2012 SAF Training

Update on Bankfull Requirements and Stream Crossings

May 16, 2012

Michigan Department of Environmental Quality,

Water Resources Division

Highlights

- Overview of Water Resources Division Authority
- Rule & regulation basics
- Bankfull
- Applications & Permits
- Questions

Water Resources Jurisdiction

WRD administers the following Parts of the Natural Resources and Environmental Protection Act, P.A. 451 of 1994, as amended (NREPA)

- **Part 303, Wetlands Protection**
- **Part 301, Inland Lakes and Streams**
- **Part 325, Great Lakes Submerged Lands**

- **Part 31, Floodplain Regulatory Authority**
- **Part 315, Dam Safety**
- **Part 323, Shorelands Protection & Management**
- **Part 353, Sand Dune Protection & Management**

Part 301, Inland Lakes & Streams

Why are lakes & streams regulated?

- Water is a public resource
- State Legislature identified that regulated activities on lakes & streams can impact recreation, fish & wildlife, aesthetics, local government, agriculture, commerce, & industry

Cannot unlawfully impair or destroy any of the waters or other natural resources of the state

Part 301, Inland Lakes & Streams

A permit is required for:

- **Dredging**
- **Construction or repair of a permanent structure**
- **Filling**

Part 301, Inland Lakes & Streams

- No exemptions for logging or associated activities in a lake or stream
- Applies to private and public lands
- Applies to temporary or permanent structures

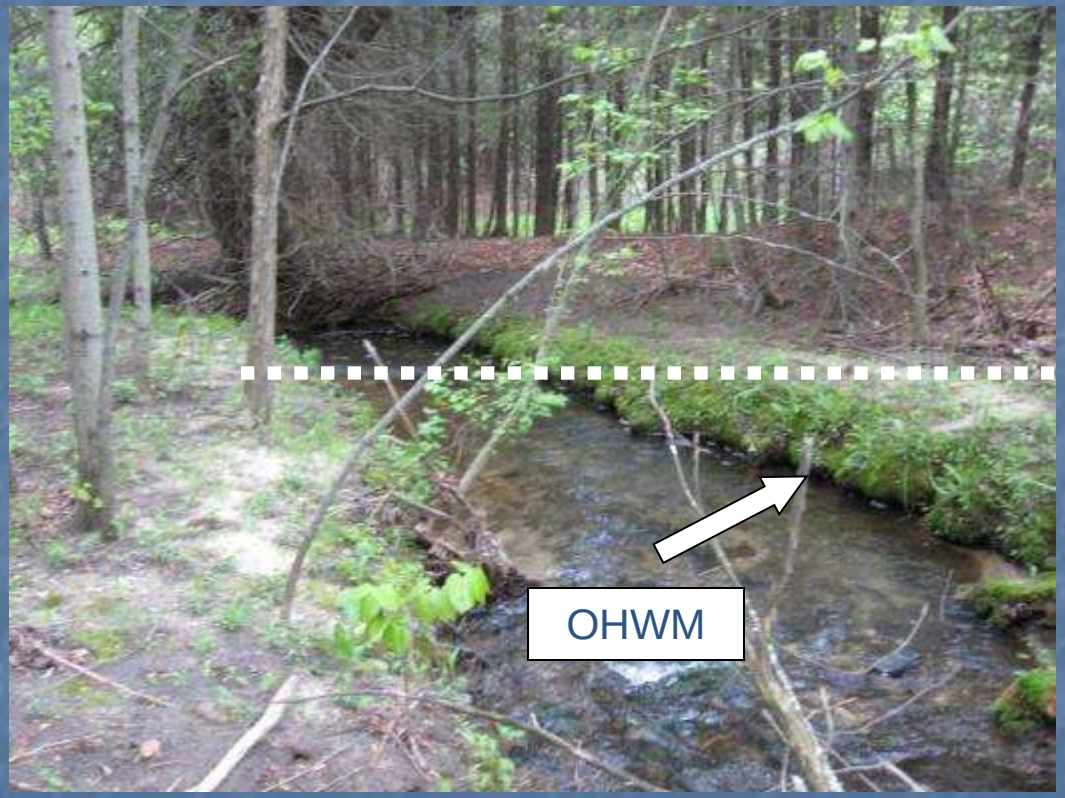
Projects Requiring a DEQ Permit

- Bridges and Culverts on permanent or intermittent streams
  - Revised Minor and General permits (August 2011) require spanning of bankfull width of stream channel
  - Main change from previous Minor Project category is no longer spanning stream channel at Ordinary High Water Mark (OHWM)

