

ENVIRONMENTAL
SERVICES
INDOT



2014 Waterway & Permitting Training for Project Engineers/Supervisors

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Current INDOT OES Goals

- **Acquire permits for all projects where required**
 - On time! (Prior to RFC date)
 - Covering all impacts
- **Construct projects according to permit conditions**
- **0 violations!**



INDOT Meeting These Goals?

- **Construct projects according to permit conditions**
 - In 2010
 - 6 violation letters
 - >40 unsatisfactory inspection reports
 - Regulatory authorities are frustrated



Rapport with Regulatory Agencies

- **Lose trust in INDOT/OES**
 - INDOT can't police matters within INDOT
- **Less willing to work with INDOT/OES in future endeavors/less flexibility**
- **More likely to rely on regulatory agency enforcement**
 - More likely to impose fines
 - More likely to issue cease and desist orders



INDOT Rapport with the Public

- **Violations put “ugly face” on INDOT**
 - Violation of State and Federal laws
 - Costs taxpayers \$\$\$
 - Project delays
 - Project redesign
 - Mitigation requirements
 - Fines



Natural Resources

- What resources are protected by State and Federal laws requiring permits?
- How are the boundaries of these resources defined?



Natural Resources

- **Natural resources considered during waterway permitting**
 - Aquatic resource itself
 - Adjacent natural resources
 - Forests, meadows, and other habitats
 - Water quality of the resource
 - Biotic factors
 - Plants and animals
 - Abiotic factors
 - pH, temperature, nutrients, substrate, contaminants



Natural Resources

- **Natural resources requiring permits**
 - Aquatic resources
 - Waters of US
 - Streams, wetlands, lakes, ponds etc...
 - Isolated wetlands
 - Floodway



What is Covered?

■ Boundaries of Jurisdiction

- Limit of **Stream** Jurisdiction is the Ordinary High Water Mark (OHWM)
 - Rules relate to “traditionally navigable waterways”
 - Waters of the US Report
- Upland boundary of **Wetland** Jurisdiction is the Delineated Wetland Boundary
 - Waters of the US Report and/or Wetland Delineation Report



Streams



OHWM

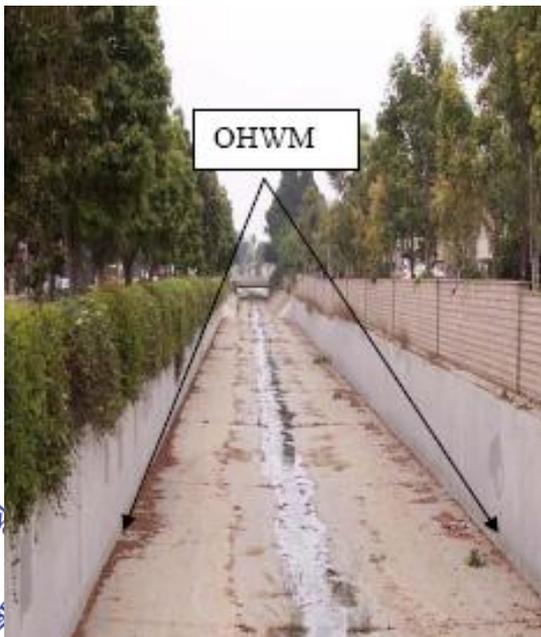
Riprap
BELOW the
OHWM

Riprap
ABOVE the
OHWM

01/28/2005

“Defined Bed and Bank”

Other Examples of OHWM



Does it connect to a stream or river and have a defined channel?

No vegetation growing across the ditch line.

Wetlands



But Also...

