MDEQ
Water Resources
2019 Bridge Conference

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Section 404 of Clean Water Act

Regulates the discharge of dredged or fill material into waters of the United States, including wetlands.

Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects.

Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States,
Section 404 Delegation

Michigan was the first state, and remains one of only two states, to have received EPA approval to administer 404 Program.

Because of this authorization, permits issued by the DEQ also provide authorization under Section 404 of the Federal Clean Water Act (except in coastal areas where federal law does not authorize Section 404 assumption).
Michigan Laws Administered by DEQ – Water Resources
Natural Resources and Environmental Protection Act
Act 451 of the Public Acts of 1994 & Related Statutes
State Laws

- Part 303, Wetland Protection
- Part 301, Inland Lakes and Streams
- Part 31, Floodplain Regulatory Authority

- Administrative Rules
- Associated laws and regulations
Memorandum of Understanding

- Agreement with MDOT & MDEQ
- Coverages includes MDOT, County Roads, and Municipal Roads
- Expedited Permitting Service (PA 451 Parts 31, 301, 303)
- Act 51 (Public Roads) Funding ~$1 Million
- No permit or meeting fees
- The MOU specifies 11 dedicated TRU FTE’s
- TRU currently operating at 9 FTEs
MOU Coverage Conditions

• Public Transportation Agencies and their authorized agents are eligible to receive Act 51 funding or aeronautics projects.

• The project is for the construction, maintenance, or improvement of a public transportation facility (includes roads, non-motorized trails, state-owned rail trunk lines, and airports)
<table>
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<th>Form Name</th>
<th>Form Description</th>
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<tr>
<td>Application - Transportation Emergency Request Form</td>
<td>Emergency Information Sheet for Bridge or Culvert Failure</td>
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<tr>
<td>Application - Public Transportation Projects MDEQ/USACE Joint Permit Application (JPA) for Inland Lakes and Streams, Great Lakes, Wetlands, Floodplains, Dams, Environmental Areas, High Risk Erosion Areas and Critical Dune Areas</td>
<td>Joint Permit Application for work done by Public Transportation Agencies in Inland Lakes and Streams, Great Lakes, Wetlands, Floodplains, Dams, High Risk Erosion Areas and Critical Dune Areas</td>
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<tr>
<td>Service Request - Transportation Service Request - T&amp;E Species &amp; SHPO Map/Data Review (Preliminary Desktop Review)</td>
<td>Request a desktop review for the occurrence of threatened &amp; endangered species and other items of concern such as historical sites registered with the State Historical Preservation Society, known contamination, and proximity to Section 10 waters.</td>
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<tr>
<td>Service Request - Voluntary Transportation Preliminary Review Request</td>
<td>The Joint Agency Transportation Committee (JATC) consisting of a number of departments including MDEQ has developed this form to allow Public Transportation Agencies to solicit early hydrologic/hydraulic and environmental input on their future projects.</td>
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Transportation Projects Permitting Staff

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Upper Peninsula
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SW Michigan
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SE Michigan
Pre-Design Considerations

DEQ-TRU Preliminary Review

- Submit request in MiWaters
- Include any map, plans, pics
- Request flood flows
- T&E Data Search – State and Federal
Michigan Mussel Protocol

Massasauga Rattlesnake

- Section 7 Consultation (before submitting JPA)
- Use snake-friendly silt fence
Indiana & Northern Long eared Bats

any tree larger than 3 inches in diameter shall not be cut between April 1 and September 30 of any year
Design Considerations
Watercraft Clearance

- 6.3 feet for pontoons with top down
- 5.3 feet for run-abouts
- 4.3 feet for canoes
SPAN BANKFULL WIDTH

Bankfull Channel

Ordinary High Water Mark Width

Baseflow Channel
Maintain a Low-Flow Channel
Streambank Protection

- Vegetation
- Bio-Engineering
- Riprap
- Hard structures
Riprap
Natural materials
Hydraulic Analysis

Drainage area > 2 square miles.

Required if there is any chance that your proposed structure would increase the flood elevations or water velocity compared to the existing conditions.

Examples:
- Reduction in flow area
- Change in road elevation
- Change in material type
- Change in slope
- Longer culvert or wider bridge
- Change in the entry type
Wetland Considerations

**Miss (Avoid)**

**Minimize**

**Mitigate**
MESBOAC Culvert Design

- **Match** Culvert Width to Bankfull Stream Width
- **Extend** Culvert Length through side slope toe
- **Set** Culvert Slope same as Stream Slope
- **Bury** Culvert $\frac{1}{6}$th Bankfull Stream Width
- **Offset** Multiple Culverts (floodplain ~ splits lower buried one higher one ~ 1 ft. higher)
- **Align** Culvert with Stream (or dig with stream sinuosity)
- **Consider** Headcuts and Cut-Offs
MESBOAC Culvert Design

- Match Bankfull
MESBOAC Culvert Design

- Set on Channel Slope
MESBOAC Culvert Design

- Bury $\frac{1}{6}$th of Bankfull stream width
A line connecting the thalweg riffle points from above and below the crossing site is the most accurate estimate of stream bottom.
MESBOAC Culvert Design

- Consider headcut

Use cross vanes as grade control to permanently set a channel invert
Construction Considerations
Work Isolation

• Design and Construction Critical
• Have a backup system (pumps, hoses, etc.) or plan
• Monitor discharge constantly
• Watch the weather!
Isolate Non-Work Wetland Areas
Construction Mats
Herp Friendly Stabilization
Turbidity Curtains
No equipment in Stream!
Questions