Difference Between Bankfull and Ordinary High Water Mark

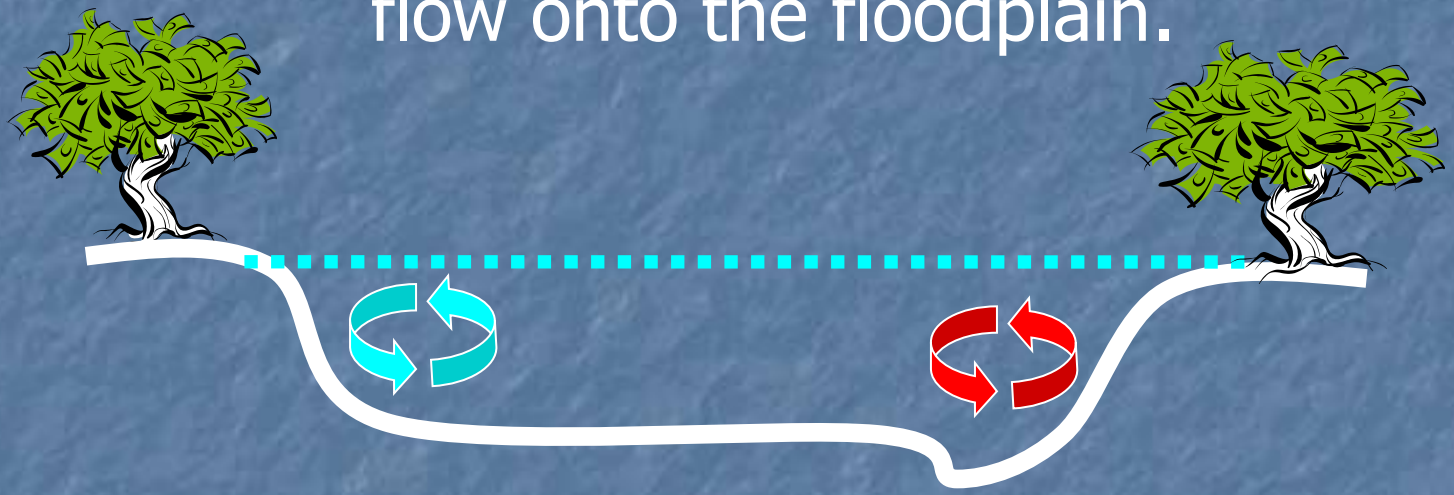
Bankfull is usually higher than the Ordinary High Water Mark.

Vegetation is not a good indicator of bankfull.

