

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.

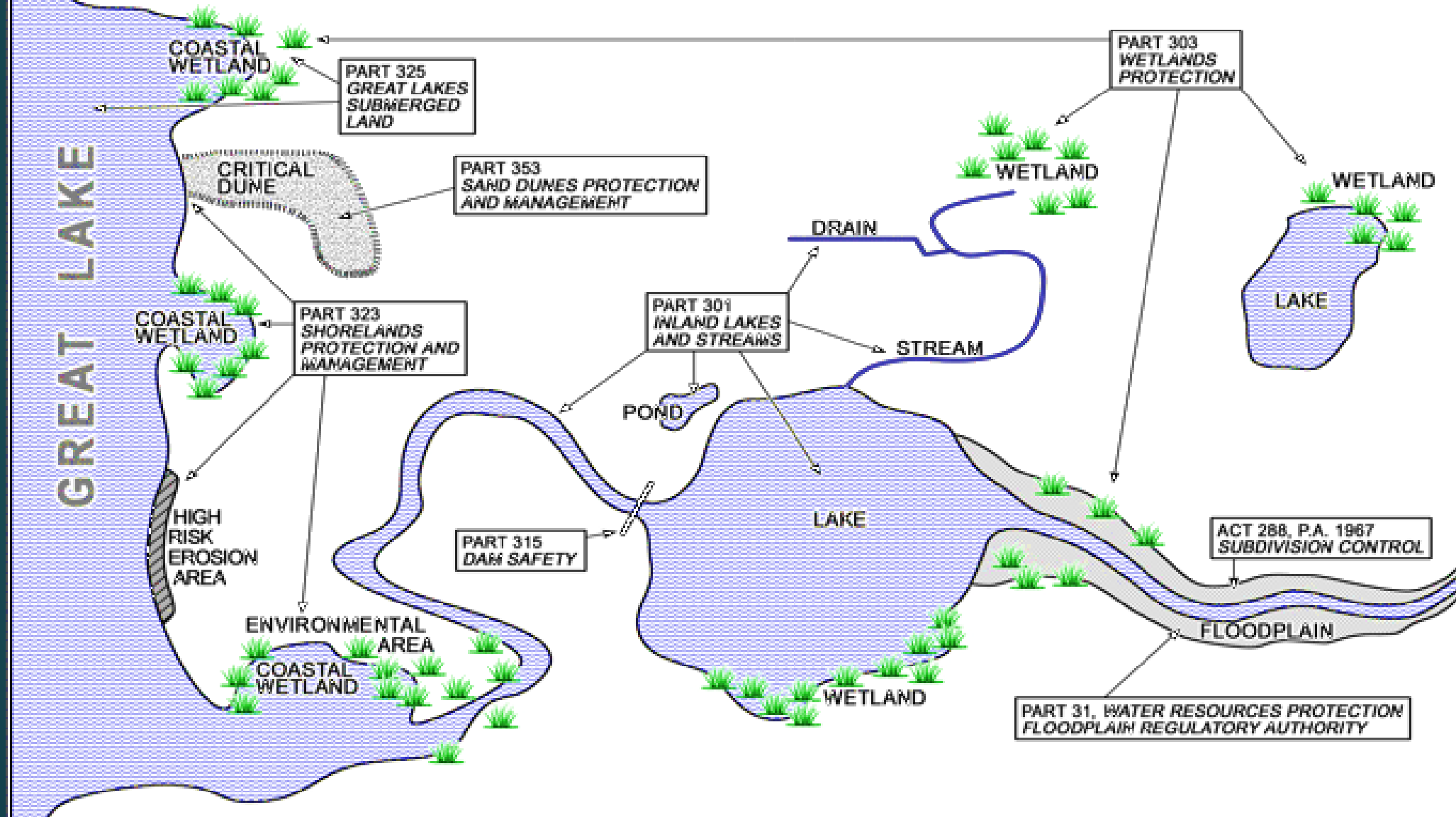


Because of this authorization, permits issued by the DEQ also provide authorization under Section 404 of the Federal Clean Water Act (except in coastal areas where federal law does not authorize Section 404 assumption).