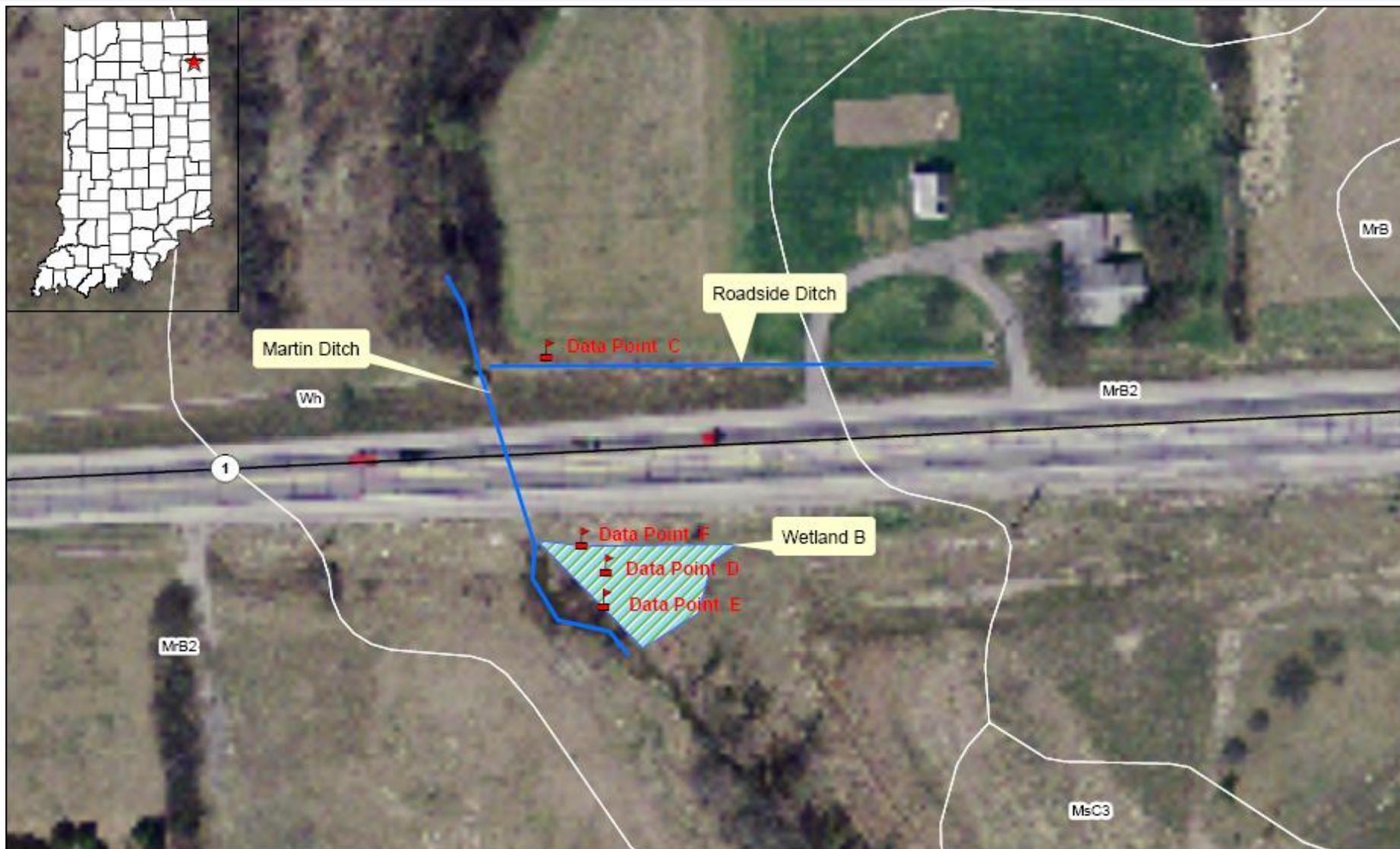


Wetland Boundary

- **Defined as having indicators of:**
 - Hydrophytic **Vegetation**
 - Water-tolerant plants
 - Hydric **Soils**
 - Water-saturated soils
 - **Hydrology**
 - Evidence of water



Wetlands



0 37.5 75 150 Feet
Scale 1:913



8
Aerial Source: 2005 Indiana Orthophotography (IndianaMap Framework Data www.indianamap.org)
Soils Source: U.S.D.A., N.R.C.S., Soil Survey Geographic (SSURGO) Database for Allen County, Indiana
Aerial Photograph 2005
T32N R12E Section 36, T31N R12E Section 5

