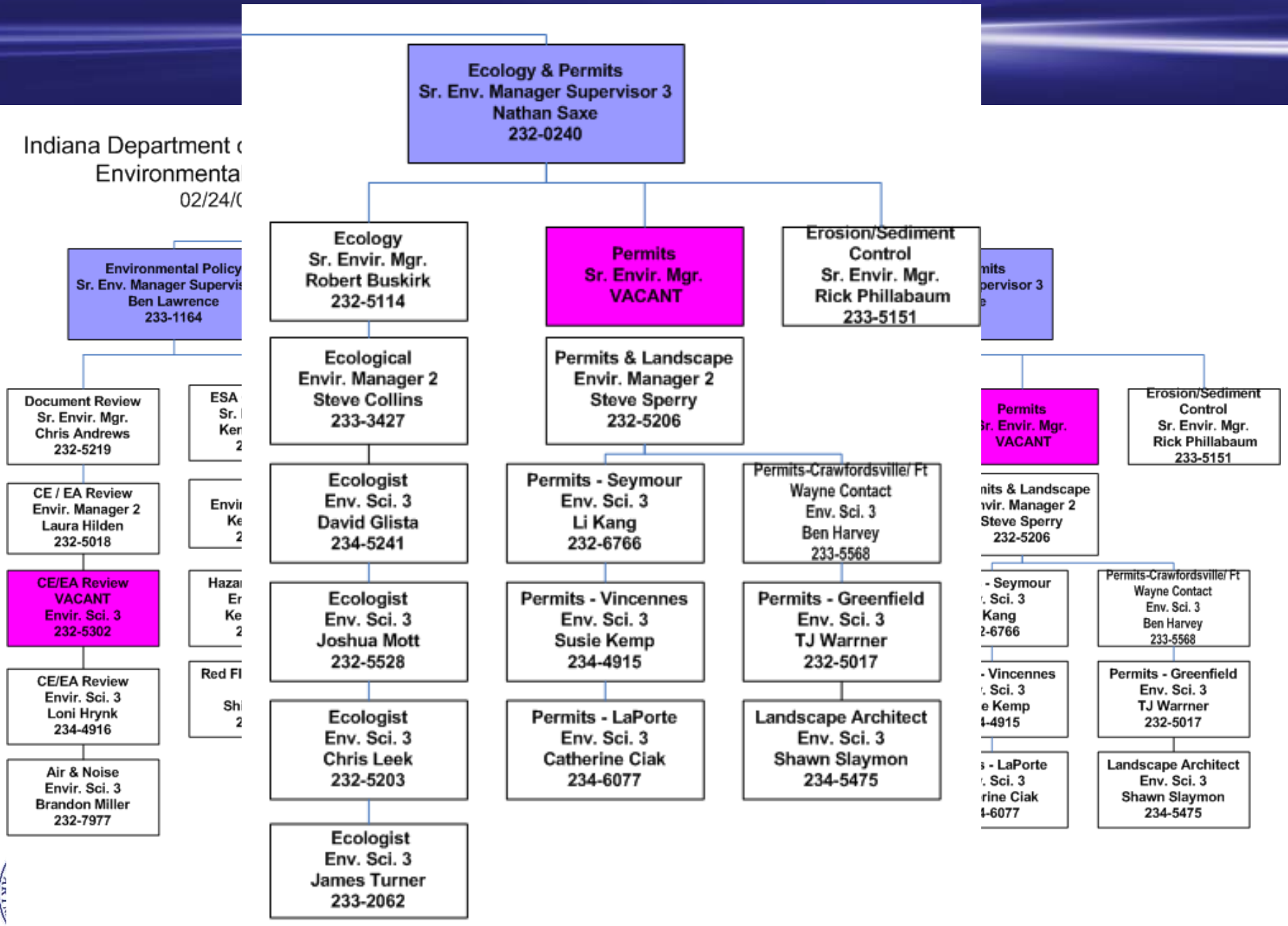
Driving Indiana's Economic Growth

Office of
ENVIRONMENTAL
SERVICES
INDOT

Nathan Saxe

Administrator, Ecology and Waterway Permitting Section

Indiana Department
Environmenta
02/24/



Ecology and Waterway Permitting Unit

Role of Office of Environmental Services – Waterway Permits Unit

- Reviews INDOT projects impacting aquatic resources to determine appropriate type/level of waterway permitting needed.
- Develop/review/process waterway permits
- Develop/review/process mitigation required with waterway permits applications
- Performs site visits to ensure proper enforcement of permits