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)

TRU - Services

Forms - Start a New Form

View All Apps, Requests and Reports

Find and submit a new application o

Form Name	Form Description
<div><div>Transportation</div></div>	
Application - Transportation Emergency Request Form	Emergency Information Sheet For Bridge or Culvert Failure
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	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
Service Request - Transportation Service Request – T&E Species & SHPO Map/Data Review (Preliminary Desktop Review)	Request a desktop review for the occurrence of threatened & 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.
Service Request - Voluntary Transportation Preliminary Review Request	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.

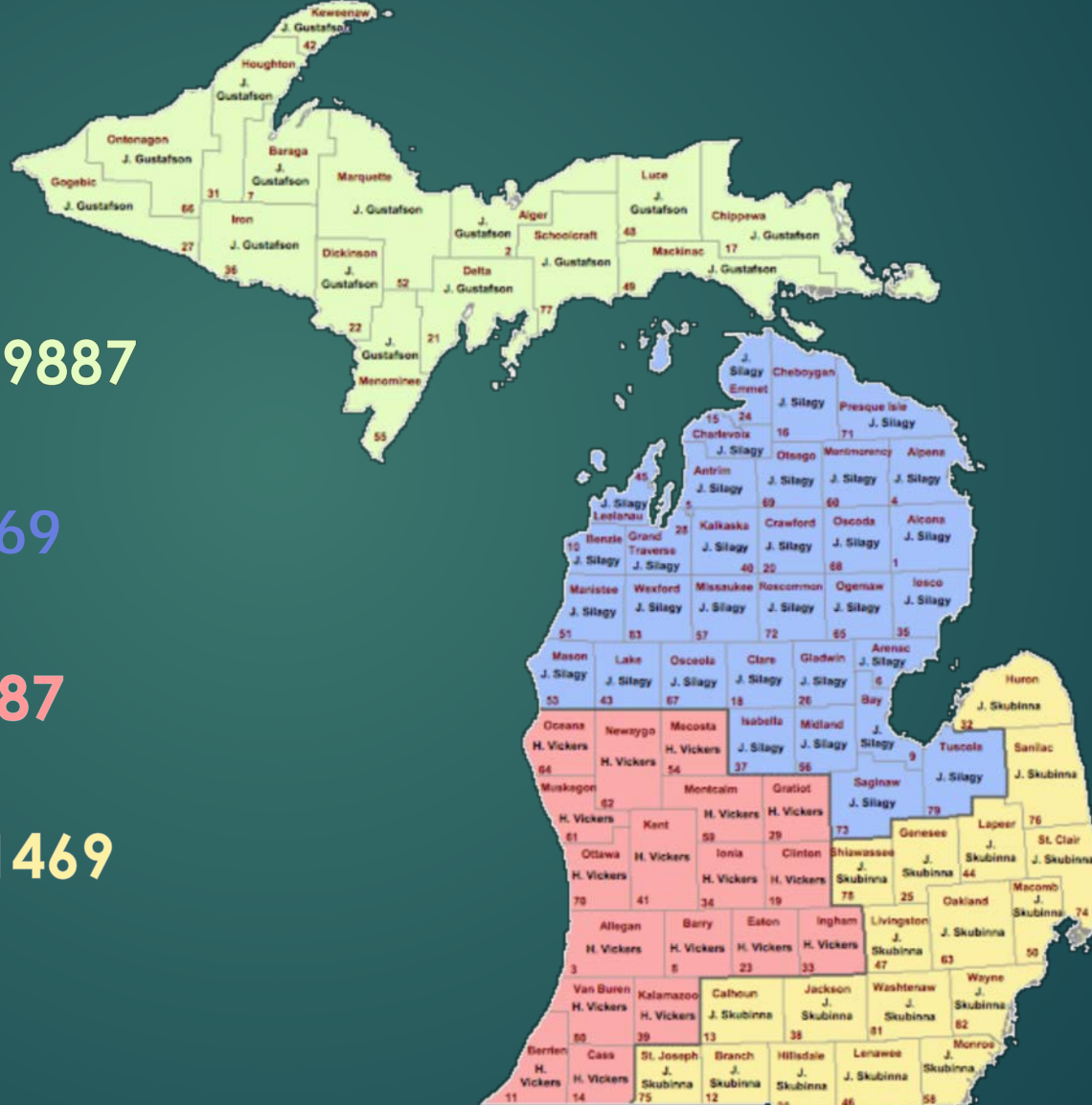
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Transportation Project Hydraulic Review Staff