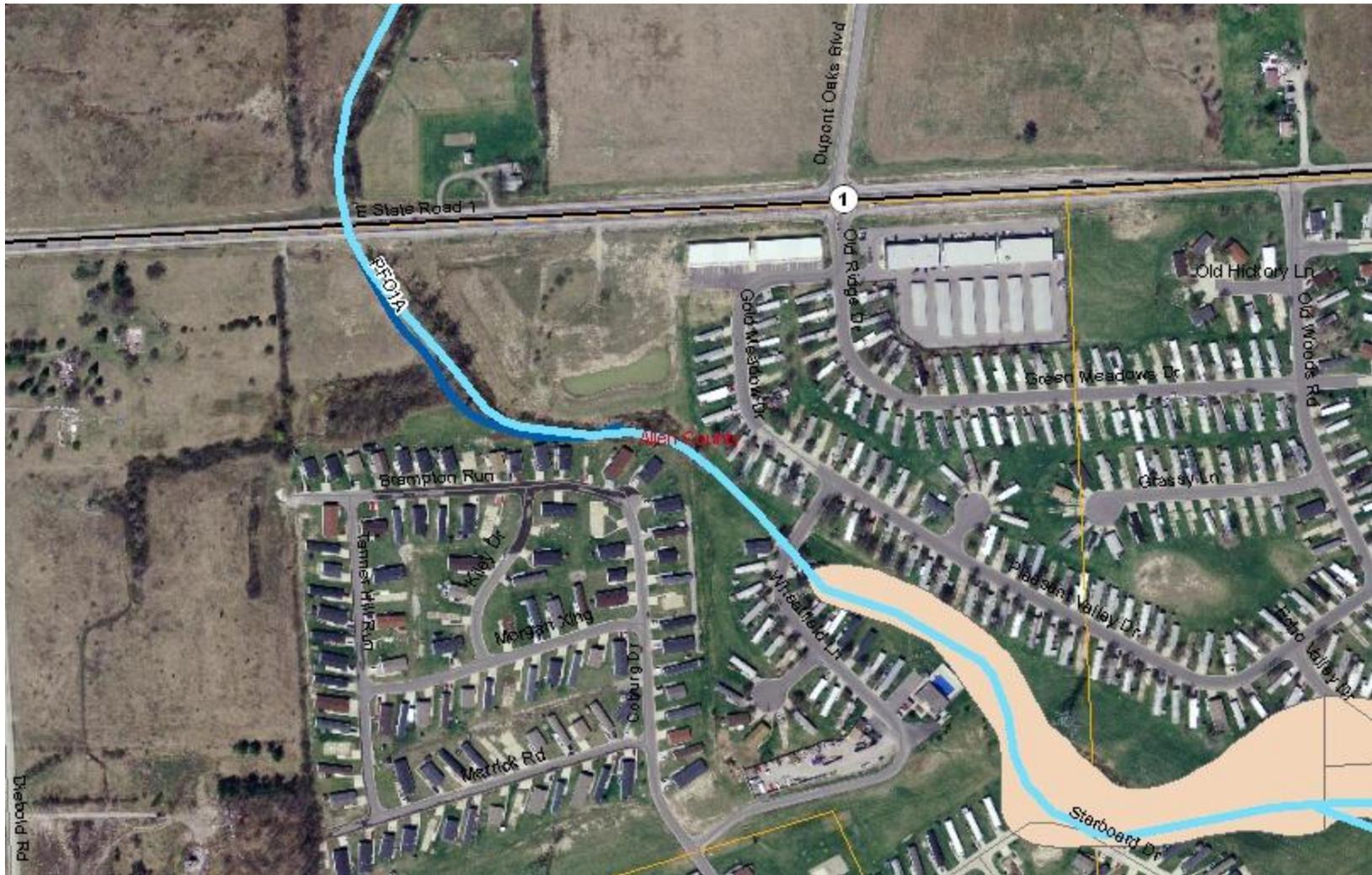
Floodway Boundary

■ Floodway

- The channel of a river or stream and those portions of the flood plains adjoining the channel which are reasonably required to efficiently carry and discharge the peak flow of the regulatory flood of any river or stream.
 - Peak flow defined as the **100 year discharge**
 - In absence of floodway mapping, floodplain boundary is used
 - In absence of floodway or floodplain mapping, exemptions determine extent of jurisdiction



Floodway Boundary



Waterways Permitting Agencies

- US Army Corps of Engineers (USACE)
- Indiana Department of Environmental Management (IDEM)
- Indiana Department of Natural Resources (IDNR)



Typical Permits

- **U.S. Army Corps of Engineers**
 - Section 404 Regional General Permit (RGP)
 - Section 404 Nationwide Permit (NWP)
 - Section 404 Individual Permits (IP)
- **IN Dept. of Environmental Management**
 - Section 401 Water Quality Certification (WQC)
 - Rule 5 – Erosion Control
 - Isolated Wetland Permit
- **IN Dept. of Natural Resources**
 - Construction in a Floodway Permit
 - Navigable Waterways Permit



Environmental Permitting Agencies

■ Federal

■ U.S. Army Corps of Engineers

- Section 404 of the Clean Water Act
- Jurisdiction over Waters of the U.S.
- ALL IMPACTS need to be permitted
 - 404 Nationwide Permit (NWP)
 - Expires every 5 yrs (March 2012)
 - Usually covers Corps defined “general maintenance” projects
 - 404 Regional General Permit (RGP)
 - Construction Permit expires every 5 yrs (12/15/2009)
 - Discharge (rip rap, stone, soil, etc...) < 1.0 acre into Waters of U.S.



Environmental Permitting Agencies

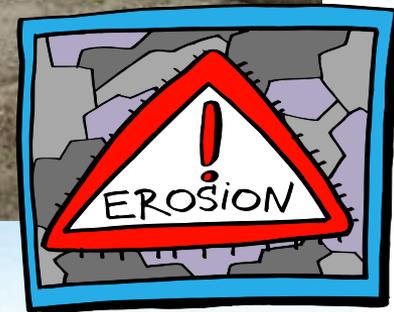
■ State

- Indiana Dept. of Environmental Management (IDEM)
 - Waters of the State
 - Isolated wetland permit
 - Permit need is determined by Isolated Wetland Size (>0.5 acre)
 - Waters of the US
 - Section 401 Water Quality Certification (WQC)
 - ALL IMPACTS need to be permitted
 - Impact qualifiers that increase IDEM review time and the chance that the project will require mitigation
 - Impacts \geq 0.1 acre
 - Impact \geq 300 linear ft. of stream
 - Impact \geq 150 linear ft. up or downstream of structure
 - Relocation, Encapsulation or Channelization of \geq 150 linear ft. for the purpose of stream crossing



IDEM Rule 5 – Erosion Control

- **Rule 5 Permit required for projects with ≥ 1.0 acre of soil disturbance**
 - Cumulative
 - Entire project (adjacent projects)
 - Entire time project is under construction
 - Erosion & sediment control measures should be developed for the entire site
 - Should include measures appropriate for all phases of construction to be expected



TxDOT

Erosion Control vs. Sediment Control

- **Reducing Erosion = Reducing Sedimentation**
 - Erosion of bare, exposed soil
 - Mulch cover reduces erosion by 90%!
 - Vegetation reduces erosion by 97%!!!
- **Increase in erosion control measures on site = Decreased need for sediment control measures**



