

Introduction to Waterway Permitting for Construction

Ecology and Waterway Permitting Office

This training is designed to provide an overview of waterway permitting for Area Engineers, Project Engineers and Project Supervisors. This is what will be covered.

Outline

- What is a regulated resource?
- What activity is regulated?
- Waterway Permits
- Permitting Process
- Permit Conditions
- Violation Identification
- Violation Response
- Other Considerations

Floodway

- river or stream channel and portions of the adjoining floodplain
- required to efficiently carry and discharge the peak flow of the regulatory flood
 - Peak flow = 100 year discharge
- floodplain boundary is used when the floodway is not mapped



The Indiana Department of Natural Resources (IDNR) regulates impacts to the floodway through the Construction in a Floodway permit. A primary concern evaluated during their review of a permit application is whether the cross-sectional area under the structure will be reduced. In addition, mitigation is required for removal of trees greater than 10 inches diameter breast height (dbh) in the floodway or by acres impacted. Depending on the location, the mitigation ratio can be as high as five trees for each one impacted.

When the project has a Construction in a Floodway (CIF) permit and a utility company requests approval to remove additional trees in order to relocate utility lines the request should be evaluated by reviewing the location, quantity or acreage of trees to be removed, and time of year. Discuss the request with the Ecology and Waterway Permitting Office (EWPO) Permit Specialist prior to authorizing the tree removal. This may require mitigation for the additional trees removed and should also be evaluated for compliance with the Indiana Bat and Northern Long-Eared Bat restrictions.

Stream

- 1) Has a defined bed and bank and conveys water for short periods or year round
- 2) Includes natural, relocated and channelized streams, encapsulated channels and ditches
- 3) Is a feature regulated by USACE and IDEM



The top photo looks like a trail through the woods, but it is a stream that only contains water for a short period during and after rainfall events. It occurs at a frequency to prohibit growth of understory vegetation.

Ordinary High Water Mark (OHWM)

- A line on the shore established by fluctuations of water and indicated by
 - clear natural line impressed on bank
 - destruction or absence of terrestrial vegetation
 - vegetation matted down, bent or absent
 - leaf litter disturbed or washed away
 - abrupt change in plant community
 - presence of litter or debris
 - sediment deposition
 - water staining



The Ordinary High Water Mark (OHWM) is used by all of the regulators to establish a jurisdictional boundary. It is used by USACE and IDEM to determine the boundary between the linear water feature and the upland or wetland area. See the following slide. The IDNR also uses it as a boundary. For

example, the CIF permit may state that “all work and equipment shall remain above the OHWM.” If work must occur below the OHWM, construction must be temporarily halted until the appropriate environmental permits can be obtained.

Wetland

- Three characteristics –
 - Wetland vegetation
 - Wetland soils
 - Water saturation from surface or groundwater frequent enough to support wetland vegetation and soil



This is a topographic map with the National Wetland Inventory information added that can be found in the project waters report. It is one tool that we use to evaluate a project site for the presence of wetlands. One side of the bridge is a wetland and the other side is an upland. This was field verified when collecting site information for the waters report. For this site, access was limited to the upland area to place scour protection below the bridge. No impacts to the wetlands was allowed. Many of our roadside wetlands can be identified by cattails, phragmites, willows or other vegetation that prefers moist conditions.

Don't be concerned if you're unsure about whether a feature is regulated or not. There are a lot of regulated resources that are hard to visually identify even to a trained eye. Wetlands are especially difficult and are often only confirmed after analyzing the soil. The waters report is the first resource to check and don't hesitate to phone your Permit Specialist.