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West Side

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

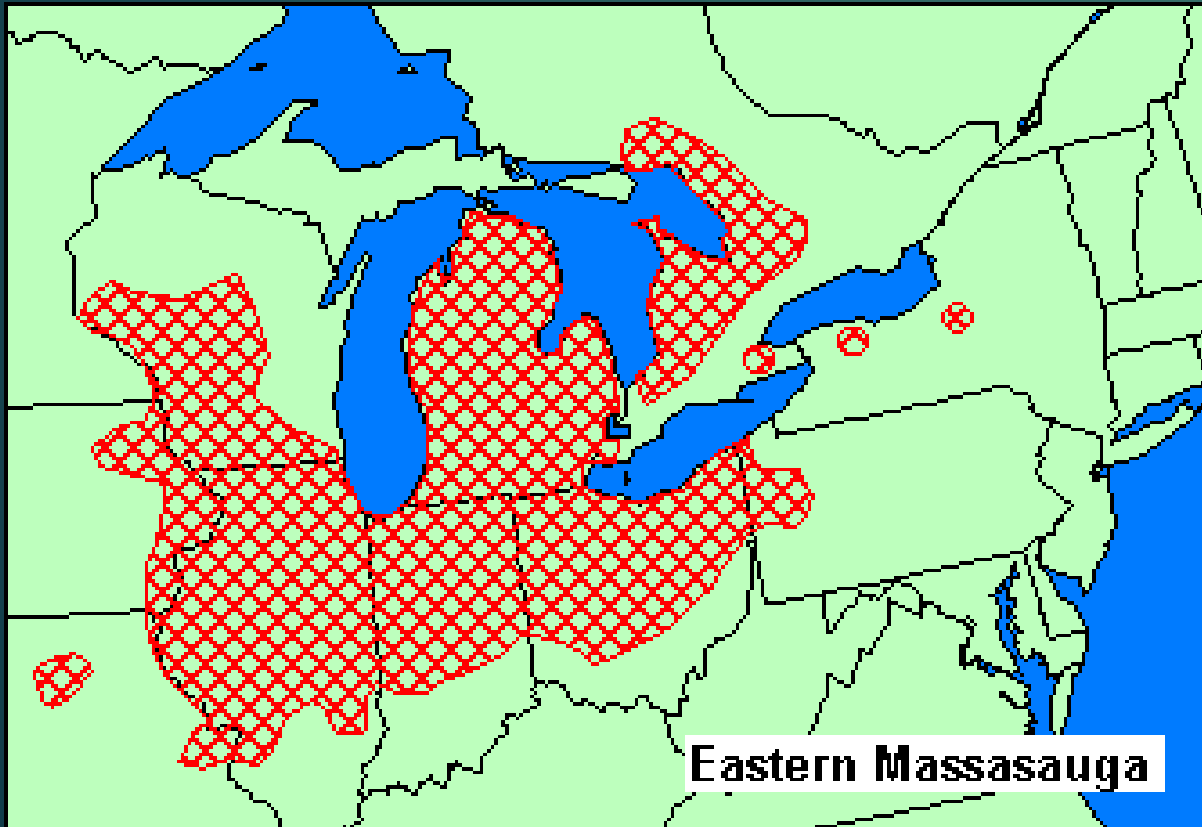
Michigan Mussel Protocol



https://www.fws.gov/midwest/eastlansing/te/pdf/MI_Freshwater_Mussel_Survey_Protocol_Nov_2018.pdf