Environmental Permitting Agencies

■ State

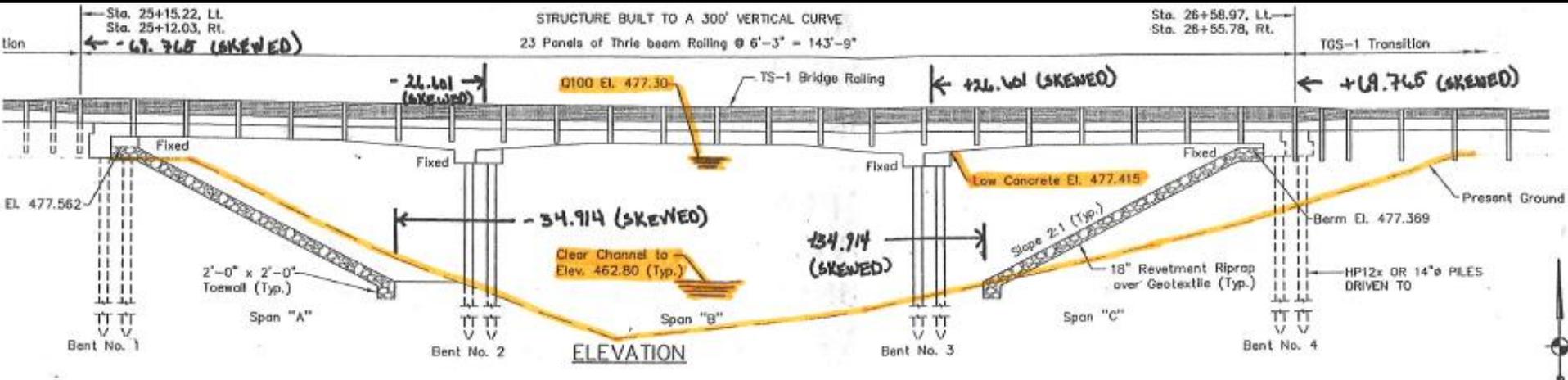
- Indiana Dept. of Natural Resources (IDNR)
 - Floodway (main channel during 100 yr. flood)
 - Exemptions
 - Logjam/Sandbar removal
 - Specific conditions determine if no notification is needed
 - <1 sq. mile drainage area (to structure)
 - Bridge exemption
 - <50 sq. miles drainage area (to bridge) if project is outside of the incorporated limits of an urban area (rural)



Environmental Permitting Agencies

■ State

- Indiana Dept. of Natural Resources (IDNR)
 - Floodway (main channel during 100 yr. flood)



- Construction in a Floodway Permit
 - There are many specific exemptions
 - Changes in the project scope need permit addendums

Environmental Permitting Agencies

■ County

■ Regulated Drain Permit

- Needed for work w/in 75 ft. of regulated drain
- Only in 5 IN counties
 - Allen, Elkhart, Hamilton, Lake & LaPorte Counties



Average Completion Times

Waterway Permit Timeframes

Agency	Permit Type	Number of months application packages need to be given to OES <i>prior</i> to RFC Date
USACE	404 Individual Permit	12-18 months
USACE	Nationwide Permit	3 months
USACE	Regional General Permit (RGP)	4-6 months
IDEM	401 with more than .1 acre impacts	7 months
IDEM	401 with less than .1 acre impacts	4 months
IDEM	Rule 5	4 months
IDEM	Isolated Wetlands	7 months
DNR	All permit types by DNR	9 months



Permits Required Less Often

- **U.S. Army Corps of Engineers**

- Section 10 Permit (Work IN a navigable waterway)
- USACE Levee Permit (Work ON a legal levee)

- **United States Coast Guard**

- Section 9 Bridge Permit (Commercially navigable)

- **Environmental Protection Agency (EPA)**

- Class V Injection Wells (Connection to groundwater)
- Sole Source Aquifers (St. Joseph Aquifer - groundwater)

- **Indiana Dept. of Environmental Management**

- Isolated Wetland Permit (Min. impact to isolated wetlands)
- Section 402 (NPDES) Permit (Sewer & septic systems))
- Rule 13 Statewide Permit (Individual storm water permit)

- **Ind. Dept. of Natural Resources**

- Navigable Waterways Permit (Work IN a navigable waterway)
- Dewatering Well Installation (Significant water withdrawal facility)
- Water Well Abandonment (Closure of water wells)
- Lake Preservation Act (Piers, seawalls, dredging in lakes)
- Lowering of Ten Acre Lakes Act (Ditching or draining affecting lake level)



Environmental Services Division (ESD)

- Ecology and Waterway Permitting Office (EWPO)
- EWPO is responsible for evaluating INDOT project impacts to waterways and natural habitats. Our goal is to ensure INDOT compliance with a variety of environmental laws and regulations protecting ecological resources and waterways. The office is split into two main teams: Ecology and Waterway Permitting, and Stormwater.
- Map of area and staff:
<http://www.in.gov/indot/2522.htm>



Ecology & Waterway Permitting Team

- Reviews INDOT projects' impact to regulated resources (streams, wetlands, species)
- Develop/review/process waterway permits
- Develop/review/process mitigation required with waterway permits applications
- Performs site visits during construction
- Post-construction monitoring



Stormwater Team

- Reviews INDOT projects in regards to erosion and sediment control
- Develop/review/process Rule 5 permits
- Develop/review/process post-construction NPDES requirements
- Performs site visits during construction



Intent of Rule 5

- **Intent of Rule 5. Storm Water Run-Off associated with construction activity**
 - Indiana Administrative Code
 - 327 IAC 15-5-1 Purpose
 - Sec. 1. The purpose of this rule is to establish requirements for storm water discharges from construction activities of one (1) acre or more so that the public health, existing water uses, and aquatic biota are protected.



Intent of Rule 5

- **Intent of Rule 5. Storm Water Run-Off associated with construction activity**
 - <http://www.in.gov/idem/4902.htm>
 - ["327 IAC 15-5 \[PDF\]"](#) is a performance-based regulation designed to reduce pollutants that are associated with construction and/or land disturbing activities."
 - "By Rule" permitted statewide
 - Submit Rule 5 Notice of Intent (NOI) to follow the rule.



Performance Based Rule

- **The Rule (IDEM/SWCD/Property Owner) doesn't care about:**
 - My sub-contractor can't get on the project site for two weeks to fix the measures/add new measures, etc.
 - I installed what was in the plans
 - I didn't install what was in the plans because...
- **Non compliance**
 - Sediment Leaving the Project Site
 - High Potential for Sediment to leave Project Site



Bare soil

Mulched Soil

Grass Cover



90%
Reduction



97%
Reduction



327 IAC 15-5-4 Definitions

- **(5) "Construction plan" means a representation of a project site and all activities associated with the project. The plan includes:**
 - The location of the project site, buildings and other infrastructure grading activities
 - Schedules for implementation
 - Other pertinent information related to the project site
 - A Storm Water Pollution Prevention Plan (SWPPP) is a part of the construction plan.

