

What to Know Before You Get in the Water

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Mussel Survey Requirements

- ☐ Background
- ☐ Survey Data Requirements and Reporting
- ☐ Survey Effort

Permitting Overview

- ☐ Design details
- ☐ Upcoming changes

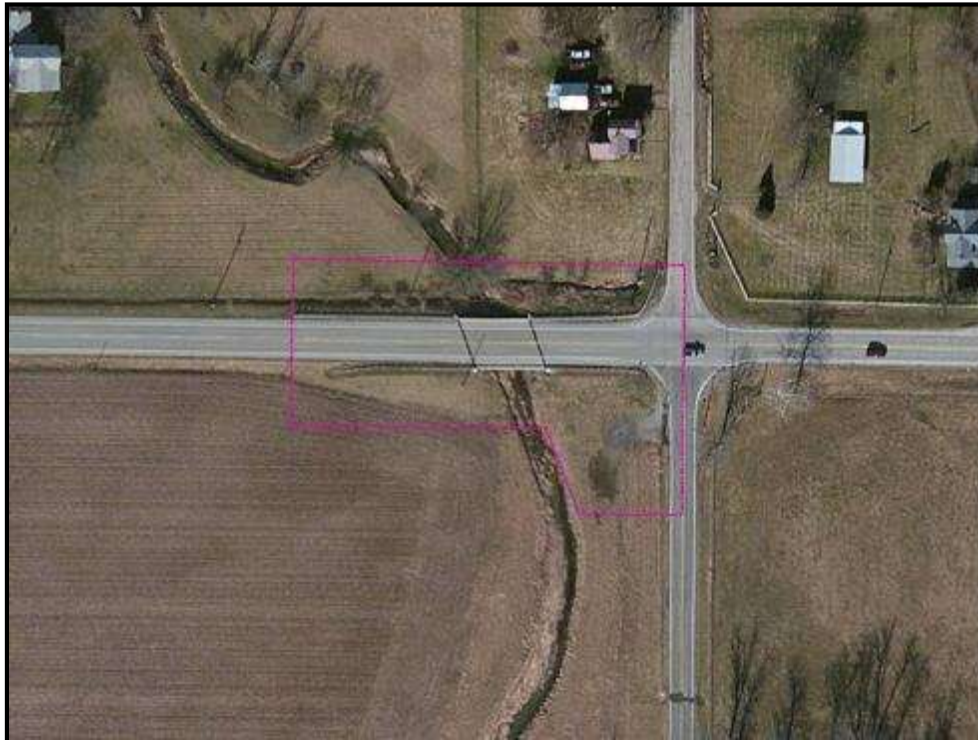
Project Examples



Establishing the Study Area

Things to Keep in Mind:

- Construction Access
- Temporary R/W
- May not be the same as field survey limits
- Balance between too little and too much



Field Data Collection

☐ GPS Units:

- ☐ Trimble R1 Unit
- ☐ Mapping Software
- ☐ Compatible Device



☐ Wetlands:

- ☐ Soil Auger
- ☐ Munsell Soil Chart
- ☐ Plant Identification



☐ Bat Habitat:

- ☐ DBH Tape



☐ Stream:

- ☐ D-frame Dip net
- ☐ Measuring tool
- ☐ Other specialized



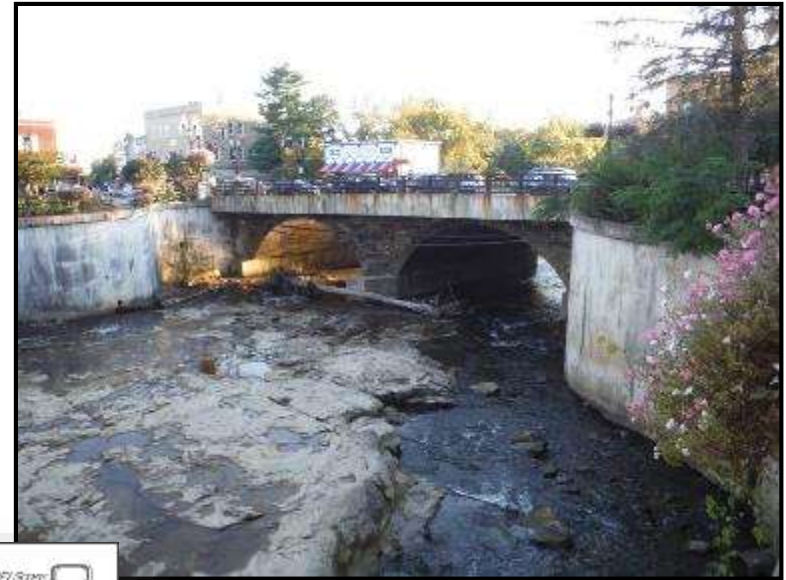
Streams

□ Classification

- Primary Headwater Habitat Streams
 - <1 mi² drainage area
- Headwater Habitat Streams
 - >1 mi² drainage area

□ Habitat Evaluation

- Stream characteristics
- Aquatic species habitat



CHLEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

Stream # 10000000 Date 10/10/00 Station 1000

Stream Name 10000000 County 1000 State 1000

1. **WATER QUALITY** (Check all that apply)

Color (PCU)	Temperature (°C)	Dissolved Oxygen (mg/L)	pH
☐	☐	☐	☐

2. **WATER QUALITY** (Check all that apply)

Flow (cfs)	Velocity (ft/s)	Depth (ft)	Width (ft)
☐	☐	☐	☐

3. **WATER QUALITY** (Check all that apply)

Flow (cfs)	Velocity (ft/s)	Depth (ft)	Width (ft)
☐	☐	☐	☐

4. **WATER QUALITY** (Check all that apply)

Flow (cfs)	Velocity (ft/s)	Depth (ft)	Width (ft)
☐	☐	☐	☐

5. **WATER QUALITY** (Check all that apply)

Flow (cfs)	Velocity (ft/s)	Depth (ft)	Width (ft)
☐	☐	☐	☐

6. **WATER QUALITY** (Check all that apply)

Flow (cfs)	Velocity (ft/s)	Depth (ft)	Width (ft)
☐	☐	☐	☐

7. **WATER QUALITY** (Check all that apply)

Flow (cfs)	Velocity (ft/s)	Depth (ft)	Width (ft)
☐	☐	☐	☐

8. **WATER QUALITY** (Check all that apply)

Flow (cfs)	Velocity (ft/s)	Depth (ft)	Width (ft)
☐	☐	☐	☐

9. **WATER QUALITY** (Check all that apply)