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

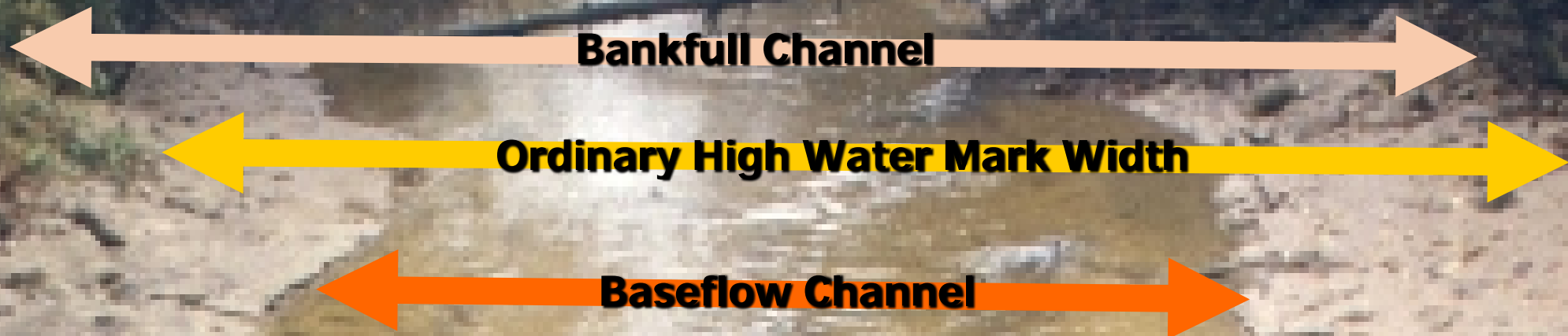


Watercraft Clearance

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



SPAN BANKFULL WIDTH



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

