (EA)**

##### **A. Significance of Impacts**

When the significance of the impacts of a project are not clearly established, an EA is prepared. It generally describes the project, discusses the purpose of and need for the project, the alternatives to the project, the impacts of the project and their mitigation, comments and coordination with appropriate agencies, and any other evaluations that may be necessary.

##### **C. Finding of No Significant Impact (FONSI)**

The EA process has one of two results. If no impacts are determined to be significant a document known as a FONSI is issued. It states the findings and the basis for the findings and references the EA. If, however, significant impacts are determined to be probable, the Environmental Impact Statement process is initiated for the project.

### **14.13.04**

#### **Categorical Exclusion (CE)**

All MDOT projects receive at least a cursory analysis for environmental impacts. If no significant impacts are known or anticipated, the project receives a Categorical Exclusion classification. If, subsequent to this designation, significant impacts are found to be possible or probable, the project is reclassified as either an EA or an EIS.

## MICHIGAN DESIGN MANUAL BRIDGE DESIGN

### 14.14

#### AVIATION, AERONAUTICS & AIRPORT PERMITS (6-23-2025)

##### 14.14.01

##### **Federal Aviation Administration Temporary and Permanent Obstruction Notice Requirements (CFR Title 14 Part 77.9)**

The Federal Aviation Administration (FAA) regulations that ensure safe, efficient use, and preservation of navigable airspace are found in Title 14 of the Code of Federal Regulations (14 CFR). Since 1958 these rules have typically been referred to as Federal Aviation Regulations but have recently been identified as the respective CFR Title 14. Subchapter E of Title 14 "Aeronautics and Space", includes Parts 71, 73 and 77 pertaining to "Airspace". CFR Title 14 Part 77 addresses the requirements for filing a Notice associated with alteration due to bridge construction activities.

##### 14.14.01 (continued)

Construction activities that require notice to the FAA requesting an obstruction evaluation will depend on a number of factors including, but not limited to, the height of any permanent and temporary elements, the proximity of the project to an airport, the proximity of the project to airport navigational equipment and use of equipment that emit frequencies. Criteria for determining the need to request an evaluation notice to the FAA is found at **CFR Title 14 Part 77.9** and includes the following:

1. ANY construction or alteration of permanent structures or temporary construction equipment that exceeds 200' or more above ground level (AGL) regardless of proximity of an airport.
2. ANY construction or alteration of permanent structures or temporary construction equipment in the vicinity of an airport that intrudes into a conical zone of airspace surrounding the airport. The size and slope of this zone is dependent on longest runway lengths for each airport and is described in the CFR.
3. The FAA may request ANY construction or alteration of permanent structures or temporary construction equipment to file notice and have subsequent obstruction evaluation conducted.

Permanent bridge construction activities that may require Notice to the FAA, and an obstruction evaluation, include those designs utilizing large pylons, piers, arches, or other structural elements that are above ground level.

Temporary bridge construction activities which will typically involve airspace analysis are those utilizing cranes. Such bridge activities include, but are not limited to, pile driving operations, sheeting installation, beam and structure erection, prefabricated element erection, and cofferdam construction.

FAA determinations are valid for 18 months and typically one 18 month extension (requested 30 days prior to expiration) will be allowed.

## MICHIGAN DESIGN MANUAL BRIDGE DESIGN

### 14.14.02

#### Michigan Tall Structure Permit Requirements

**Permanent** structures that meet the FAA notice criteria described in section 14.14.01 are subject to the requirements of the Michigan Tall Structures Act ([Act 259 of 1959](#)) and will require coordination with the [MDOT's Office of Aeronautics](#) to obtain a [Michigan Tall Structure Permit](#). To initiate this process and to assure expeditious processing, Notice to the FAA should be filed first, then application for a Michigan Tall Structure Permit should be requested by providing the assigned FAA aeronautical study number(s) to the Office of Aeronautics. The FAA's obstruction evaluation and MDOT's Office of Aeronautics aeronautical study will be done concurrently. Inquiries or request for assistance by MDOT's Office of Aeronautics may be sent via e-mail to [MDOT\\_Tall\\_Structures@Michigan.gov](mailto:MDOT_Tall_Structures@Michigan.gov); please include your FAA Aeronautical study number if available.

Michigan Tall Structure permits are valid for 12 months and are extendable to correspond (match) with FAA permits.