Flow (cfs)	Velocity (ft/s)	Depth (ft)	Width (ft)
☐	☐	☐	☐

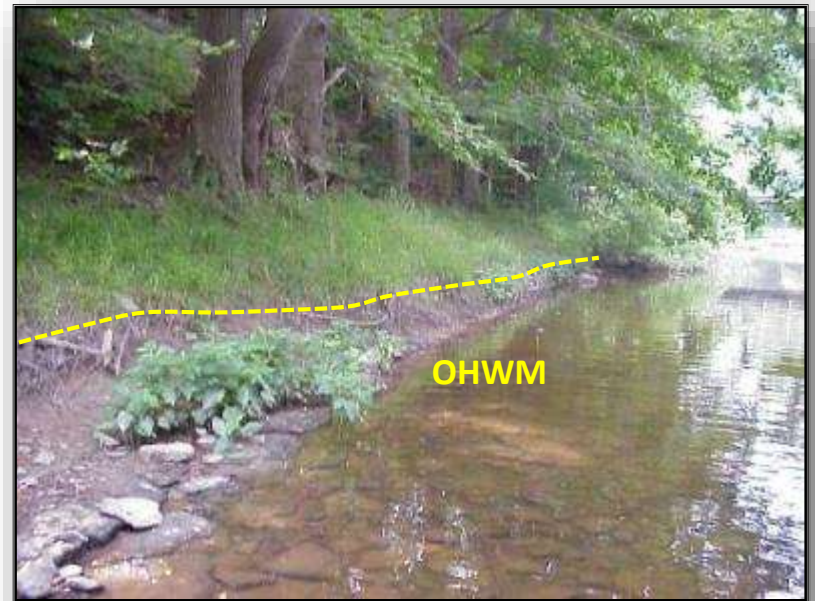
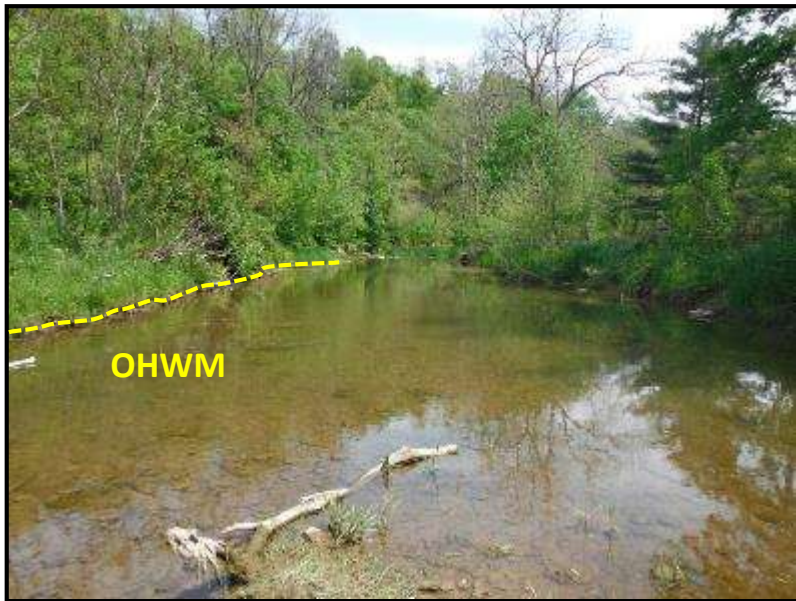
10. **WATER QUALITY** (Check all that apply)

Flow (cfs)	Velocity (ft/s)	Depth (ft)	Width (ft)
☐	☐	☐	☐



Ordinary High Water Mark (OHWM)

- Any **channel** which carries water for at least a minimal period of time and has an **ordinary high water mark** (OHWM)
- **OHWM** – caused by fluctuations in water levels that result in:
 - A line impressed on the bank
 - Change in soil characteristics
 - Lack of vegetation and/or vegetation transition



Wetlands

- Definition:

- Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions [40 CFR 230.3 9(t)]

- A wetland **must** possess:

- Hydric soils
- Indicators of Hydrology
- Hydrophytic vegetation



Wetlands

- ❑ **Hydrology :**
 - Duration of inundation and saturation
- ❑ **Soils:**
 - Must contain hydric indicators
- ❑ **Vegetation:**
 - Must have dominance of hydrophytic vegetation



Spring



Summer

Wetland Examples



Ditches

Ditch Definition: Conveyances that possess a **constructed defined channel** and transports water

- ☐ In Ohio, most ditches function to provide drainage from an area (roadway, agricultural field, residential area, etc.)

- ☐ Jurisdictional ditch:
 - Possess OHWM (not fully vegetated), or
 - Constructed in a hydric soil unit to drain a wetland at the time of construction
 - Must be a Relatively Permanent Water (RPW)
 - Subject to Clean Water Act regulation

- ☐ Non-jurisdictional ditch/conveyance:
 - Do not possess an OHWM (fully vegetated)
 - Not a captured (channelized) stream or constructed to drain a wetland
 - Can act as a non-jurisdictional conveyance for abutting or adjacent wetlands



Ditch Examples



Other Resources

Ponds, Lakes, Reservoirs

- ☐ Can be jurisdictional
- ☐ Can host T&E species and/or habitat
- ☐ Can also have wetlands associated with them