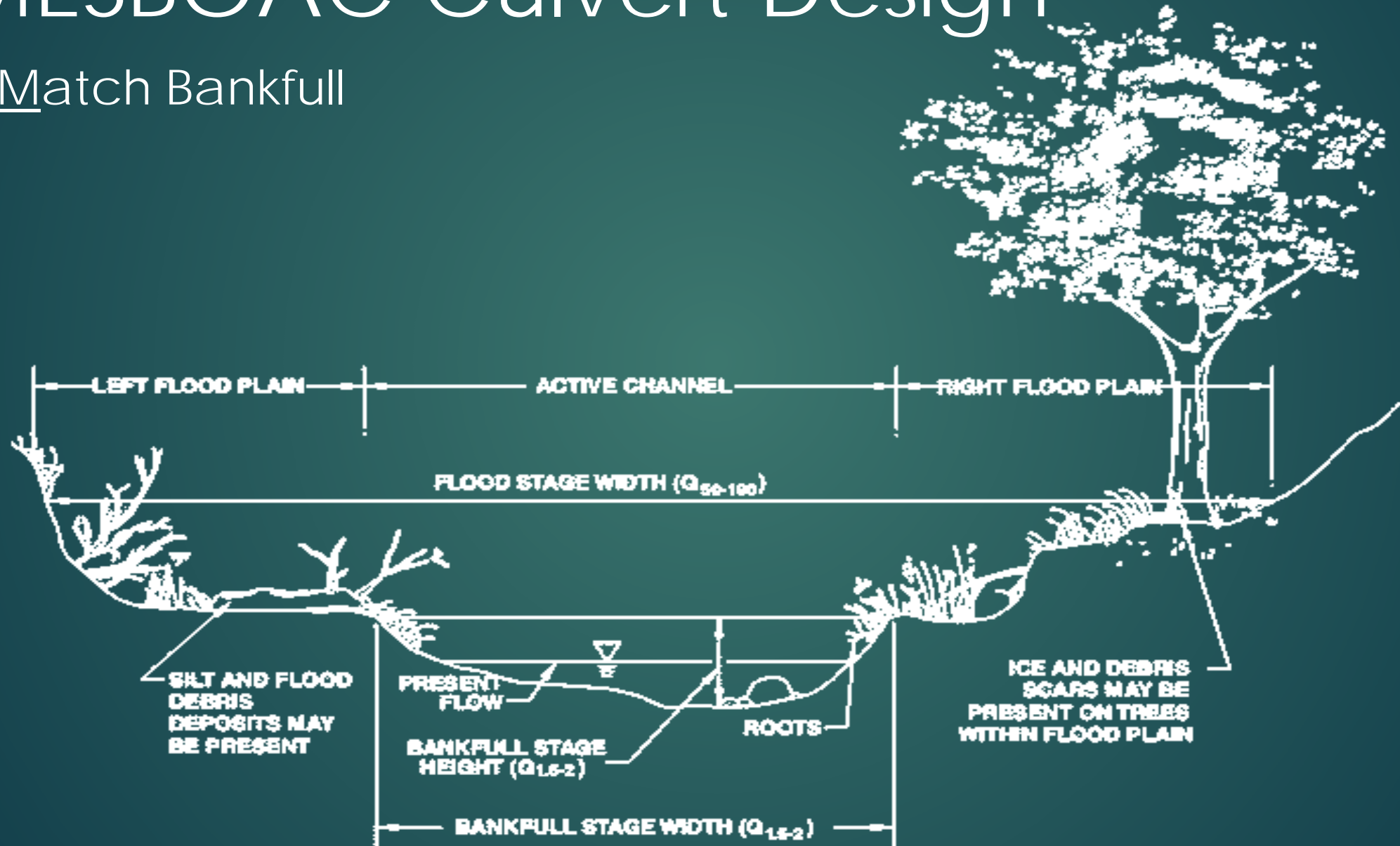


MESBOAC Culvert Design

- Match Culvert Width to Bankfull Stream Width
- Extend Culvert Length through side slope toe
- Set Culvert Slope same as Stream Slope
- Bury Culvert $1/6^{\text{th}}$ 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