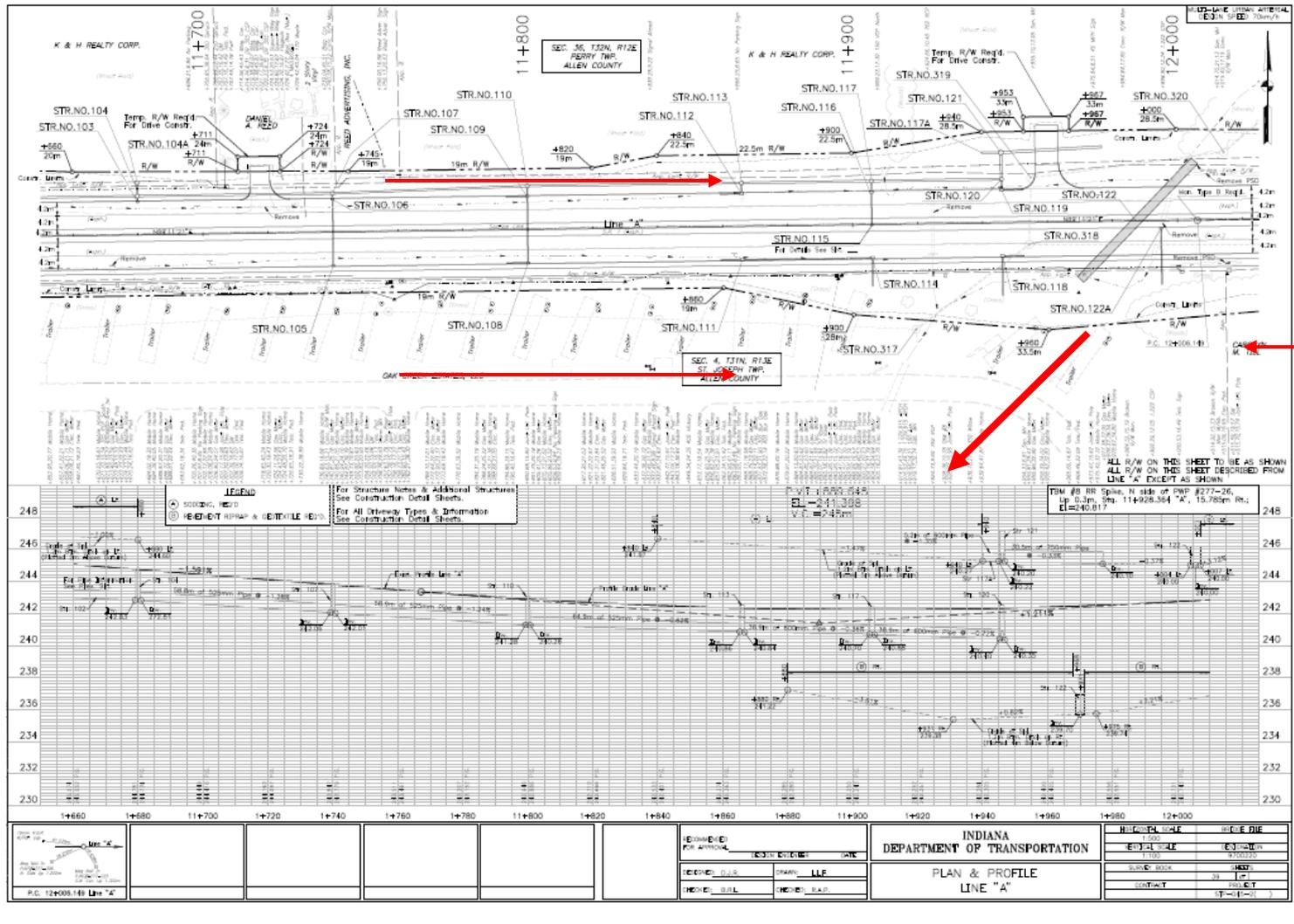


327 IAC 15-5-7

- **General requirements for storm water quality control**
 - (8) The storm water pollution prevention plan shall serve as a guideline for storm water quality, but should not be interpreted to be the only basis for implementation of storm water quality measures for a project site. The project site owner is responsible for implementing, in accordance with this rule, all measures necessary to adequately prevent polluted storm water run-off.



Part 1: Plan Design



Sequencing

- **Install perimeter sediment control features first!**
 - Protect areas where water leaves ROW!!!
 - Construction site low spots
 - Usually a wetland and/or stream
- **Avoid clearing herbaceous vegetation until necessary**
- **Temporary seed after 15 days of exposure!!!**
- **Install temporary diversion dikes**
 - Directs sediment-laden water where YOU want it.
- **Inspect erosion and sediment control measures weekly!**