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
  - At Least 6 Permit Violations Active Right Now
  - Regulatory Authorities are Frustrated

INDOT 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 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 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 &/or Wetland Delineation Report

Streams

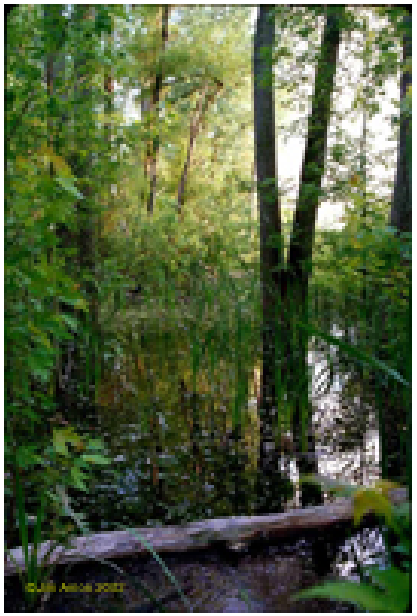
"Defined Bed and Bank"

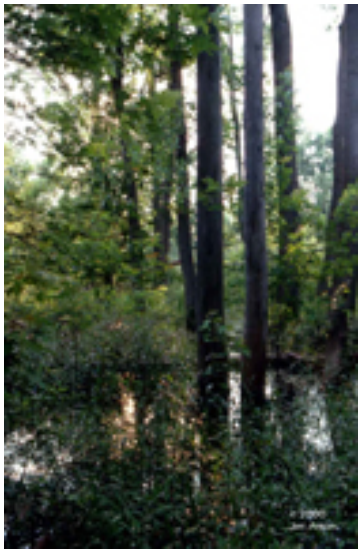
Other examples of OHWM

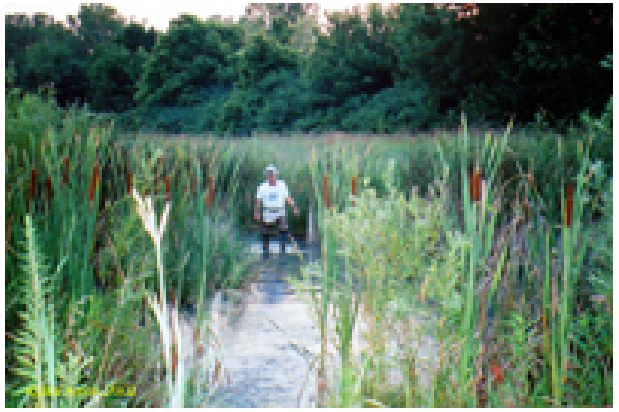
Does it connect to a stream or river and have a defined channel?

No vegetation growing across the ditch line.