### 14.14.03

#### Michigan Local Airport Zoning Permit Requirements

Many publicly owned airports will have local airport zoning regulations administered by the airport or local municipality. These regulations are under the authority of the Michigan Airport Zoning Act, [Act 23 of 1950](#). Airport Zoning regulations are applicable to both permanent and temporary structures and equipment. The heights at which permits are required are different than that of the FAA's Part 77 Notice Criteria and the Michigan Tall Structures Act. **To determine if a separate airport zoning permit is required for temporary equipment or permanent structures, the airport manager or MDOT's Office of Aeronautics should be contacted for assistance.** The Airport Zoning Permit process will also be a concurrent with the FAA obstruction evaluation and the Office of Aeronautics airspace study, but only if separate application is made to the local airport zoning administrator simultaneously. The requirement to obtain a local airport zoning permit is usually very similar to that of the FAA Notice requirements.

### 14.14.04

#### Jurisdiction

The FAA regulations referenced above are pursuant to Title XIV of the Code of Federal Regulations, Part 77. MDOT's Office of Aeronautics has been delegated certain authorities by the Michigan Aeronautics Commission to administer the Michigan Aeronautics Code ([Act 327 of 1945](#)), Tall Structure Act ([Act 259 of 1959](#)) and the Airport Zoning Act ([Act 23 of 1950](#)).

## MICHIGAN DESIGN MANUAL BRIDGE DESIGN

### 14.14.05

#### FAA Coordination and Procedures for Filing Notice

MDOT will file a Notice of Proposed Construction or Alteration with the FAA to obtain determination during the design phase for any project that meets the requirements outlined in Section 14.14.01 or as noted below. The Notice of Proposed Construction or Alteration must be submitted to the FAA a minimum of 45 days prior to construction start date. FAA Form 7460-1 (see [FAA OE/AAA Forms](#) site) must be completed for projects requiring a Notice.

The 45-day advance notice requirement is waived if immediate construction or alteration is required due to an emergency. Notification must be made to the FAA through any expeditious means and followed-up with completion of FAA Form 7460-1 within 5-days of initial notification.

The [FAA Obstruction Evaluation/Airport Airspace Analysis](#) website provides access to a “[Pre-Screening Tool](#)” (formerly called the “Notice Criteria Tool”) to assist in identifying the need for filing a Notice of Proposed Construction or Alteration for projects with permanent improvements or temporary material or equipment with a height of less than 200’ AGL. Note that this tool is used only to verify the need to File Notice with FAA. None of the information entered on the website is transmitted to the FAA.

### 14.14.05 (continued)

#### A. Pre-Screening Tool

Use of the Pre-Screening Tool requires input of project latitude, longitude, site elevation, structure height and structure type. Structure height will determine compliance with the 200’ AGL requirement. Latitude and longitude in combination with structure height and site elevation will determine project location in relation to any nearby airports, and overall height Above Mean Sea Level (AMSL) with respect to the protected surfaces surrounding the airport that represents flight paths. For structures under 30 feet in elevation, select Structure Type “crane”.

Latitude and longitude of location are required, and they shall be reported in latitude and longitude projection to the closest 100<sup>th</sup> of a second and in NAD 83 datum (1983 North American Datum). The Pre-Screening Tool includes an interactive map to assist with the retrieval of location coordinates. For a Bridge Structure Type, at least two point locations representing the structure are required.

Enter the site elevation in NAV 88 datum. The elevation should be the highest ground elevation on the project site that a crane is likely to be placed.

If a structure height (or crane height) is unknown, input a structure height of 200’, which will assure that the 200’ AGL requirement is satisfied.

Click the SUBMIT button to display the “Results” report of what action should be taken. Additional guidance can be found in the OE/AAA Public User Manual - link located in the [‘OE3A Library’](#).

For projects that include multiple structures, the Pre-Screening Tool should be evaluated for each structure.

If 200’ structure height causes the need to File Notice, consideration shall be given to limiting the structure height to a lesser height to avoid the need for filing a Notice of Proposed Construction or Alteration for projects. Consult with Bridge Field Services, Operations Field Services Division to determine a reasonable structure height for the project. Construction equipment less than 25’ high does not require a need to file or permit.

## **MICHIGAN DESIGN MANUAL BRIDGE DESIGN**

### **14.14.05**

#### **FAA Coordination and Procedures for Filing Notice (continued)**

##### **B. Filing Notice**

If the need to “File Notice” to the FAA exists, the Project Manager must register on the website and will be the representative/proponent on behalf of MDOT or the contractor. File each structure separately if more than one structure exists within a project. Any correspondence or requests from FAA must be addressed immediately upon receipt to ensure timely processing of the request.