Part 2: Implementation



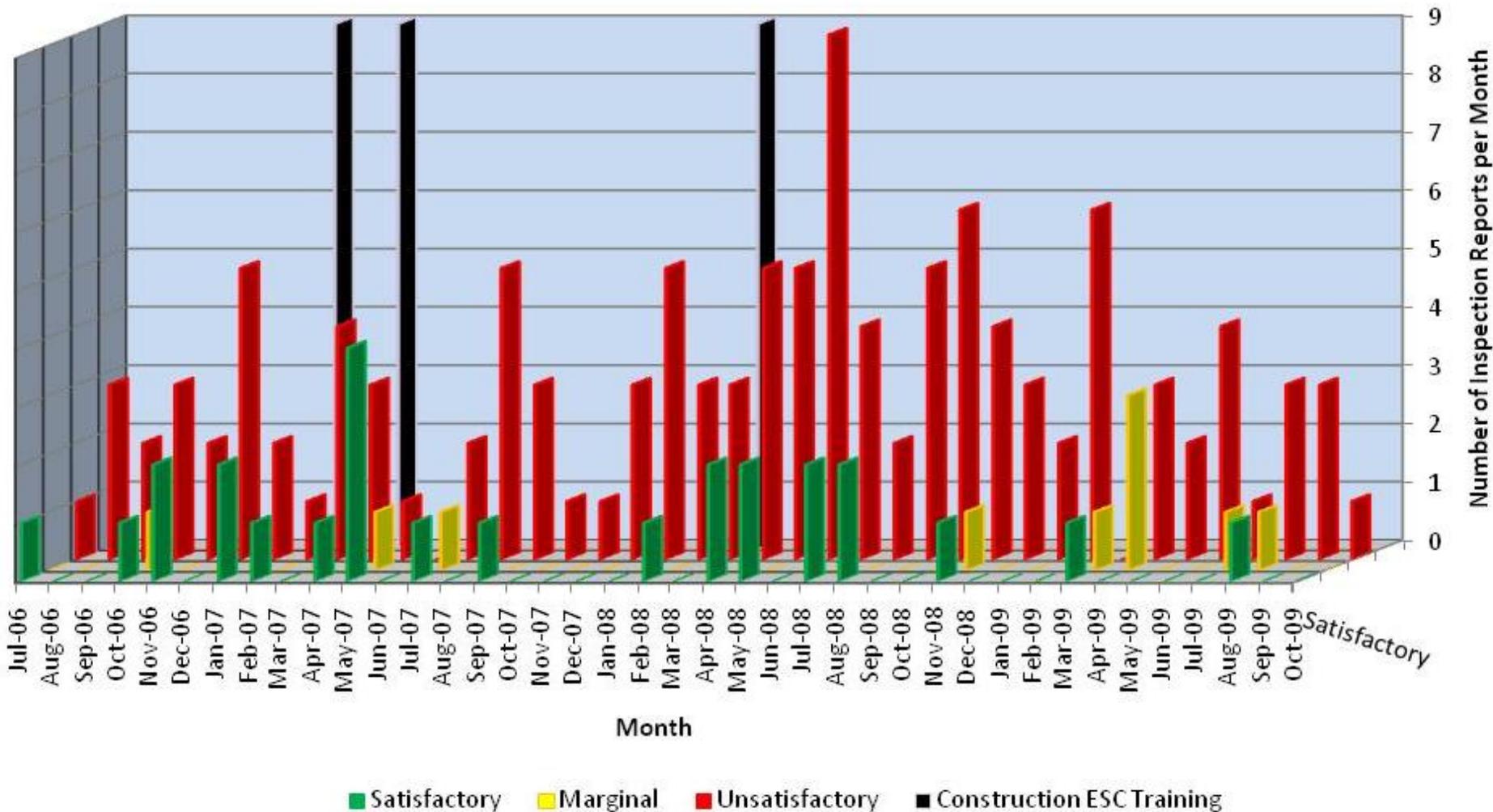
Most Important Factor

Discussion Topics

- **State of Indiana Compliance Data**
 - Indiana Department of Environmental Management (IDEM) or the local Soil and Water Conservation Districts (SWCDs) Inspection Reports
 - January 1, 2007 to September 1, 2009
 - Analyzed for compliance
 - Overall rating of satisfactory, marginal and unsatisfactory



Figure 1: Erosion and Sediment Control Inspection Report Results
July 2006-October 2009 Inspections
 Report Prepared 11/3/09



Inspection Report Results

- **Of the inspection reports received between June 1, 2006 and October 9, 2009:**
 - 155 inspection reports received
 - 62 contracts received inspection reports
 - 83.2 % of all reports were either unsatisfactory or marginal
 - IDEM inspections complaint driven and not consistent across the State and INDOT Districts



Inspection Report Results

- **Of the inspection reports received between June 1, 2006 and October 9, 2009: (cont.)**
 - Repeat Inspection Reports
 - Avg. 2.5 inspection reports/contract
 - 60% received on previously inspected contracts
 - 79.0% unsatisfactory or marginal First Notice
 - 86.2% unsatisfactory or marginal repeat inspections



INDOT Statewide Compliance

- **Largest observed violators**
 - Typically larger projects
 - New alignment/added travel lanes
 - (large grading = lots of exposed soil)
 - Overwintering projects
 - Exposed soils not stabilized prior to end of growing season
 - Projects with dewatering
 - Dewatering methods typically aren't adequate
 - Projects with work in waterway
 - Bridges/structures



INDOT Contract Items Results

- **Of the INDOT contracts active from January 1, 2007 to September 1, 2009:**
 - 493 contracts let with E&SC items (\$1,932,601,471)
 - 0.46% (\$8,889,966) of budget temporary E&SC items including change orders
 - 0.14% (\$2,705,642) of budget temporary E&SC items dispersed
 - 70% (roughly \$6 million) of E&SC item dollars in the contracts were not paid for on INDOT contracts



INDOT Rule 5 Compliance

■ Conclusions:

- INDOT (Contractors) must acknowledge that a majority of our contracts are out of compliance with Rule 5 E&SC.
- Despite previous notification of a lack of compliance, INDOT staff and its contractors are not responsive to the violation notices resulting in repeat inspections, repeat violations and potential IDEM and EPA enforcement.
- The lack of implementation of \$6 million worth of E&SC items that are in the contracts must be further investigated and likely contributes to the lack of compliance.
- The risk of non-compliance is too great for current INDOT projects to delay participation in changing current INDOT practices.