Wetlands





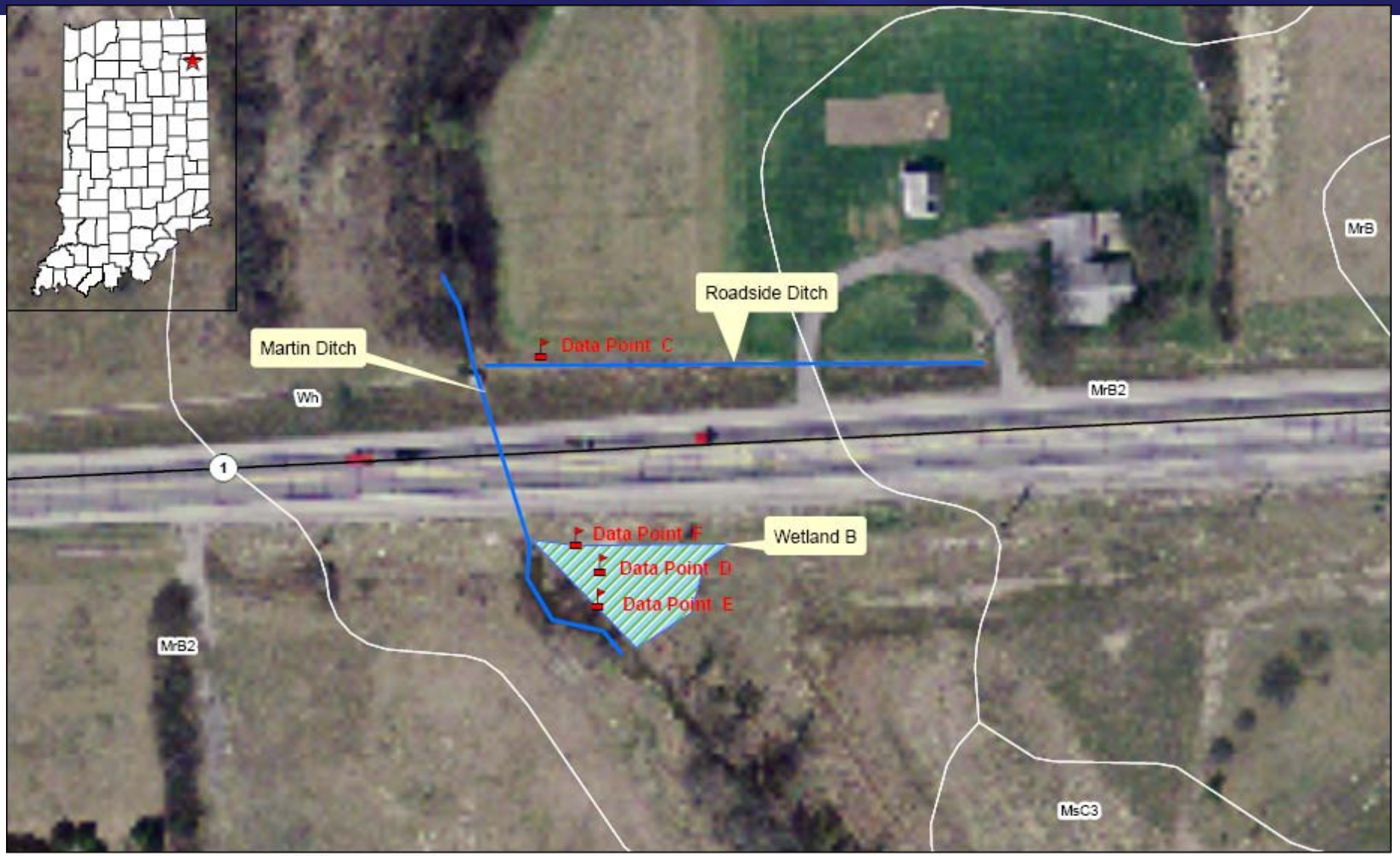


But Also...

Wetland Boundary

- Defined as having Indicators of:
  - Hydrophytic Vegetation
    - Water-tolerant Plants
  - Hydric Soils
    - Water-saturated soils
  - Hydrology
    - Evidence of water

Wetlands



Aerial Photograph 2005
T32N R12E Section 36, T31N R12E Section 5
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

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

Main 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)**

Ind. Dept. of Environmental Management

- **Section 401 Water Quality Certification (WQC)**
- Rule 5 – Erosion Control
- Isolated Wetland Permit

Ind. Dept. of Natural Resources

- Construction in a Floodway Permit
- Navigable Waterways Permit

Federal Environmental Permitting Agencies

- U.S. Army Corps of Engineers (USACE)
  - **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