Jurisdiction

Waters of the U.S. (WOTUS) –

- includes waterways and wetlands
- USACE - federal
- IDEM - state

Waters of the State/Isolated Wetland – IDEM

Hierarchy

USACE 404, IDEM 401 WQC, IDEM IsolW, non-regulated

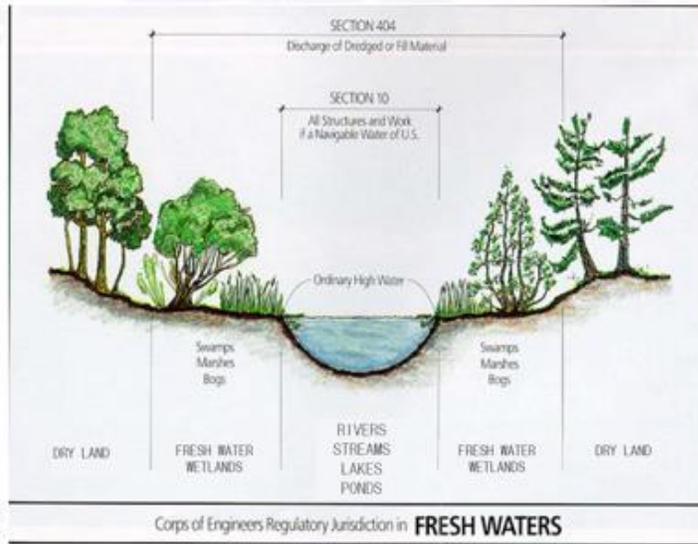
Floodway – DNR

- Permit for each crossing

Regulated Drain – County Drain Commissioner/Surveyor

There is one federal agency and two state agencies that are responsible for the majority of our permits. The USACE regulates impacts to waterways and wetlands determined to be waters of the U.S under Section 404 of the Clean Water Act. IDEM regulates these same features under Section 401. IDEM also regulates wetland features that the USACE has not taken jurisdiction of under the state isolated wetlands law. IDNR jurisdiction extends out from the water feature into the floodway. If the feature is designated as a regulated drain the designer will have coordinated with the county office with jurisdiction. This is frequently under the county surveyor. Only five counties require a permit but all county drains have restrictions. There is one more federal agency that may be interested in our projects – the United States Coast Guard. They are primarily concerned with projects located along Lake Michigan or the Ohio River and its major tributaries.

USACE Jurisdiction



This diagram shows the areas that the USACE has jurisdiction over. A Section 10 permit is required for structures and work occurring in a navigable water of the U.S. An example of a Section 10 water would be the Ohio River or the Indiana Harbor Canal in Lake County. A Section 404 permit is required for activities located within a river, stream, lake or pond and adjacent wetlands.

Activities that require a permit

- Placement of fill w/in Waters of the U.S. or Waters of the State
 - Fill = soil, riprap, concrete, structure, etc.
 - Permanent or temporary
- Alteration to the cross-sectional area of a waterway
- Land disturbance



A permit from USACE or IDEM is required for any activity that would result in permanent or temporary fill into a waters of the U.S. or waters of the state. The IDNR is primarily concerned with a change to the

cross-sectional area of the waterway. IDEM's jurisdiction under Rule 5 is based on the amount of land disturbed.

Waterway Permits

USACE 404 Permit/IDEM 401 Water Quality Certification (WQC)

- Nationwide Permit – < 0.1 acre of wetland or 300 LF of stream channel
 - NWP #3 – Maintenance
 - (a) repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill
 - (b) removal of accumulated sediments and debris outside the immediate vicinity of existing structures
 - (c) temporary structures, fills, and work
- Regional General Permit
 - ≤ 1.0 acre of wetland or 1,500 LF of stream channel
- Individual Permit
 - > 1.0 acre of wetland or 1,500 LF of stream channel

The type of permit required is based on the amount, type and location of impacts. The impact to 0.1 acre or less of wetlands or 300 LF of stream channel (based on the IDEM impact limits) would qualify for a Nationwide Permit. Under the 404 RGP, impacts of 1.0 acre or less of wetland, 2.0 acres or less of open waters (excluding natural waterbodies), or 1,500 linear feet (LF) of stream channel would qualify for a Regional General Permit. The 401 Water Quality Certification is limited to 0.25 acre of cumulative permanent impacts to waters of the U.S. and 500 LF of waters of the U.S. A project may qualify for a 404 RGP but require a 401 Individual Permit (IP). A 404 Individual Permit would be required for impacts greater than 1.0 acre of wetlands, 2.0 acres of open water or 1,500 linear feet of stream channel.

The Nationwide Permit (NWP) #3 for maintenance is what we use the most. It includes three categories. NWP 3(a) is for the repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill. NWP 3(b) is for the removal of accumulated sediments and debris outside the immediate vicinity of existing structures. NWP 3(c) is used for temporary structures, fills, and work. The design must maintain normal downstream flows, minimize flooding and consist of and be placed such that the material will not be eroded by high flows. The structure must be completely removed at the completion of the work and all affected areas must be returned to preconstruction elevations and revegetated.

The NWP may not require notification to the USACE. In this situation, the EWPO will review the application to ensure USACE and IDEM permit conditions are met and provide a cover letter to attach with the application stating that no permit will be received. IDEM does not review the NWP applications nor issue a permit. USACE review of the NWP application can take up to two months.

The Regional General Permit (RGP) has extensive qualifying requirements for projects. Two examples are:

- placement of riprap flush with the upstream and downstream bank and stream channel elevations and grades; and
- for structures installed in a perennial stream with a OHWM width of 12' or greater have a width equal to or wider than the existing OHWM and have a natural stream bottom.

When the contractor has requested changes to the design, discuss them with your permit specialist prior to approval. The design feature may have been required to qualify for the permit.

Under the 401 RGP, mitigation will be required for impacts greater than 0.10 acre up to and including 0.25 acre or greater than 300 LF up to and including 500 LF.