T&E Species Overview

❑ ODNR NHDB Request

❑ Mussels

- Background
- 2016 Ohio Mussel Survey Protocol
- Survey Effort and Coordination

❑ Bat Species

- Indiana bat (*Myotis sodalis*)
- Northern long-eared bat (*Myotis septentrionalis*)
- Habitat Documentation



FACT: In Ohio, 500 animals and plants including mammals, birds, reptiles, amphibians, mussels, fishes, plants, and insects are listed



T&E Species Overview



Mussels

❑ All native mussels are protected by law in Ohio (OAC 1533.324)

❑ Ohio is inhabited by 10 federally listed mussel species:

- Pink mucket
- Rabbitsfoot
- White cat's paw
- Purple cat's paw
- Northern riffleshell
- Rayed bean
- Sheepnose
- Snuffbox
- Fanshell
- Clubshell



Mussels

- ❑ Additionally, 14 state listed mussel species occur in Ohio
- ❑ North America has the greatest diversity of freshwater mussels in the world
- ❑ Historically the Midwest has the greatest number of mussels (Ohio, Missouri, Illinois, Indiana, Minnesota, Wisconsin, and Iowa)
- ❑ 6 Extinct species
- ❑ 11 Extirpated species



2016 Ohio Mussel Survey Protocol

- ☐ Developed by Ohio Department of Natural Resources and U.S. Fish and Wildlife Service (adopted from West Virginia DNR)
- ☐ First version was released in 2013
- ☐ Categorizes Ohio rivers/streams into five categories:
 - Unlisted – Drainage area >10 square miles
 - Group 1- small streams, federally listed species not expected
 - Group 2- small streams, federally listed species expected
 - Group 3- large rivers, federally listed species not expected
 - Group 4- large rivers, federally listed species expected



Group 4 Example

Muskingum County:

Muskingum River

Other Examples:

Scioto River*

Ohio River*

Great Miami River*



Group 3 Example

Cuyahoga County:

Cuyahoga River

Other Examples:

Lake Erie

Maumee River *

Ohio River*

Chagrin River*



Group 2 Example

Franklin County:

Big Darby Creek

Other Examples:

Killbuck Creek

Olentangy River *

Stillwater River*

Swan Creek*



Group 1 Example

Delaware County:

Scioto River*

Other Examples:

Old Woman Creek

Big Walnut Creek

Chagrin River*

Mad River*



Unlisted Examples



Wood County:

Cedar Creek

Drainage Area = 13.4 square miles



Madison County:

Bradford Creek

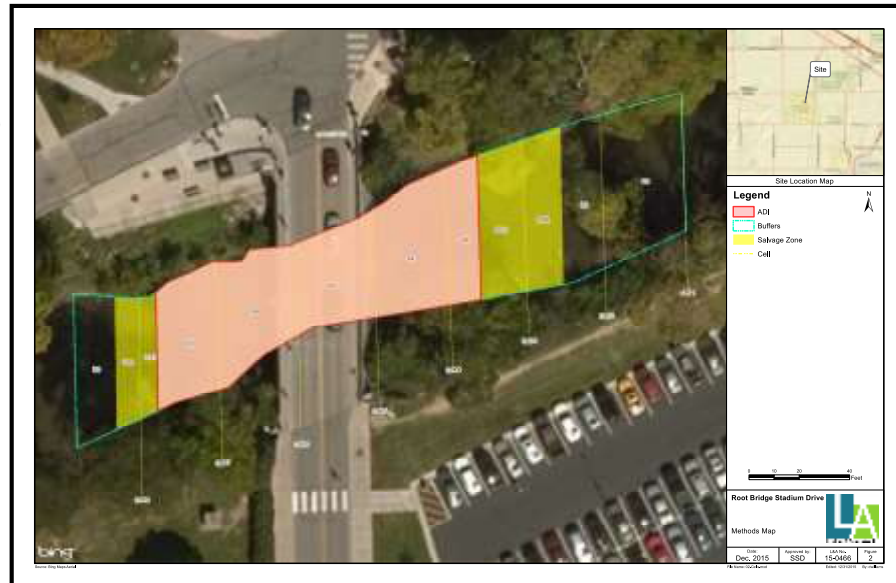
Drainage Area = 7.31 square miles

Mussel Surveys

- ❑ **Survey season**
 - **May 1st – October 1st**
- ❑ **Reconnaissance survey**: used on Group 1 and Unlisted streams with a drainage area >10 square miles to determine presence/absence
 - If live or fresh dead mussels found a survey and relocation required prior to construction
- ❑ **Group 2, 3, and 4 streams require survey and relocation prior to construction**