The FAA Notice will require the overall height of the structure to be reported as the overall “Above Mean Sea Level” AMSL (ground AMSL + structure height “Above Ground Level” (AGL)) as determined for the Pre-Screening Tool. If temporary work areas are required to facilitate the construction of a project these should also be included in the notice.

Separate notice will be required for temporary construction equipment that exceeds the heights of the permanent structure and as required in the explanation above.

MDOT’s Office of Aeronautics can assist with the Notice to the FAA, a Michigan Tall Structure Permit and local Airport Zoning Permits (if required) as described above.

### **14.14.05 (continued)**

#### **C. Contract Documents**

A copy of all FAA determination letters and permits (Michigan Tall Structure and local or municipal airport zoning) must be included in the Contract Documents for the project.

A special provision for FAA Notification for Structure Work must be included in all projects.

Include note 8.02 P. when a permit has been obtained for a project. Include note 8.02 Q. when the project has been evaluated for a particular structure height and no Notices or permits are required.

Contractors electing to construct the project outside of the parameters of the permit or criteria considered shall bear responsibility for obtaining a new permit.



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### SECTION 10/RIVER AND HARBORS ACT 1899 JURISDICTION

#### NAVIGABLE WATERS OF THE UNITED STATES IN U.S. ARMY ENGINEER DISTRICT, DETROIT FEBRUARY, 1978

In administration of the laws enacted by Congress for the protection and preservation of the navigable waters of the United States, MDOT exercises jurisdiction over the waterways listed below, from their mouths to the head of navigation as follows:

NAME OF WATERWAY	HEAD OF NAVIGATION
Au Gres River	Undetermined
Au Sable River	Dam 7 miles above mouth
Bad River	Upper City limits of St. Charles
Belle River	2800 ft above northern limits of Marine City
Betsie River	Head of Betsie Lake, Frankfort - 1.3 miles from Lake Michigan
Black River (St. Clair Co.)	Beach Road 7 miles above mouth
Black River (Ottawa Co.)	Head of Black Lake at Holland, 5.75 miles from Lake Michigan
Black River (Van Buren Co.)	Michigan Central R.R. Bridge, S. Haven, 2.5 miles above mouth
Burt Lake	Navigable throughout
Carp River (Leelanau Co.)	Leland, dam 400 ft above mouth
Cedar River	0.3 miles above mouth
Charlotte River	County Road bridge 0.33 miles above mouth
Cheboygan River	Navigable throughout
Clinton River	Gratiot Ave. Hwy. Bridge, Mt. Clemens
Crooked Lake	Navigable throughout
Crooked River	Navigable throughout
Detroit River	Navigable throughout
Ecorse River	Highway Bridge 400 ft above mouth
Galien River	Whittaker St. Bridge, 0.25 miles above mouth

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NAME OF WATERWAY	HEAD OF NAVIGATION
Grand River	Grand Rapids, 40 miles above mouth Fulton Street Bridge
Green Bay	In its entirety
Huron River	State highway bridge at Flat Rock
Indian River Inc. Inland Route	Navigable throughout Upper end of Crooked Lake, Conway
Kalamazoo River	Allegan, about 38 miles above mouth
Kawkawlin River	Michigan Central R.R. Bridge at Kawkawlin, about 4 miles above mouth
Keweenaw Waterway	Navigable throughout including Portage Lake, Torch Lake, and Torch Canal
Lake Betsie	Navigable throughout
Lake Charlevoix	Navigable throughout
Lake Erie	Navigable throughout
Lake Huron	Navigable throughout
Lake Macatawa	Navigable throughout
Lake Michigan	Navigable throughout
Lake St. Clair	Navigable throughout
Lake Superior	Navigable throughout
La Plaisance Creek	La Plaisance Road Bridge
Leelanau River	Dam 400 ft above mouth
Little Bay De Noc	In its entirety
Little Lake	Navigable throughout
Manistee Lake	Navigable throughout
Manistee River	Including Manistee Lake, 5.6 miles from Lake Michigan
Manistique River	Upper end of lumber slips at Manistique, 0.75 miles above mouth
Menominee River	From its mouth upstream about 1.86 miles to but not including the Interstate Highway bridge (U.S. 41)
Mona Lake	Navigable throughout