Waterway Permits

IDEM Isolated Wetlands Permit

- USACE has declined jurisdiction of the resource through the formal Jurisdiction Determination (JD) process
- IDEM verifies that the wetlands are not covered by an exemption
- Impacts to non-exempt wetlands will require a permit and may require mitigation

IDEM Rule 5 Permit

- > 1.0 (0.9) acres disturbed area
- No Permit Required (NPR) – Compliance with Standard Specification Section 205

IDNR Construction in a Floodway

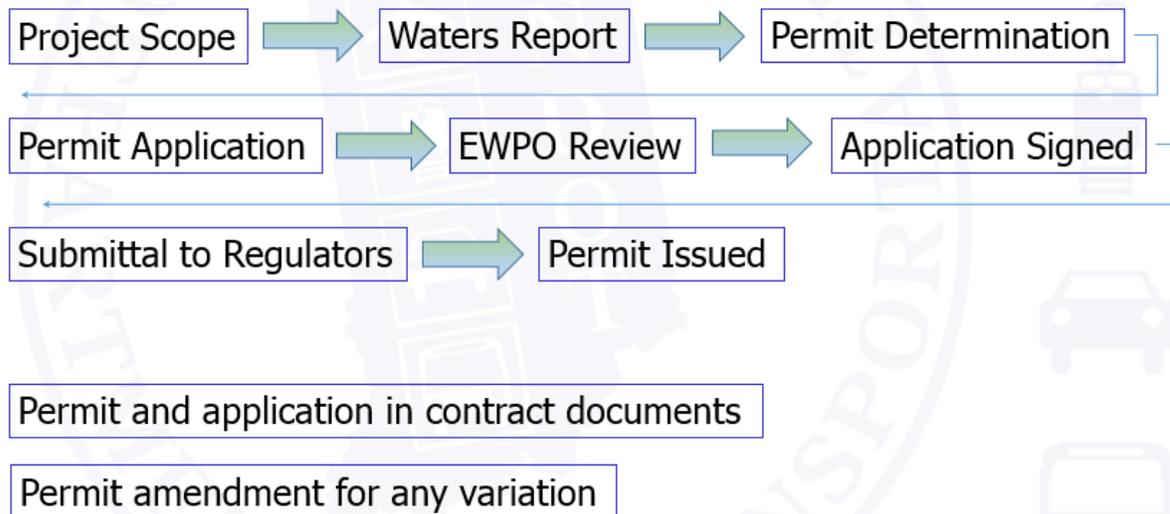
- Jurisdictional Feature
- Not qualify for an exemption

When the USACE declines jurisdiction of a wetland through a formal jurisdiction determination it then falls under IDEM jurisdiction under the state isolated wetlands law. IDEM will evaluate the wetlands under the isolated wetlands law to determine which features are exempt. Impacts to non-exempt features must be permitted and may require mitigation if the impacts are above the threshold.

A Rule 5 permit is required when the disturbed area is 1.0 acre or greater. INDOT uses 0.9 acre as the breaking point to account for temporary impacts that may not be included. If a project does not require a Rule 5 permit, it must still comply with Standard Specification Section 205 – Temporary Erosion and Sediment Control.

The IDNR will review projects over a jurisdictional feature that is located in a navigable water and does not meet an exemption. The bridge exemption is the most commonly used. It applies to bridge, pipe or culvert projects with an upstream drainage area ≤ 50 mi², with all impacted buildings higher than regulatory flood elevation and is not located within corporate (town) boundaries or a comprehensive planning area. A project with only one 404 and/or 401 permit may have several CIF permits.

Waterway Permitting Process



The project scope sets the parameters for the area researched in the waters report. The waters report is created during the NEPA process and it documents conditions prior to disturbance. The field work for the report must be done during the growing season. The permit determination is done at 30 percent design and revised as necessary. The environmental goal of the remaining portion of the design process is to avoid and minimize impacts to regulated resources. This may change the permit type and may reduce mitigation needs. The permit application should be submitted at 70 percent design. At this point the impacts and general design considerations should be set enough to minimize permit modifications. A EWPO Permit Specialist will review the application to ensure that it accurately and clearly describes the scope of work, regulated impacts, and includes the regulators permit requirements. The EWPO Team Leads, Manager and ESD director are the **only** authorized signatories for INDOT. The goal is to have the application submitted to the regulator to ensure permits in hand by RFC.

The agency review time and type vary based on the permit type. Some NWP's do not require agency pre-construction notification. In this situation the contract package would only include the general permit conditions, cover letter and the application. IDEM has 30 days to review a RGP application. They will provide an approval email with the permit number and expiration date for our records. A 404 Individual Permit can take up to 12 months to review and a CIF permit up to six months. The CIF permit is reviewed by multiple departments. Any one department may find concerns and issue an abeyance thus delaying the review by the remaining departments. The most common abeyances are issued by hydraulics and the biologists. The DNR is implementing measures to shorten the review time.