- ❑ **Various survey methods permitted:**

- **Cells**
- **Transects**
- **Phase 1**
- **Phase 2**



Mussel Surveys Special Considerations

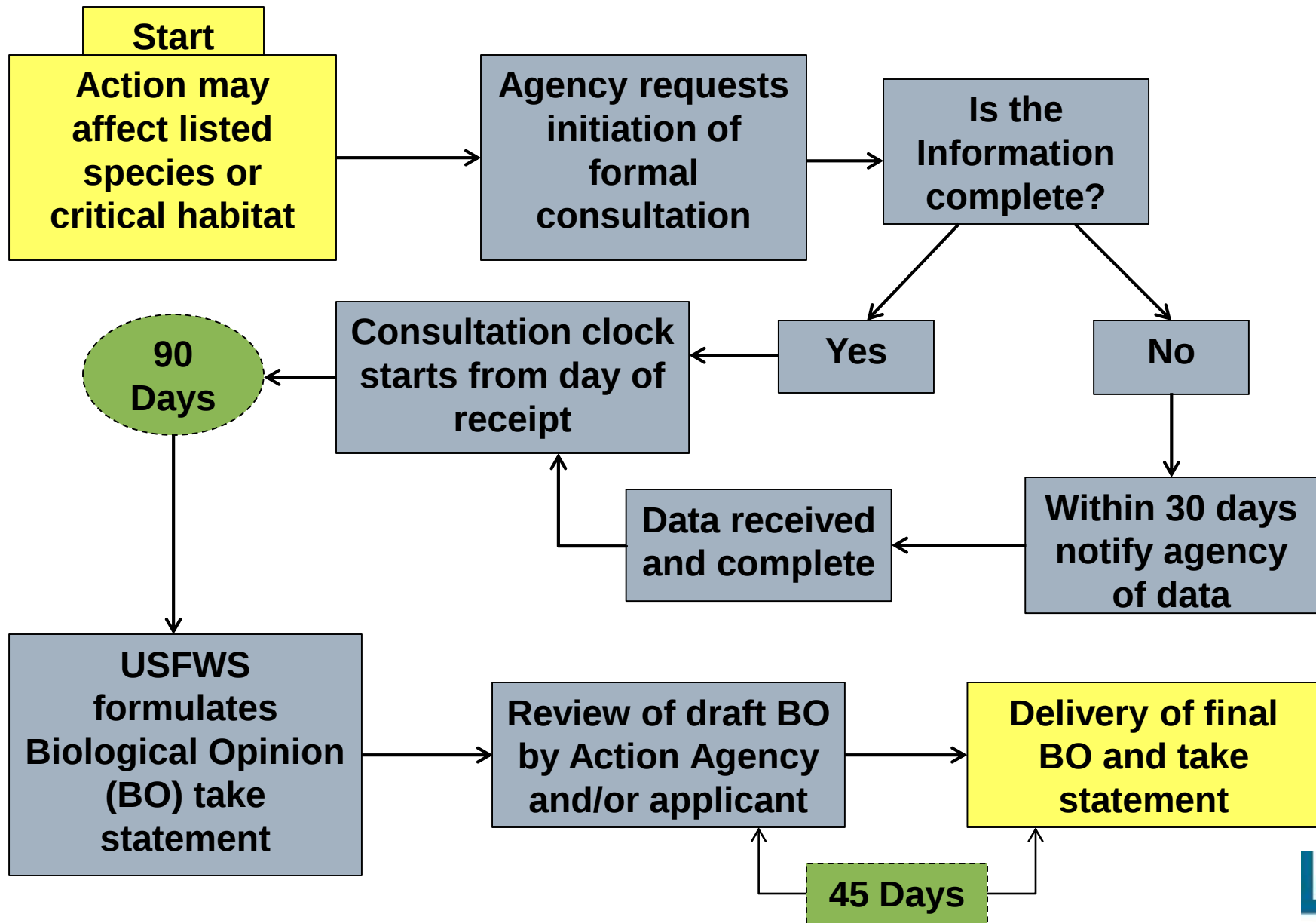
- ❑ Survey season
 - May 1st – October 1st
- ❑ Highly weather dependent
- ❑ USFWS coordination (Group 2 and 4 streams)
- ❑ Intensive survey efforts based on depth, flow, visibility, etc.
- ❑ Relocations valid for two years, survey data valid for five years