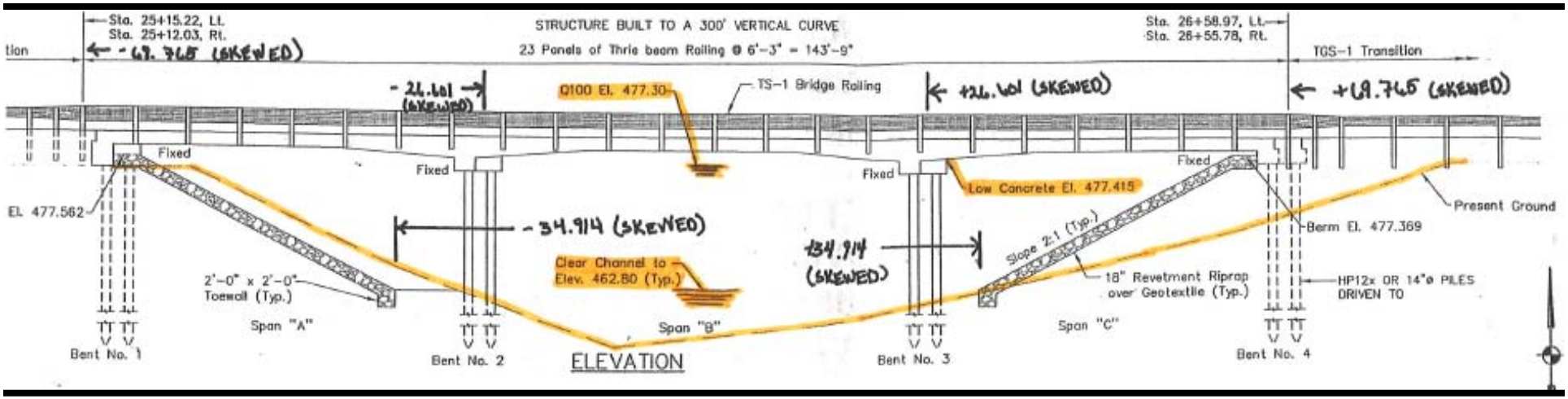
    - 404 Regional General Permit (RGP)
      - Construction Permit expires every 5 yrs (12/15/2009)
      - Discharge (rip rap, stone, soil, etc…) < 1.0 acre into Waters of U.S.

State Environmental Permitting Agencies

- 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 ≥ **0.1 acre**
        - Impact ≥ 300 linear ft. of stream
        - Impact ≥ 150 linear ft. up or downstream of structure
        - Relocation, Encapsulation or Channelization of ≥ 150 linear ft. for the purpose of stream crossing

State Environmental Permitting Agencies

- 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

County Environmental Permitting Agencies

- 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 *prior* 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)