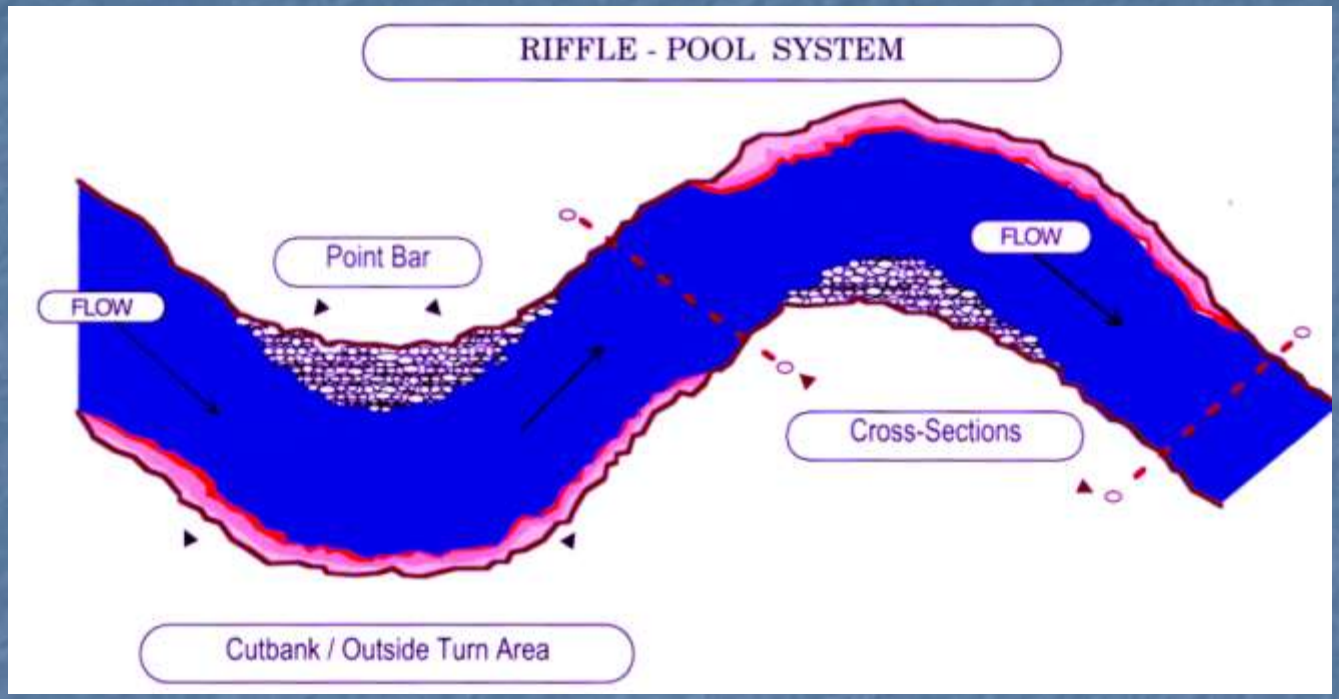


Bank Full Elevation

is the elevation at which water has filled the principal channel and just begins to flow onto the floodplain.



Maximum deposition & erosion circulation cell development



Bankfull elevation can be fairly easy to determine in streams with little to moderate entrenchment (streams with wide, accessible floodplains). With streams that are highly entrenched, determining bankfull elevation may be difficult.

The flats on top of the depositional features such as point bars are the best indication of bankfull elevation. To measure bankfull width, measure the width of the stream in the riffles (straight sections) from bankfull elevation to bankfull elevation. This measurement should be taken in the narrowest part of the stream. The riffles are the hydraulic control points on the stream, so the cross-sectional area in riffles is the minimum area needed to maintain stream stability.

Bankful Indicators

Stable Streams with low to moderate entrenchment

- First depositional flat above the waterline.
- Top of point bars.
- If no riffles (sand bed stream) measure in straight runs at narrowest part.

The bankfull elevation is considered to be synonymous with the channel forming or effective flow.

In unstable or modified channels indicators of the bankfull elevation, if present, will be found where the channel forming flow is attempting to build a new floodplain.

Stream Crossings

- Good design: clear span bridges, box culverts, elliptical culverts, properly recessed culvert (1/6th bankfull width)
- Bad design: multiple culverts, under sized culverts, poorly installed culverts (i.e. crushed or perched)

Stream Crossings; Why Bankfull?

- Good stream crossings and associated road construction will:
  - Minimize unnatural deposition and erosion in the stream, which protects fish and wildlife
  - Maintains stream stability or reduces the stream from becoming flashy during storm events, which protects property owners
  - More cost effective with reduced maintenance and/or repairs due to road wash outs

Applying for a Permit

- All info & resources can be found on-line
- Joint Permit Application (JPA) form for all projects
- Individual Permits ($500); Minor Permit (MP) and General Permit (GP) categories ($50 filing fee); $100 fee if drainage area is >2 square miles (Part 31)
- Incentives for meeting MP/GP criteria
  - Expedited review by field staff
  - No public noticing of project and 20 day PN period
  - Reduced filing fee
  - Desk top review (i.e. no field inspection in certain instances)
  - Permittable projects