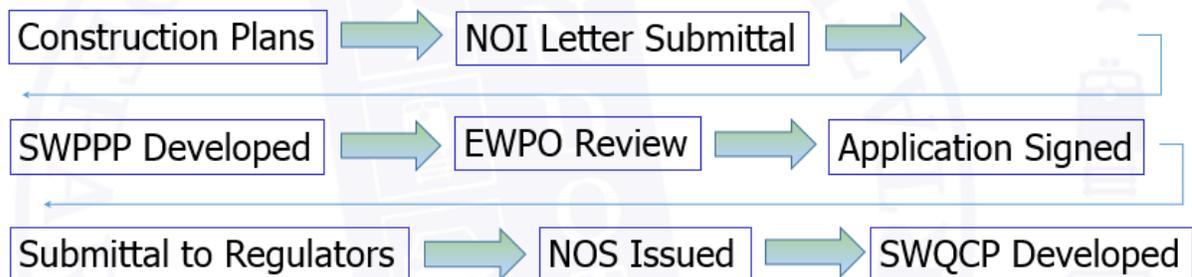
A permit amendment is required for changes to the type or amount of impacts or temporary measures impacting a regulated resource that were not permitted. The failure to include temporary measures required for construction is the most common amendment. When the regulator allows we try to include the need for specific temporary measures in the permit application. If a project with a CIF permit requires a temporary causeway the contractor must submit a design. Temporary causeways will be permitted in an amendment to the original permit. The amendment request should be processed through the Permit Specialist.

Rule 5 Permit

- Protects regulated resources (streams, wetlands)
- Saves time and money
- Priority of control (cost ↑ as soil movement ↑)
 1. Storm water
 2. Erosion
 3. Sediment
 4. Pollution
- Site inspections
 - Weekly from 1st disturbance and at rainfall ½ inch or greater
 - End when NOT is approved by storm water and request submitted to IDEM
- Complaint driven -Someone is always watching  and they know to call IDEM!

Compliance with Rule 5 and/or Standard Specification 205 (when no permit is required) protects streams and wetlands regulated by the USACE, IDEM and/or the IDNR. Compliance saves times and money. It is easier to use measures to keep sediment and other materials out of a resources than it is to remove it. The priority is to control storm water in order to prevent soil erosion. The removal of sediment from a stream or wetland can be very expensive and difficult to execute.

Rule 5 Permitting Process



Parts 1 – 4 (NOI, SWPPP, NOS)

- Must be posted with the letting documents
- Must be posted on the job site
- Contractors Storm Water Quality Control Plan (SWQCP) completes NOI

The Notice of Intent (NOI) indicates a project owner's intent to operate a construction project in a manner consistent with the Rule. The Storm Water Pollution Prevention Plan (SWPPP) outlines how erosion and sediment will be controlled on the project site. The goal of Rule 5 is to minimize the discharge of sediment off-site or to a jurisdictional waterway (wetland or stream). The plan also describes ways to control other pollutants to include disposal of building materials, management of fueling operations, concrete washout water, and a plan to control pollutants associated with the post-construction land use.

The Notice of Sufficiency (NOS) is issued by IDEM after approval of the Rule 5 application and it confirms receipt of all NOI submittal requirements. The NOS and NOI with the SWPPP must be posted on the job site bulletin board.

The Storm Water Quality Control Plan (SWQCP) is developed by a professional engineer (CPESC) working for the contractor. It contains phasing and sequencing of construction and addresses the installation, maintenance and removal of storm water management measures through the phases. The SWQCP also includes information for construction entrances, portolets, haul roads, lay down yards, concrete waste water, stockpiles, equipment storage, batch plants and borrow and disposal sites. It should be submitted to INDOT PE 14 days prior to start of operations and can be submitted in phases. It must be kept current and be available on site while the project is in construction.

Pre-Construction Permit Review

- What permits were required for the project?
- What resource impacts were permitted?
- What conditions (general, specific, and permit) apply to the project?
- Do the permit application and the construction plans agree?
 - Impacts
 - Temporary structures
 - Seed mixtures, plants
- Are there any environmental commitments or Unique Special Provisions (USPs) associated with the project?
- What impacts didn't require a permit but still require compliance with INDOT Standard Specifications?

The pre-construction permit review starts with an understanding of the project and the environment the work will be done in. Review the documents using your experience with similar projects. Review the project documents to determine if permits were required. Compare the permit application with the construction plans. Do they have the same type, quantity and location of impacts? Are the seed mixtures and other plantings correct? Are the impacted areas delineated on the plans? Are there "do not disturb" areas marked?