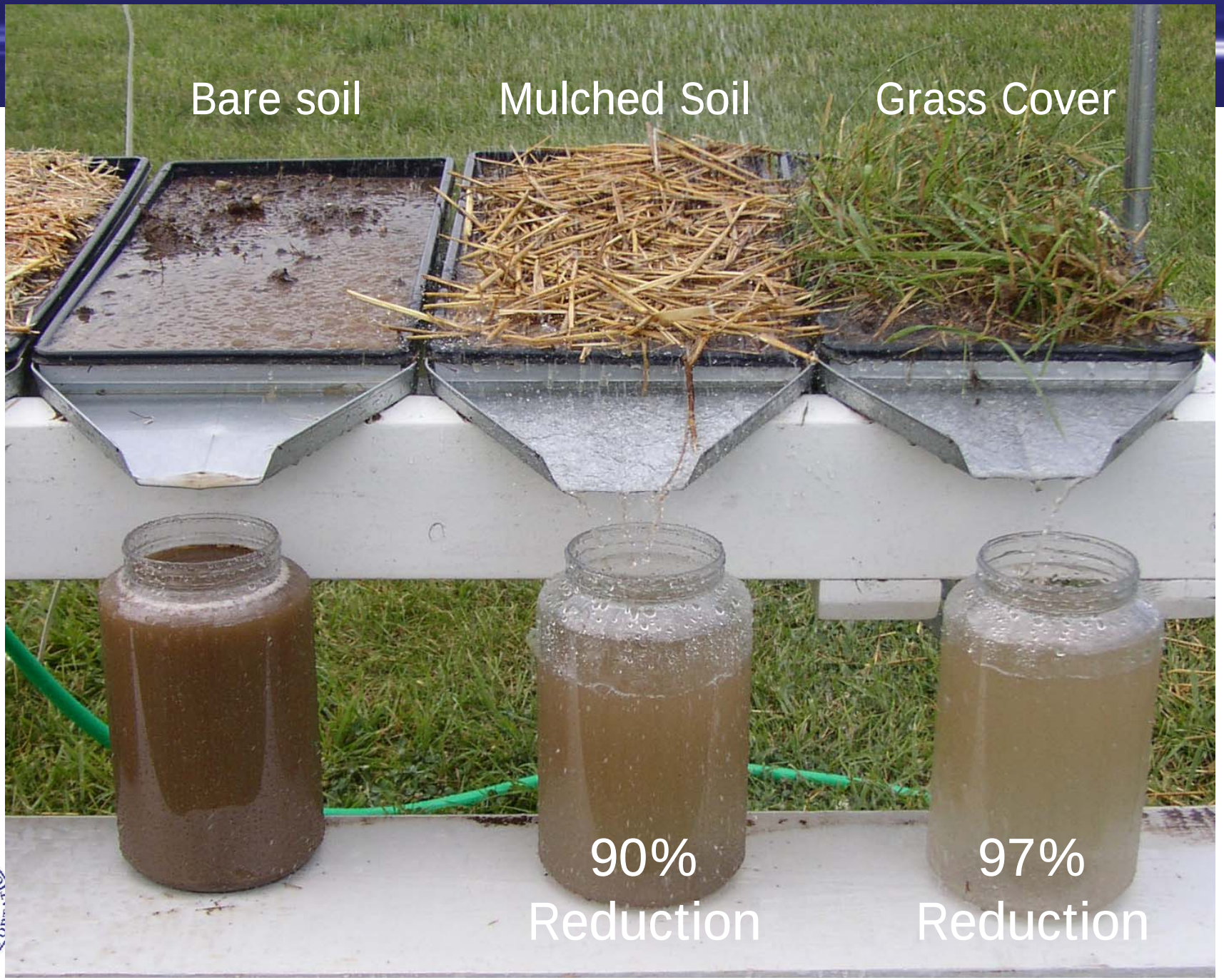
IDEM Rule 5 – Erosion Control

- 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


Bare soil
Mulched Soil
Grass Cover
90%
Reduction
97%
Reduction

Erosion Control Measures

- Minimize Vegetation Clearing
  - Retain Existing Vegetation
- Stabilize Exposed Areas ASAP
  - Temporary
    - Seeding within 15 days of Exposure
    - Anchored Mulches
    - Soil Treatments
      - Polyachrylamide (PAM)
  - Permanent
    - Final Seeding/Planting
    - As Designed Rip Rap Placement
    - Erosion Control Blankets and Matting