Minor Project (MP) and General Permit (GP) Categories

- The DEQ created multiple categories for small project which, if done using BMP's, assume to have minimal impact on the aquatic resources individually and cumulatively
- MP #8 Culverts – Large
- GP C Clear Span Bridges
- GP D Small Culverts

Example of revised GP category

C. Clear Span Bridge

Category applies to:
- ☒ *Part 301, Inland Lakes and Streams*
- ☐ *Part 303, Wetlands Protection*
- ☐ *Part 325, Great Lakes Submerged Lands*

New or replacement clear span bridges that meet all of the following:

- Any abutments or foundations must be placed a minimum of 1.2 times the bankfull width.
- The lowest bottom beam elevation is at or above the natural ground elevations on either bank and spans the entire bankfull width.
- No filling or dredging in the bankfull channel is included in this category, unless approved by the DEQ based on site conditions.
- The structure will allow passage of watercraft that could be expected to navigate the water involved.
- The bridge shall be anchored to prevent floatation during periods of high water.

Bankfull is the width of the stream that corresponds to the depth where water fills a main channel to the point of overflowing. In instances where the applicant is unsure of the bankfull width, it is recommended that the applicant contact DEQ staff and request a preapplication site review. In legally established drains (except those constituting mainstream portions of certain natural watercourses identified in rule), if bankfull indicators are not present, the structure span may be determined by calculating the 1.5-year stream width at the 1.5-year flow that is based on a stable stream width and depth.

Where to find the MP/GP criteria

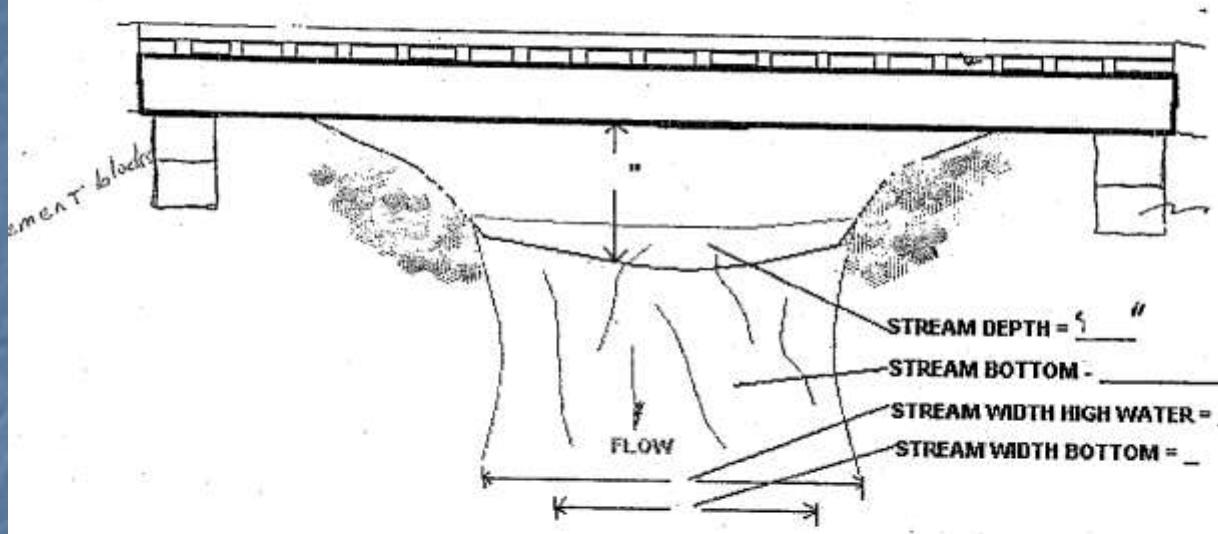
- www.michigan.gov/jointpermit
  - Application
  - Revised MP/GP categories
  - Sample drawings
  - Much more additional information

Application Review

A complete application will include the following:

- Construction sequence (is there excavation to prep the site? Is the stream crossing temporary or permanent?)
- Dimensions (length of culvert, diameter, cubic yards of rock armoring)
- Top view & Cross section of existing and proposed site conditions
- Colored photos of the site

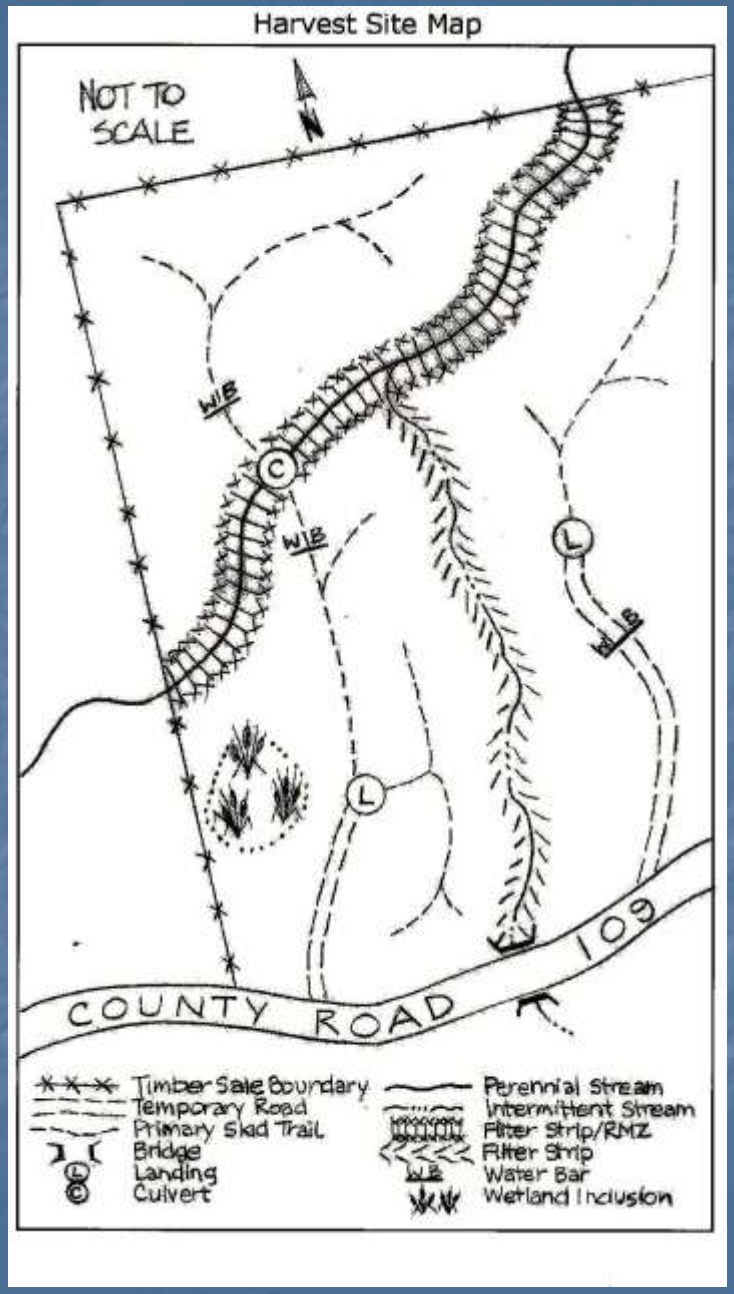
BRIDGE CROSS SECTION



DEQ FILE #

Application Review

- Under statute there can be a total of 90 days to review the application (30 days for "administrative completeness" + 60 days for the field review
- Applications meeting MP/GP categories usually are permitted within 30 days
- A permit can be issued for a max 5 years


Harvest Site Map
NOT TO SCALE
N
WB
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COUNTY ROAD 109
Timber Sale Boundary
Temporary Road
Primary Skid Trail
Bridge
Landing
Culvert
Perennial Stream
Intermittent Stream
Filter Strip/RMZ
Filter Strip
Water Bar
Wetland Inclusion

Questions?

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