This is a good time to also see what is missing. Will there be temporary structures required that were not included in the permit? If unknown this is a good question to ask the contractor to prevent delays. For

example, the CIF permit would not include a temporary causeway since the IDNR requires design plans to review.

Review the permits and attachments for the general, specific and permit conditions. Are there ones that need to be monitored for compliance during construction? Are there Unique Special Provisions or commitments related to environmental concerns?

Finally, are there impacts that don't require a permit but still require compliance with INDOT Standard Specifications? The most common would be the requirement to follow the Section 205 specifications even if the project did not require a Rule 5 permit.

General Conditions

- Are specific to the permit (NWP, RGP)
- Must be met by project for permit to apply
- USACE and IDEM conditions may be different
- Some are covered by INDOT Standard Specifications
- Examples from NWP –
 - Not disrupt aquatic life movement
 - Maintain existing conditions as much as possible
 - Install run-off and sediment control measures
 - Remove temporary fills, restore and revegetate
 - Install riprap flush with upstream and downstream bank and stream channel (IDEM)

The USACE and IDEM have general and permit specific conditions for the Nationwide Permit and Regional General Permits that must be met by the project for the permit type to be available. IDEM conditions will be in addition to what is required by the USACE. For example, there are 54 Nationwide permit types. The one we use most frequently is NWP 3 – Maintenance. There are 32 general conditions for the NWP and specific conditions for the NWP 3 that must be met in order for the project to qualify for that permit.

In addition to the USACE conditions, IDEM has 19 general conditions. Some examples are:

- The permittee shall deposit any dredged material in a contained upland disposal area to prevent sediment run-off to any waterbody.
- The permittee shall install run-off and sediment control measures prior to any land disturbance to manage storm water and to minimize sediment from leaving the project site or entering a waterbody.
- The permittee must ensure all discharges of riprap into streams are flush with the upstream and downstream bank and stream channel elevations and grades.

IDEM has specific conditions associated with some of the permit types used in Indiana. The categories are for the replacement of stream encapsulation, pipe liners and all other maintenance activities. Some examples of specific conditions are:

- For stream encapsulation replacement, it must not reduce the cross-sectional area under bank full elevation or increase the length of the total encapsulation to over 150 feet. In addition, it must be the same type as the existing.
- For pipe liners, the liner size must be the largest size approved by the INDOT office of hydraulics and liners must be installed so that the invert of the liner is as close to the invert of the host pipe as practical.

Compliance with the conditions of the permit are verified by the EWPO Permit Specialist when the application is reviewed. When the NWP does not require notification to the USACE there is no additional review. For permits that require USACE review, they will verify that the project meets both the 404 and 401 permit conditions.

Other Condition Examples

- Temporary fills – not eroded by expected high flows, removed, area returned to pre-construction elevations and revegetated
- Construction equipment must not be directly in streams, if in wetlands on mats
- Suitable material must be used for activity or structures

Examples of unsuitable material includes asphalt or other bituminous material, broken concrete containing asphalt, concrete with protruding rebar, or erodible materials in an area subject to erosion. We must maintain the preconstruction course, condition, capacity, and location of open waters. Any temporary features must also be constructed to withstand high flows.

IDEM Specific RGP Conditions

- Placement of riprap or other bank stabilization materials must be installed flush with the upstream and downstream banks and stream bed elevation
- Pump-around activities must
 - Not cause erosion at the outlet
 - Be maintained
 - Constructed using non-erodible material
- Cofferdam activities must
 - Use sediment control devices to filter sediment from water

These are two specific conditions that IDEM has in the 401 WQC for the RGP. Any temporary structure must maintain the preconstruction course, condition, capacity, and location of open waters and be constructed to withstand high flows. An IDNR fish spawning waiver is only required if a condition of the project CIF permit or if it was specifically listed in the USACE or IDEM permit.

Site Preparation

- Identification of “Do Not Disturb” areas.
 - Wetland Boundary
 - Contact district or INDOT Central Office environmental staff if plans unclear
 - Trees to be removed
 - Trees not to be disturbed
- Will equipment or utility relocation require removal of trees not included in the plans or permits?
- Will project require temporary structures? Were these included in the permit? If in the permit, was the design similar to what will be constructed?

Do not disturb areas such as wetlands or trees that should not be impacted should be marked prior to the start of construction. Contact the district or central office environmental staff if you need assistance marking the wetlands. They can flag them for you.