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NAME OF WATERWAY	HEAD OF NAVIGATION
Mullett Lake	Navigable throughout
Muskegon Lake	Navigable throughout
Muskegon River	M-37 Highway Bridge, 39.25 miles above mouth (33 miles from head of Muskegon Lake)
Ottawa River	Detroit & Toledo Shore Line Br. about 3 miles
Paw Paw River	Paw Paw Ave., Benton Harbor, 2 miles above mouth
Pentwater Lake	Head of Lake, 2.25 miles from Lake Michigan
Pere Marquette Lake	Navigable throughout
Pere Marquette River	Head of Pere Marquette Lake, 3 miles from Lake Michigan
Pigeon River	Upper village limits of Caseville
Pine River (Arenac Co.)	M-25 Bridge, 0.5 miles above mouth
Pine River (St. Clair Co.)	Detroit Port Huron R.R. Bridge, 3 miles above mouth
Pine River (Charlevoix Co.)	Upper end of both arms, Charlevoix Lake, Michigan 15 miles above mouth
Pinnebog River	Junction with creek, 0.5 miles above mouth
Portage Lake	Navigable throughout
Raisin River	M.C.R.R. Br. at Monroe, 2.5 miles above mouth
Rouge River	M.C.R.R. Br. at Dearborn (Junction Bridge)
Saginaw River	Navigable throughout
St. Clair River	Navigable throughout
St. Joseph River	Berrien Springs, 24.5 miles above mouth
St. Mary's River	Navigable throughout
Sebewaing River	Pere Marquette R.R. Br., 0.5 miles above mouth
Shiawassee River	Junction with Bad River

## MICHIGAN DESIGN MANUAL BRIDGE DESIGN

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NAME OF WATERWAY	HEAD OF NAVIGATION
Spring Lake	Navigable throughout
Tahquamenon River	Lower Falls, about 16 miles above mouth
Thunder Bay River	Dam near upper city limits of Alpena
Tittabawassee River	Dam in Midland
Waiska River	D.S.S. & A.R.R Br., 0.75 miles above mouth
White Lake	Navigable throughout
White River	Head of White Lake, 6.8 miles from Lake Michigan

It should be understood that this merely represents the views of MDOT since jurisdiction of the United States can be conclusively determined only through judicial proceedings.

### LAKE SUPERIOR BASIN

LAKE SUPERIOR Westernmost of the Great Lakes bounded by the States of Minnesota, Wisconsin, and Michigan and by the Canadian province of Ontario.

LIMITS OF NAVIGABILITY - within the limits of the United States, navigable throughout.

Keweenaw Waterway crosses Keweenaw Peninsula, Houghton County, Michigan from Keweenaw Bay on the south to the open waters of Lake Superior on the north.

LIMITS OF NAVIGABILITY - waterway including Torch Lake and Torch Canal navigable throughout.

Sturgeon River rises in south central Baraga County, Michigan and flows westerly and northerly through Baraga and Houghton Counties into Pike Bay, a part of Portage Lake which is a segment of the Keweenaw Waterway.

LIMITS OF NAVIGABILITY - navigability from its mouth upstream to mile 50.

# MICHIGAN DESIGN MANUAL BRIDGE DESIGN

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## TRUNKLINE CROSSINGS OF MICHIGAN'S NATURAL RIVERS

<u>Control Section</u>	<u>Structure Number</u>	<u>Trunkline</u>	<u>Watercourse</u>
<u>RIFLE RIVER</u>			
Ogemaw County			
65022	BO1	M-55	Rifle River
65051	BO1	M-33	Rifle River
65051	Culvert	M-33	Eddy Creek
65052	BO1	M-33	Klackung Creek
65052	Culvert	M-33	Wilkins Creek
<u>LOWER KALAMAZOO RIVER</u>			
Allegan County			
03021	BO1	M-89	Kalamazoo River
03021	BO2	M-89	Kalamazoo River
03021	Culvert	M-89	Sand River
03072	BO2	M-40	Rabbit River
03072	Culvert	M-40	Bear Creek
<u>BOARDMAN RIVER</u>			
Grand Traverse County			
28021	Culvert	M-113	Swainstone Creek
28021	Culvert	M-113	Jackson Creek
28021	Culvert	M-113	Bancroft Creek
28051	Culvert	M-37	Beitner Creek
Kalkaska County			
40011	CO1	US-131	S. Br. Boardman River
40011	Culvert	US-131	Taylor Creek
40011	Culvert	US-131	Crofton Creek
40011	Culvert	US-131	Failing Creek
<u>ROGUE RIVER</u> (8-6-92)			
Kent County			
41121	BO2	M-46	Rogue River
41121	BO3	M-46	Duke Creek
41132	BO1	US-131	Rogue River
41132	BO2	US-131	Rogue River