Mussel Surveys

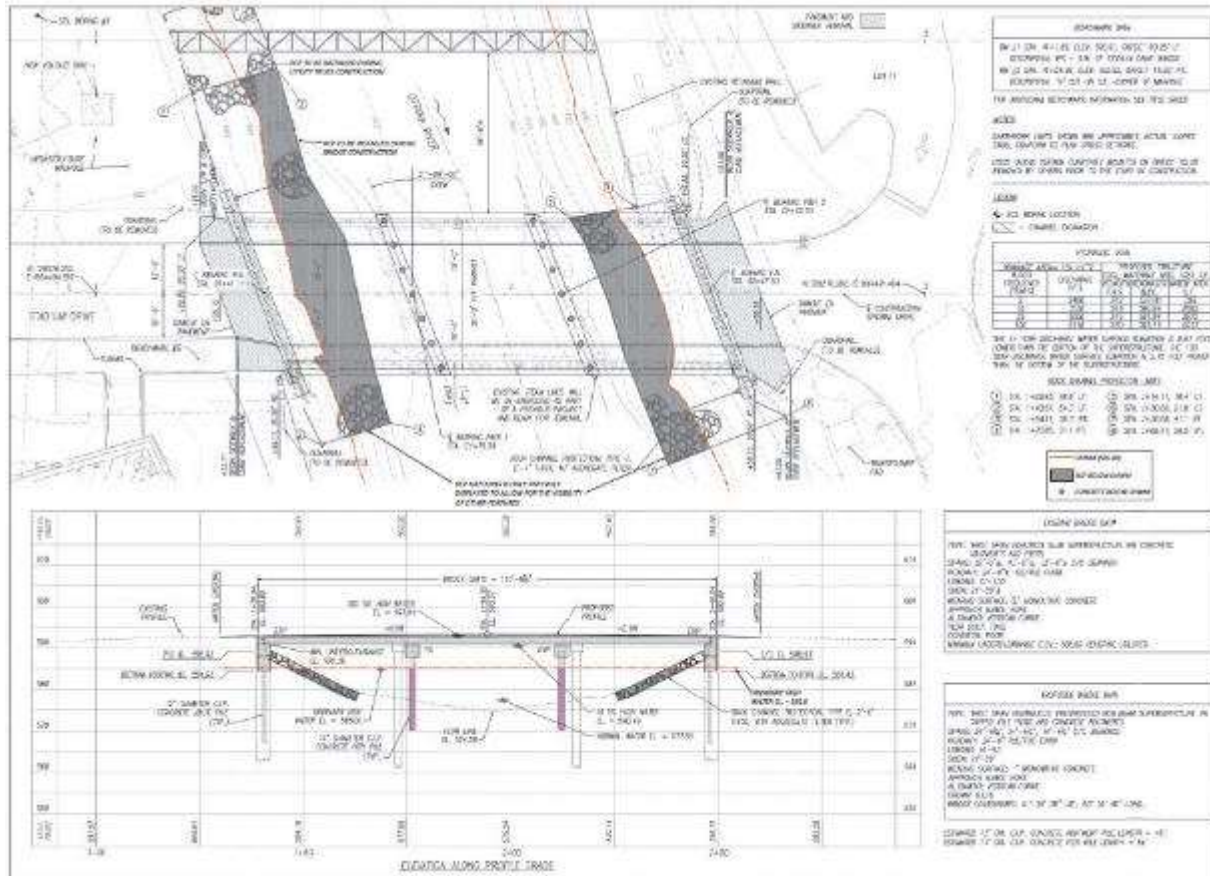


BA & BO Process



Waterway Permitting

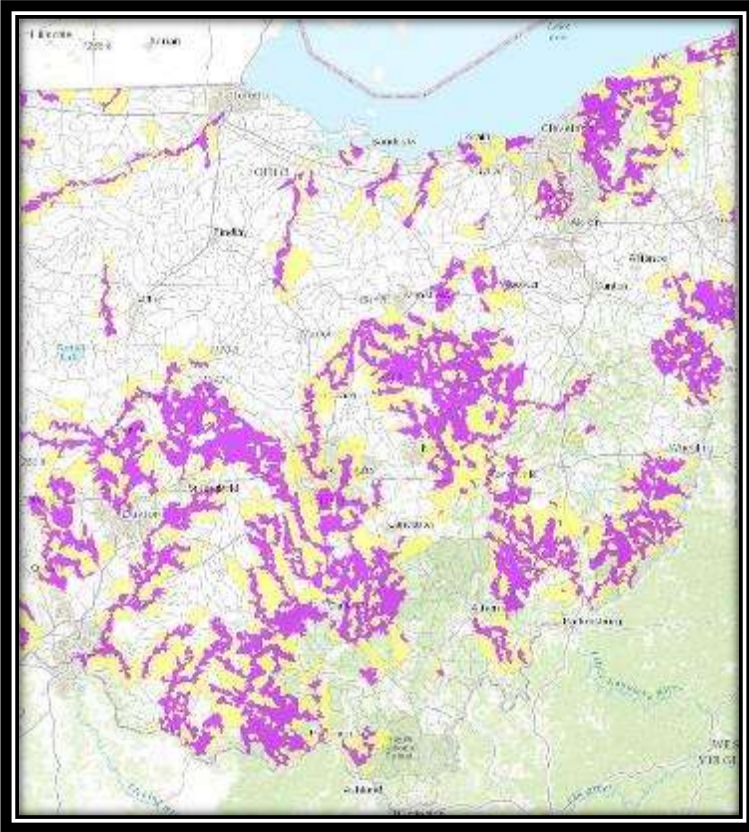
What's Needed for Waterway Permit?



- ☐ Plans showing impacts
 - after Stage 2 or similar submittal
- ☐ Quantities of fill including temporary
- ☐ OHWM depicted
- ☐ De-watering method
- ☐ Good project description

Times are a Changing...

Changes Related to Waterway Permitting



- ☐ Nationwide Permits expiring in March 2017
- ☐ Proposed Ohio EPA 401 regulations
 - Projects that have stream impacts and would've previously qualified for a NWP now may not be eligible
- ☐ Stream mitigation in-lieu fee

Project Example- OBPP

Ohio Bridge Partnership Program



- ❑ Completed ecological services for 64 bridge locations across the state in FY15 and FY16
- ❑ All were design-build projects with quick turn arounds
- ❑ Also completed mussel surveys at 13 locations