Identifying a potential permit violation

- What is a violation?
 1. Regulated stream or wetland resource in area
 2. Impact to or potential to impact the regulated resource
 3. Impact (permanent or temporary) would require a permit
 4. No permit was obtained
- What do you see?
 - Sediment contaminated water
 - Erosion
 - New activity in/near regulated resource
 - Equipment in regulated resource



Any fill in a regulated resource requires a permit from the regulatory agencies. The fill can be permanent, such as the volume of a reinforced box culvert with wingwalls located below the OHWM, or temporary such as the coffer dam required to construct bridge piers. A violation is any fill in a regulated resource (waterway or wetland) that would require a permit that was not permitted. Examples would include placing riprap an area not included in the permit or installing a temporary structure that was not permitted. Another example would be sediment that has accumulated in a stream or wetland from an eroding slope.

This photo, showing an excavator in the river, was taken by a IDNR dam inspector (State Road 32 over White River site). The CIF permit included coffer dams but not a temporary crossing.

What does this violate? The IDNR requires that equipment and materials located in a waterway be clearly marked with warning materials. USACE and IDEM requires all construction equipment to be refueled and maintained on an upland site away from existing streams, drainage ways and wetland areas. Any heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance. An IDEM general condition for the RGP states that construction equipment must not be directly in streams.

A causeway should be constructed with consideration given to how it would be removed. Can the fill be separated from the wetland or stream bottom by landscape fabric? How should a causeway be removed? From one end to the other with no equipment getting into the waterway. The amount of sediment released from the activity should be minimized.

The following photos will provide some examples for discussion.

BMP Installation and Maintenance



One purpose of erosion and sediment control features is to prevent sediment from entering a regulated resource. The silt fence in the photo on the left is not long enough and it looks like sediment has moved around the end. If the area on the other side of the fence was a wetland the sediment would be unpermitted fill and would need to be removed. The removal can occur without getting a permit amendment. The silt fence on the right needs to have the accumulated sediment removed and the fence repaired. You may also need to consider whether the structure type is appropriate for the current conditions. It is inappropriate to place silt fence through a regulated feature, but it can be used to create a buffer around a wetland or stream that is located within the project area.

Stream Crossing Construction



Stream crossings should be designed to maintain flow and not wash out in high flow events. The stream crossing on the left needed additional protection along the sides of the structure and around and on the slope. The design allowed sediment to flow into the stream.

The crossing on the right washed out shortly after this photo was taken. The pipes used were too small to provide sufficient flow during normal or high flow events. In addition they were too short to construct a crossing wide enough to handle the equipment which led to riprap blocking the pipes. The size of material also couldn't withstand a high rain event.

Stream crossings must be constructed of non-erodible material, allow for aquatic organism passage and be designed based on hydraulic analysis to handle a 100-year flow event. A permit amendment was obtained to construct the crossing, but the execution was problematic. The crossing should be repaired to include increased quantity and size (length and diameter) of pipes, increased size of riprap and widened to accommodate width of vehicles using it.

Stream Crossing Construction



This stream crossing had several large corrugated pipes to provide flow. It also had riprap slopes on all sides to include protection from runoff from the access road. The travel way of the road over the crossing should be cleaned of sediment/mud in order for it to remain effective. The riprap in the upstream channel is a violation.

Sediment in Regulated Feature



It is important to understand what the stream looked like before construction started. A good source of information is the waters report. The structure on the right replaced a galvanized arch one-third the size of

the new structure. In addition, the upstream channel was relocated in order to accommodate a new road alignment. The channel is still adjusting to the changes that occurred to include filling in the sump area.

The photo on the left was taken at the downstream end of a bridge being constructed on new terrain. Failure to properly maintain the erosion and sediment control measures resulted in significant sediment erosion in the stream within our project boundaries and downstream. INDOT was also contacted by the County Drain Commissioner concerning the fill that had deposited in the drain downstream. The sediment should be removed from the waterway in a manner that minimizes additional impacts. The fill would not require reporting but should be cleaned up.

It is easier and less expensive to keep the sediment out of the resource rather than remove it. The sediment can move off our right-of-way and into areas with restricted access. We may also cause additional damage in our efforts to remove the sediment.

Protecting a Regulated Feature



In this photo we disturbed the soil up to and allowed sediment to get in the in the regulated waterway. Equipment tracking was also evident at the edge of the waterway. Erosion and sediment control measures should have been installed to prevent sediment from entering the waterway. If you identify a concern such as a structure not in the SWMPP or a feature being impacted or at risk, implement corrective action and mark the change on the erosion and sediment control plan sheets.

Riprap Placement



The structure on the left may have used the incorrect size of riprap. The hydraulics report and the plan sheets should be reviewed to verify what is being installed. The structure should be sized to allow for a channel to develop that is similar to what is upstream and downstream of the site. Look beyond the area influenced by the old structure. Riprap placed on the side of the structure should provide for wildlife passage, especially if a CIF permit is required. The riprap should be installed flush with the upstream and downstream bank and the existing grade of the stream bottom. The box culvert on the right is harder to evaluate since it was sumped, but there is riprap placed above what looks like the existing grade of the stream bottom.