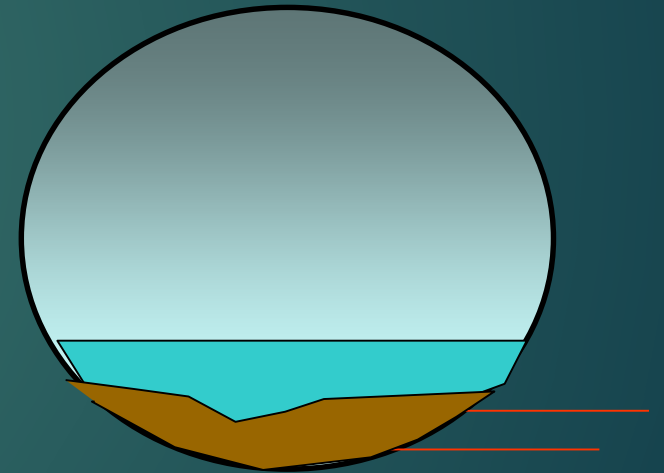
MESBOAC Culvert Design

- Set on Channel Slope

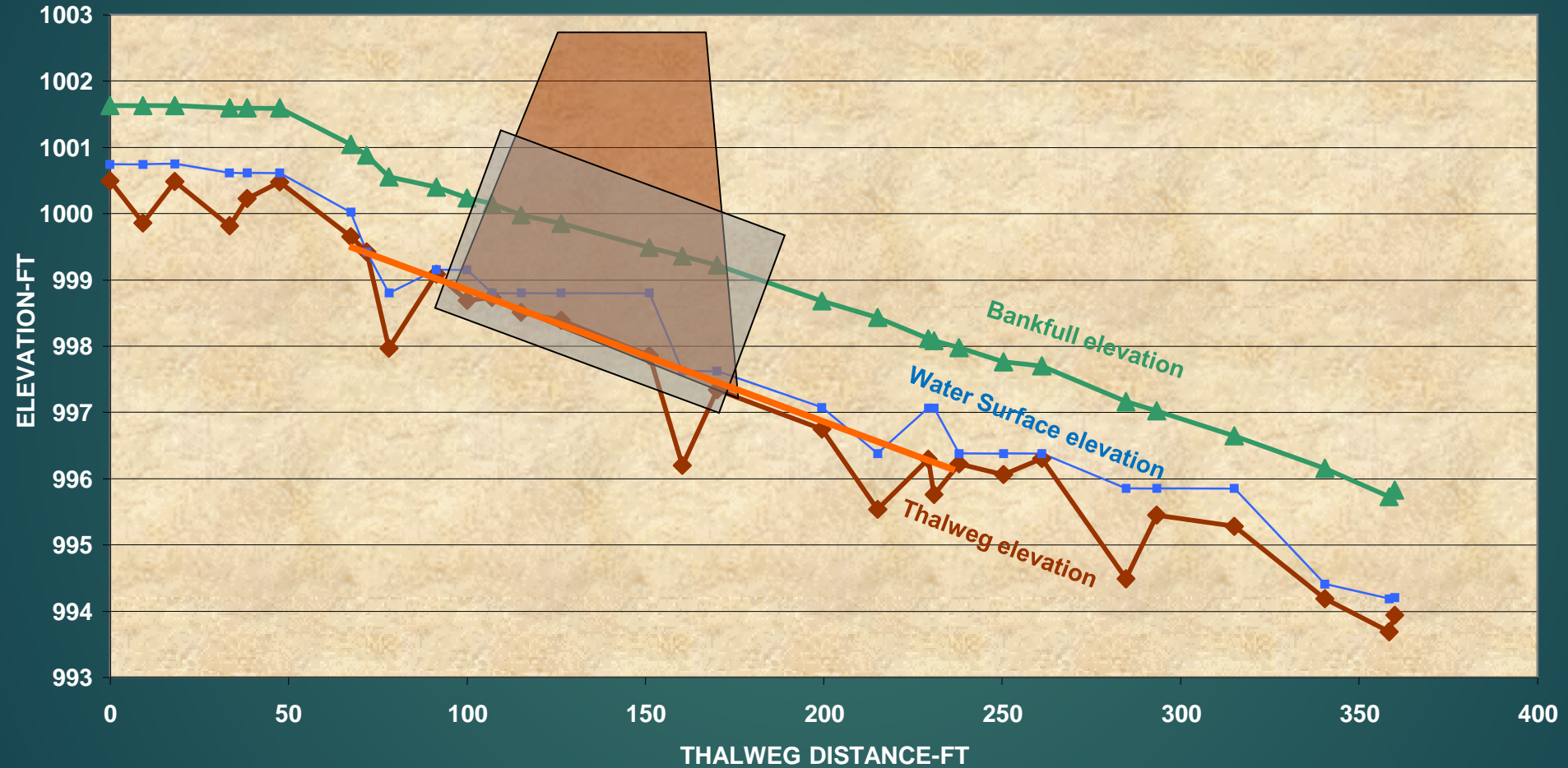


MESBOAC Culvert Design

- Bury $\frac{1}{6}$ th of Bankfull stream width



LONGITUDINAL PROFILE



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



Soil Stabilization



Herp Friendly Stabilization



Turbidity Curtains



No equipment in Stream!



Questions