Project Example- Root Bridge

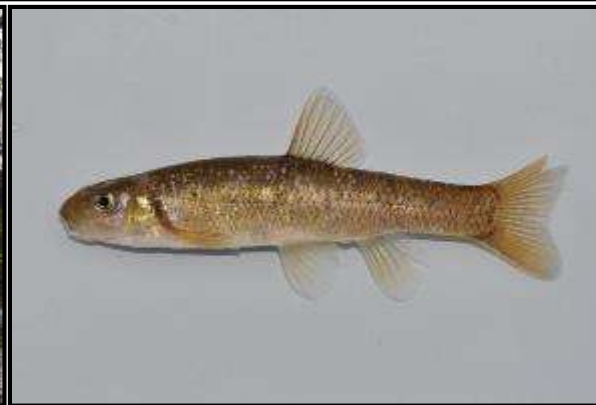
University of Toledo Root Bridge Replacement

- ☐ Ecological Resources Coordination
- ☐ Section 404 PCN
- ☐ Group 3 Mussel Survey
- ☐ Cultural Resources Review



Project Example- Old Troy Pike (Fund Swap)

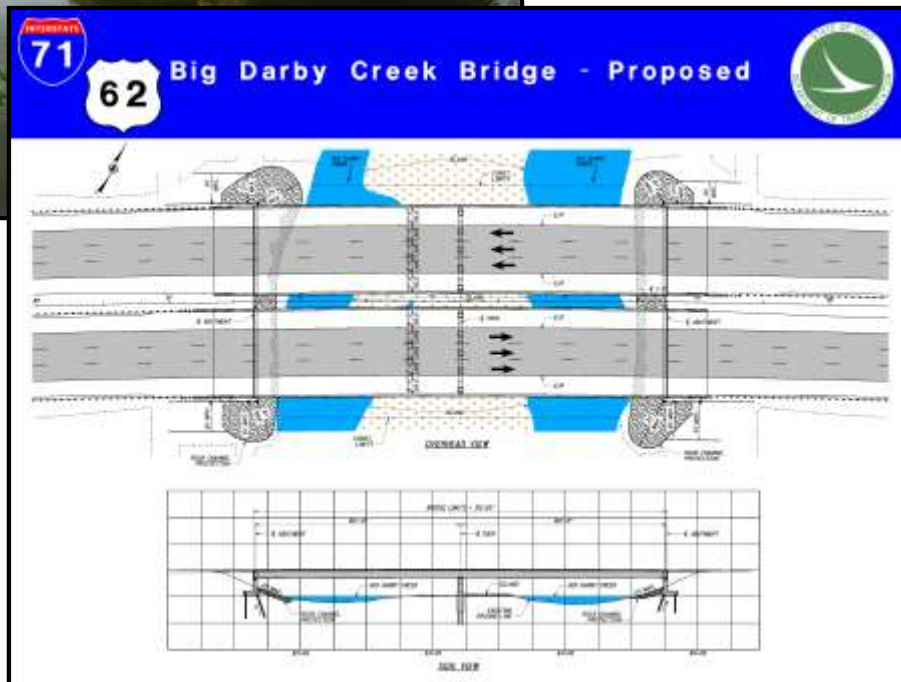
Old Troy Pike Bridge Replacement



- ☐ **Federal/State Funding Exchange Program**
 - No impacts to historic structures or bridges
 - Does not require individual 401 permit
 - Does not impact Category 2/3 Wetlands
 - Does not impact Endangered Species
- ☐ **Western Tonguetied Minnow coordination**
- ☐ **Group 1 Reconnaissance survey**

Project Example- FRA-71-0.00

FRA-71-0.00 PID 93496



- ☐ Interstate Improvement Project
- ☐ Three Bridge Alternatives Developed
- ☐ Impacts to National Scenic River
 - Required Formal Consultation with USFWS
 - Coordination with multiple agencies including: ODOT, FHWA, NPS, ODNR, USFWS, Metroparks, OhioEPA, USACE
- ☐ New Piers to be located on existing island
- ☐ Temporary in-stream closures only



Questions and Contact Info.

Questions?



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