Riprap Placement



This riprap was carefully placed into a J-hook used to protect the steep bank from high flow events by diverting the water away from the slope. Evaluate why there is sediment in the stream. Is it from the project site or is the water entering the site also carrying a sediment load? If there is sediment coming from the project site implement measures to stabilize the source.

Riprap Placement



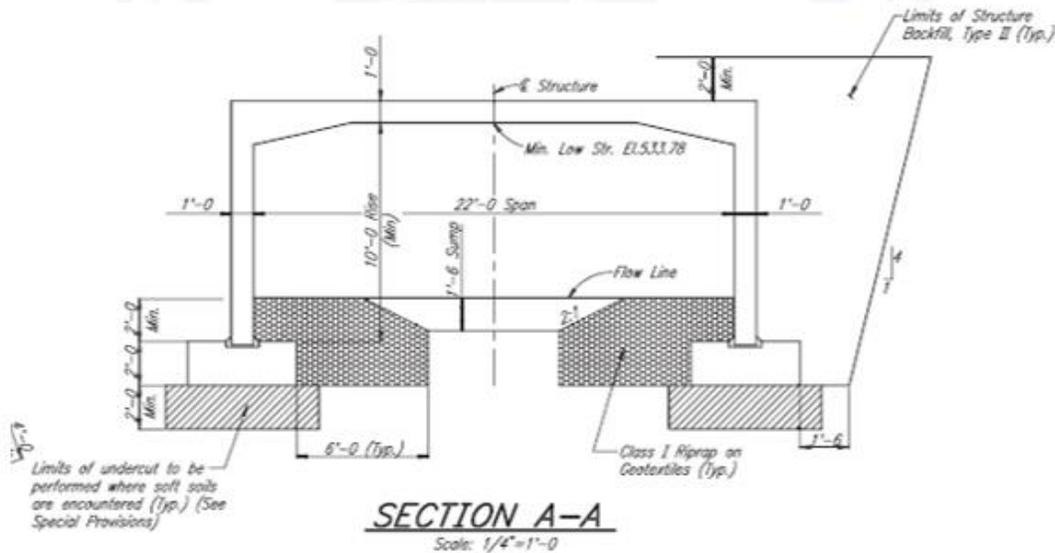
These photos are of the same location. Is the riprap in this channel properly placed? Look upstream to determine the natural bed conditions. Some of this riprap needs to be pulled out of the channel.

Riprap Placement



The sandbags and riprap that are blocking the channel should be removed. This correction does not require agency notification. The fill located on the stream bed and that below the ordinary high water mark should be removed. Consideration must be taken to adjust for the influence of the structure on the size of the stream both upstream and downstream of the structure and sumping.

A Three Sided Culvert



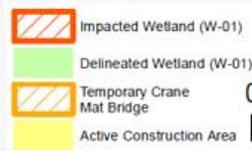
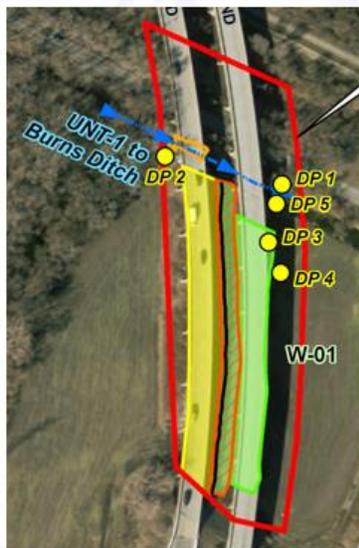
The permit for this three-sided box culvert included permanent fill for the riprap on the sides to protect the footer, footers and side walls below the OWHM. The plans did not provide detailed directions about what should happen in the center of the structure such as maintaining existing stream bottom elevation and material. The plans included riprap along the footers to protect them from scour but the original stream channel should not have been disturbed. Coordination with the EWPO Permit Specialist should occur if changes to design would result in additional impacts in the regulated resource.

A Three Sided Culvert

- Permanent fill included in permits – footer, sidewalls and riprap to protect footers
- Additional riprap in center of structure was unpermitted fill
- Lost benefit of preserving existing stream bed provided by a three sided structure



Where Did We Go Wrong?



- Bridge Deck Replacement
- Twin continuous composite steel beam bridges
- 16 spans, total length – 1,100 LF
- Programmatic CE
- District Erosion & Sediment Control (E&SC) visit July, 2018
- Waters Report August, 2018

There may be situations where errors in the project planning and design phase impact construction. This is a bridge deck replacement project. During planning, the project was determined to fit under the Programmatic CE. The Programmatic CE includes superstructure replacement and activity in previously disturbed soils. In addition, the project must not require any work that would need a waterway permit. Could this project be done without access from below the bridges? The planning and permitting process needs to consider project execution.