INDOT 2014 Std. Specs.

■ 201.02 General (Clearing And Grubbing)

- "...All areas **outside the construction limits** shall remain in their original condition. All damage to natural terrain, vegetation, objects designated to remain, or areas outside the construction limits which have subsequently eroded or been damaged, shall be repaired or replaced in accordance with 621.11."



INDOT 2014 Std. Specs.

- **203.08 Borrow or Disposal (Excavation And Embankment)**
 - "...Proposed **borrow sites** and proposed **disposal sites** for excavated material shall be identified **before such material** is excavated or disposed of within or outside the right-of-way."
 - "...Except where a permitted or licensed commercial site is utilized, an **inspection** of areas outside the construction limits shall be conducted by a qualified wetland professional to determine **if wetlands are present** on the site."
 - "... if any are present, **specifying the area** to be demarcated as **jurisdictional waters and/or wetland**. Once the area to be used for borrow or for disposal of excavated material has been shown not to contain jurisdictional or isolated wetlands, the boundary of the **area cleared** shall be demarcated..."



INDOT 2014 Std. Specs.

- **203.08 Borrow or Disposal (Excavation And Embankment)**
 - "...**Previously approved sites** may be utilized for borrow or disposal operations if the **Contractor furnishes a valid permit** or document signed by a wetland professional prior to utilizing the site. If the Contractor elects to use the site, **all required permits shall be obtained.**
 - No excavation shall occur or no material shall be disposed of beyond the boundaries of the demarcated area..."



INDOT 2014 Std. Specs.

- **203.08 Borrow or Disposal (Excavation And Embankment)**
 - "...**Before** borrow or disposal operations are begun, the Contractor shall submit operation plans for approval. Such plans shall include the following:
 - (a) a detailed sketch showing the limits relative to property and right-of way lines; (b) the grade of all slopes; (c) an erosion control plan in accordance with the requirements of 327 IAC 15-5; (d) the encasement, finished grading, and seeding procedures; and (e) **archaeological clearance.**
 - "...Except when a commercial source is utilized, a qualified archaeologist shall perform a record check and field survey of borrow or disposal limits to determine if **any significant archaeological sites** are within the limits..."



Off Site Borrow and Waste

IC 203 RL 4/08

Indiana Department of Transportation Request for Approval of Borrow or Disposal Site

Part I – Contract, Site and Permit Information (To be completed by the Contractor)

Date: _____ Contract: _____

Contractor: _____ District: _____

Proposed Site is for (check one): Borrow Excavation Disposal Both

A. Complete this section for all borrow/disposal site requests. Check the appropriate box, 1, 2 or 3. If box 1 or 2 is checked, skip section B and complete section C.

1. The proposed Site is a solid waste facility listed with IDEM.

a) Name of facility: _____

b) Address of facility: _____

c) IDEM Operating Number: _____ Exp. Date: _____

2. The proposed Site is not a facility listed with IDEM, but is legally permitted for the operations proposed by the Contractor.

a) Name of Site owner: _____

b) Address of Site: _____

c) The proposed Site is operated under one or more of the following permits:

IDEM 401 Water Quality Certification

Permit No: _____ Exp. Date: _____

Not Required (explain): _____

US Army Corps of Engineers (USACE) Section 404 Clean Water Act

Permit No: _____ Exp. Date: _____

Not Required (explain): _____

IDNR Construction in Floodway

Permit No: _____ Exp. Date: _____

Not Required (explain): _____

IC 203 RL 4/08

IDEM Rule 5

Permit No: _____ Exp. Date: _____

Not Required (explain): _____

The Site has archaeological clearance and written authorization to enter in accordance with 203.08. Attach copies.

Not Required (explain): _____

3. The proposed Site is not currently a licensed commercial site or a permitted site as defined in 203.08. Complete sections B and C below.

B. Complete this section only if box 3 was checked in section A.

1. Name of the Site owner: _____

2. Location of the Site: _____

3. For a proposed disposal site, attach a list of materials to be disposed of at the Site.

4. Attach a right-of-entry signed by the property owner for the proposed work at the Site including access by the Department.

5. Attach a site plan for the proposed Site in accordance with 203.08.

6. Attach a copy of the operation plan for the proposed Site in accordance with 203.08.

7. Attach a copy of the wetlands delineation performed at the Site in accordance with 203.08.

8. Attach a copy of the archaeological clearance and written authorization to enter the Site in accordance with 203.08.

9. Will there be impacts to wetlands or waters of the US at the Site?

Yes – Attach copies of the following permits for the Site:

1. IDEM 401 Water Quality Certification – Exp. Date: _____

2. USACE 404 Permit – Exp. Date: _____

Site is an isolated wetland and a USACE 404 Permit is not required.

No – No permits are required.

Why was this Implemented?

- **Checklist for necessary contractor information**
- **We “own” the material as the project owner**
- **Bound by same laws and regulations as project**
 - Wetlands and 401/404/Rule 5/DNR
 - Archeology



What to Look for:

- **Is the application generally complete?**
- **Does the information make sense?**
- **Are the references certified:**
 - "Doing business with INDOT" page
 - <http://www.in.gov/indot/2384.htm>



INDOT 2014 Std. Specs.