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<u>Control Section</u>	<u>Structure Number</u>	<u>Trunkline</u>	<u>Watercourse</u>
<u>PERE MARQUETTE RIVER</u> (Federal and State Designated Wild and Scenic River)			
Lake County			
43011	BO1	M-37	Pere Marquette River
43011	BO2	M-37	Baldwin River
43022	BO1	US-10	Baldwin River
43022	BO2	US-10	Sandborn Creek
Mason County			
53022	BO1	US-10	Waldon Creek
53031	BO2	US-31	Pere Marquette River
53031	BO3	US-31	Pere Marquette River
Newago County			
62032	Culvert	M-37	Cedar Creek
<u>PINE RIVER</u> (2005)			
Wexford County			
830111	BO1	M-37	Pine River
Osceola County & Lake County			
None			
<u>PIGEON RIVER</u>			
Cheboygan County			
16022	BO1	M-68	Pigeon River
<u>FLAT RIVER</u>			
Ionia County			
35081	XO1	M-44	Flat River
Kent County			
41091	BO2	M-91	Flat River
41091	BO3	M-91	Flat River
Montcalm County			
59022	BO1	M-57	Flat River
59022	BO2	M-57	Dickerson Creek
59031	BO1	M-91	Wabasis Creek
59032	BO1	M-91	Flat River
59032	BO2	M-91	Flat River
59044	BO1	M-46	Flat River

# MICHIGAN DESIGN MANUAL BRIDGE DESIGN

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<u>Control Section</u>	<u>Structure Number</u>	<u>Trunkline</u>	<u>Watercourse</u>
<u>JORDAN RIVER</u>			
Antrim County 05051	Culvert	M-66	Green River
Charlevoix County 15051	BO1	M-32	Jordan River
<u>HURON RIVER</u>			
Livingston County 47013	BO1	US-23	Huron River
47041	BO1	M-36	Huron River
<u>WHITE RIVER</u>			
Muskegon County 61073	BO1	US-31 BR	White River
61075	BO5	US-31	White River
Newaygo County 62012	Culvert	M-20	White River
62012	Culvert	M-20	White River
62014	Culvert	M-20	White River
62031	BO2	M-37	White River
Oceana County 64022	BO2	M-20	White River
64022	Culvert	M-20	White River
64022	CO1	M-20	Knutson Creek
<u>BETSIE RIVER</u>			
Benzie County 10011	BO1	M-22	Betsie River
10031	BO1	US-31	Betsie River
10042	BO1	M-115	Betsie River
10042	Culvert	M-115	Dair Creek
Manistee County 51041	BO1	M-115	Betsie River

# MICHIGAN DESIGN MANUAL

## BRIDGE DESIGN

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<u>Control Section</u>	<u>Structure Number</u>	<u>Trunkline</u>	<u>Watercourse</u>
<u>FOX RIVER</u> (8-6-92)			
Schoolcraft County			
75052	BO1	M-77	E. Branch Fox River
75061	BO7	M-28	Fox River
<u>TWO HEARTED RIVER</u> (2005)			
Luce County			
None			
<u>AU SABLE RIVER</u> (Federally Designated Wild and Scenic River) (8-6-92)			
Crawford County			
20012	BO1	I-75 BR	Au Sable River
20015	BO1	I-75	Au Sable River
20015	BO2	I-75	Au Sable River
20015	BO3	I-75	E. Br. Au Sable River
20015	BO4	I-75	E. Br. Au Sable River
20021	BO2	M-72/93	Au Sable River
20022	BO1	M-72	S. Br. Au Sable River
Oscoda County			
68012	BO1	M-33/72	Au Sable River
68041	BO1	M-72	W. Branch Big Creek
68041	BO2	M-72	E. Branch Big Creek
Roscommon County			
72041	BO1	M-18/144	S. Br. Au Sable River
<u>UPPER MANISTEE RIVER</u> (2005)			
Crawford County			
20021	B01	M-72	Upper Manistee River
Kalkaska County			
40022	C02	M-72	Upper Manistee River
40022	C03	M-72	Black Creek
40031	B01	M-66	Upper Manistee River
Antrim, Missaukee & Otsego County			
None			

# MICHIGAN DESIGN MANUAL BRIDGE DESIGN

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## MICHIGAN'S NATURAL AND WILD & SCENIC RIVERS