The site was inspected in July, 2018 by the District Erosion & Sediment Control specialist who identified the permit violation – unpermitted fill in a regulated resource. A waters report was done in August. The area under the bridge and extending to the sides was a wetland.

Where did we go wrong?



The permits required for this project included 404 and 401 RGPs for the temporary fill in the wetland from the crane mat.

Responding to a potential permit violation

1. Stop activity causing potential violation
2. Implement measures to prevent additional environmental impacts
3. Contact
 - District Environmental Staff
 - EWPO Permit Specialist
 - District Construction E&SC Specialists
4. Document
 - What happened
 - Resulting impacts
 - Photos
5. Work with Permit Specialist to determine
 - Is there a violation?
 - What agency notification is warranted?
 - What corrective action is required?

The first step in our response is to stop any activity causing a potential violation. Are there any measures that can be implemented to stop additional impacts? If yes, implement them. The following steps will depend on the situation. Contact the District Construction Erosion and Sediment Control Specialist and your EWPO Permit Specialist. They will help with what is required from the permit perspective.

Endangered Species Act (ESA)

- Listed Bat Species
 - Indiana Bat (Federally Endangered - FE)
 - Northern Long-Eared Bat (NLEB) (Federally Threatened)
 - Gray Bat (FE)
- Programmatic BO for Transportation Projects
 - Covers Indiana Bat and NLEB
 - Avoidance and minimization measures (AMMs) identified early in planning process



Hibernating Indiana bats; one with a wing band by Andrew King/USFWS

There are three bat species in Indiana that are protected under the Endangered Species Act (ESA). The Gray Bat, found in the southern part of the state, requires direct coordination with the U.S. Fish and Wildlife Service (USFWS) for projects with potential impacts. The process for the Indiana Bat and Northern Long Eared Bat is different since they are covered under the Range-Wide Programmatic Consultation. This established procedures to simplify the consultation process for transportation projects for these species. Avoidance and minimization measures (AMMs) are required for each project. The AMMs are firm commitments.

Endangered Species Act (ESA)

- Freshwater Mussels

- 10 Listed Species –
9 endangered, 1
threatened

Sheepnose
FE



Fanshell
FE



Northern RiffleShell
FE

There are ten listed freshwater mussel species that can be found in Indiana waters. In most circumstances the presence of mussels in the project area would have been identified during the early coordination process. The USFWS and IDNR coordination would determine the avoidance and mitigation requirements for the project.

Endangered Species Act (ESA)

- Freshwater Mussels



Clubshell
FE



Snuffbox
FE

- Asian Clam –
common invasive,
not protected



If you find a live mussel, take a photo similar to these and send it to your EWPO permit specialist for identification. Carefully place the live mussel back into the water. If possible, don't disturb the area where you found the mussel. Remember, do not collect live mussels or mussel shells. It is illegal under the ESA.

The Asian Clam is an invasive species that is commonly found in Indiana streams.

Endangered Species Act (ESA)

- Rusty Patched Bumble Bee

- Listed 1/11/2017
- Nesting – underground, abandoned rodent cavities, clumps of grass
- Keystone species
- Crop pollinator



The Rusty Patched Bumble Bee is the first bee species to be listed. Many other species are under stress.

Migratory Bird Treaty Act (MBTA)

- Barn Swallows



- Cliff Swallows



Eastern Phoebe



The three species of migratory birds found on our structures are the Barn and Cliff Swallows and the Eastern Phoebe. The swallow nests are made of mud and can be found in groups. The Eastern Phoebe nests alone. The nest has other fibrous material in it. It may be attached to a wall or constructed on a flat surface.

In rare circumstances, a project area may contain other state listed species. This includes mammals, birds, fish, mollusks, amphibians and reptiles. If there is the potential for the project to impact them, a species specific USP will be developed to avoid and minimize impacts.

Migratory Bird Treaty Act (MBTA)

• General Guidelines

- Do not disturb nests with eggs or young
- Can remove nests from under bridge prior to May 1st, if no eggs or young present
- Regular monitoring is required
- Remove new nest construction prior to egg laying
- Inspect prior to start of work each day, remove nest if no eggs or young present
- Once cleared construction can begin



Migratory Bird Treaty Act Compliance

Step 1. Avoidance and minimization throughout planning and project construction

- Unique Special Provision for projects with documented use or bridges located over/near water resource
- Special situations from agency coordination documents

Step 2. Identify remaining potential to impact migratory birds after avoidance and minimization measures implemented

Step 3. Evaluate to determine if potential impacts will be “incidental”

Step 4. If “incidental,” construction continues without implementation of additional measures



For current EWPO contacts go to <https://www.in.gov/indot/2522.htm>