- **203.09 General Requirements (Excavation And Embankments)**
 - "...The Engineer will direct the Contractor to stabilize an area if the disturbed ground has been or will be left bare and unworked for seven consecutive calendar days. Once directed, the Contractor shall stabilize the area within seven days. The methods shall be installed in accordance with 205 or as otherwise directed."
 - "...Sufficient quantities of excavated materials suitable for the growth of vegetation shall be preserved from within the planned excavation area and used for the encasement of cut, fill, and shoulder slopes which are deemed not suitable for the growth of vegetation. The depth of encasement shall be 6 in. or more, as directed, measured perpendicular to the face of the slope..."



INDOT 2014 Std. Specs.

- **205.03 General Requirements (Temporary Erosion And Sediment Control)**
 - “The installation of temporary erosion and sediment control measures **shall include those necessary** or required by permits at **off-site locations** such as borrow and disposal areas, field office sites, batch plants, locations where Contractor’s vehicles enter and leave public roads, and other locations where work pertaining to the contract is occurring.”
 - “...The **Contractor’s designated individual** in accordance with 108.04 shall be responsible for the installation, inspection, and maintenance of these measures. ...**Adjustments of the erosion and sediment control measures shall be subject to the Engineer’s approval to satisfy field conditions.** These measures shall be constructed as soon as practical and shall be maintained as necessary.”



INDOT 2014 Std. Specs.

■ 205.07 Maintenance (Temporary Erosion And Sediment Control)

- "...measures shall be **inspected , at a minimum**, once every seven days and after a 1/2 in. rain event. Inspections **shall be documented** and records shall be maintained by the Contractor, to be submitted to the Engineer on the next business day following the inspection. The temporary protection measures shall be returned to good working conditions **within 48 hours after inspection or as directed.**"
- "...Sediment shall be removed as approved and disposed of in accordance with 201.03 and 203.08..."



INDOT 2014 Std. Specs.

- **205.09 Removal (Temporary Erosion And Sediment Control)**
 - “Temporary erosion and sediment control measures **shall remain in place until directed to be removed**. The Contractor shall remove and dispose of all excess silt accumulations, dress the area, and vegetate all bare areas in accordance with the contract requirements. Use or disposal of temporary erosion and sediment control measures shall be as directed.”



References

■ Waterways Permitting Manual

- Laws & permitting agencies
- Permit process
- Types of permits USACE, IDEM, IJC, Hamilton County
- Mitigation
- 17 appendixes
- Can be found on Internet

<http://www.in.gov/indot/2522.htm>



Resources

- General Instructions for Field Employees (GIFE)
- Procedural Manual
- Cultural Resources Manual
- CE Manual
- Waterway Permits Manual (Rev. 2011)
- Haz Mat and Ecology Manual in 2011
- EWPO Website

<http://www.in.gov/indot/2522.htm>



INDOT Construction Tips

- **Read your permit!!!!!!!!!!!!!!!!!!!!!!!!!!!!**
 - Outlines conditions that **MUST** be followed
- **Amend/extend permit if construction differs from plans**
 - In/near locations of water resources
 - Beyond planned construction timeline
- **When in doubt, ask someone!**
 - INDOT Ecology and Waterway Permitting Office (EWPO)



INDOT Construction Tips

- **Develop Erosion and Sediment Control Plan. Revised plan must consider the sequencing of construction**
 - Use items in the contract documents
 - BUT be aware if additional items are needed



INDOT Construction Tips

■ Plan site dewatering

- Temporary pump around, diversion channel, dam and pipe, coffer dams
 - Methods of construction
 - Define how the structure will be re-energized by flow
- Goals
 - Keep clean water clean
 - Treat dirty water prior to discharge
- Obviously, make sure your plan is allowed in the permits



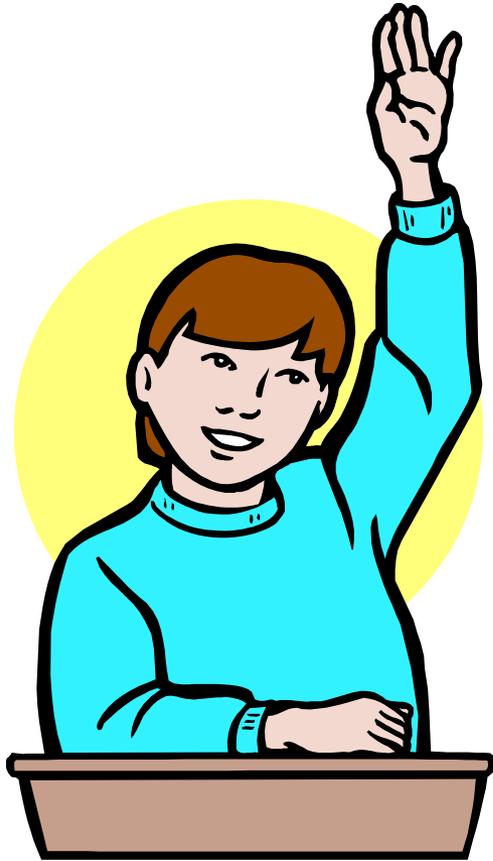
INDOT Construction Tips

■ **Avoid violations**

- Mitigation is difficult/costly/time intensive
- Always follow up with regulatory agencies after receiving an inspection report/letter
- Document resolution
 - Contractor approval
 - PE/PS approval
 - Area engineer is a valuable resource!!!
 - If necessary, OES approval



Questions?



Office of ENVIRONMENTAL SERVICES INDOT