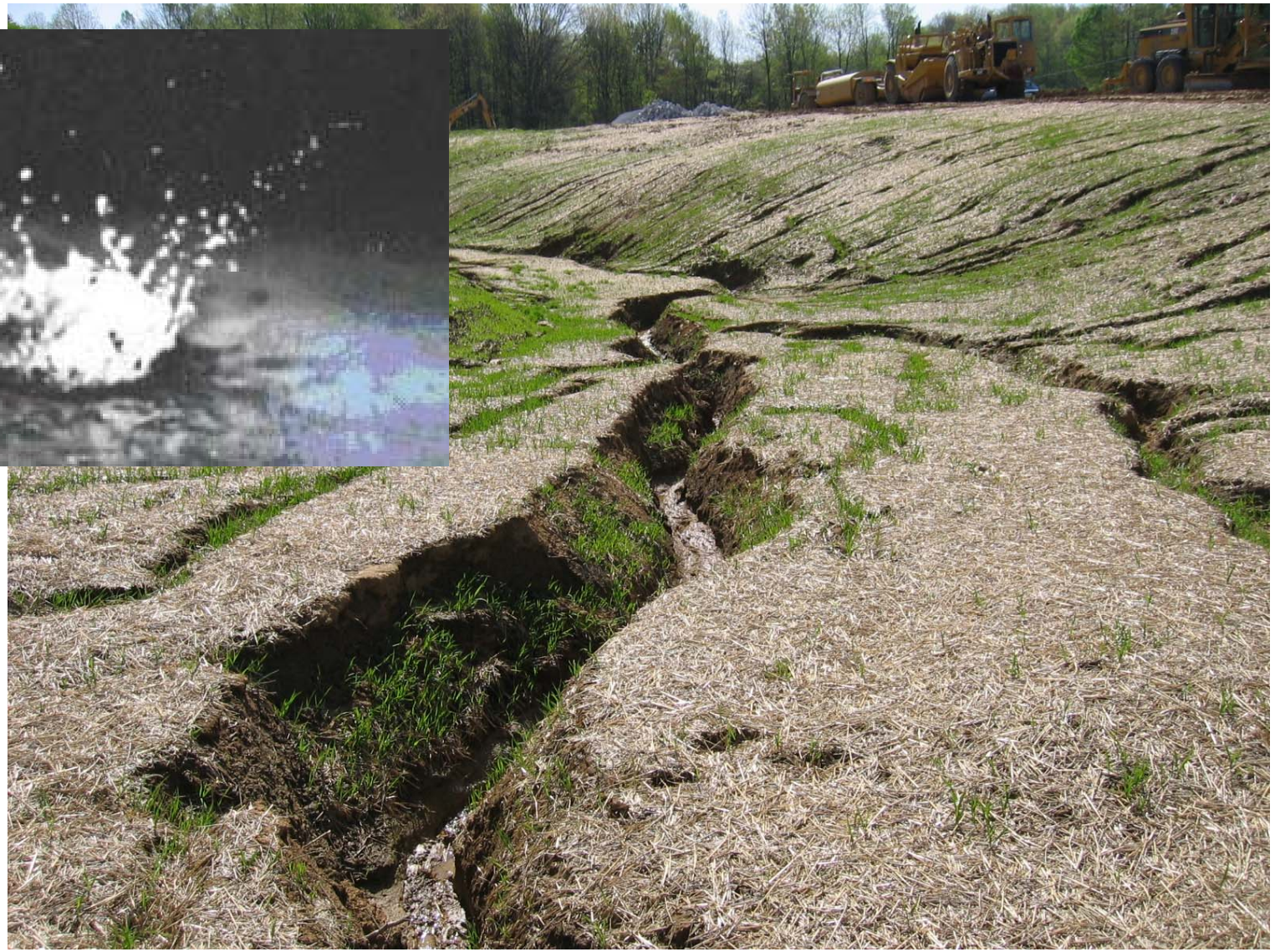
Erosion Control Measures (cont.)

- Others
  - Flumes
  - Temporary Slope Drains
  - Check Dams
  - Temporary Diversion Dikes
  - Diversion Channel
  - Dewatering
    - Temporary Pump Around
    - Coffer Dams
    - Stable Diversion Channel

Sediment Control Measures

- Silt Fence
- Straw Bale Barrier
- Sediment Traps
- Turbidity Curtain
- Stable Construction Entrance
- De-watering Structures
  - Filter Bag
  - Straw Bale/Silt Fence Pit

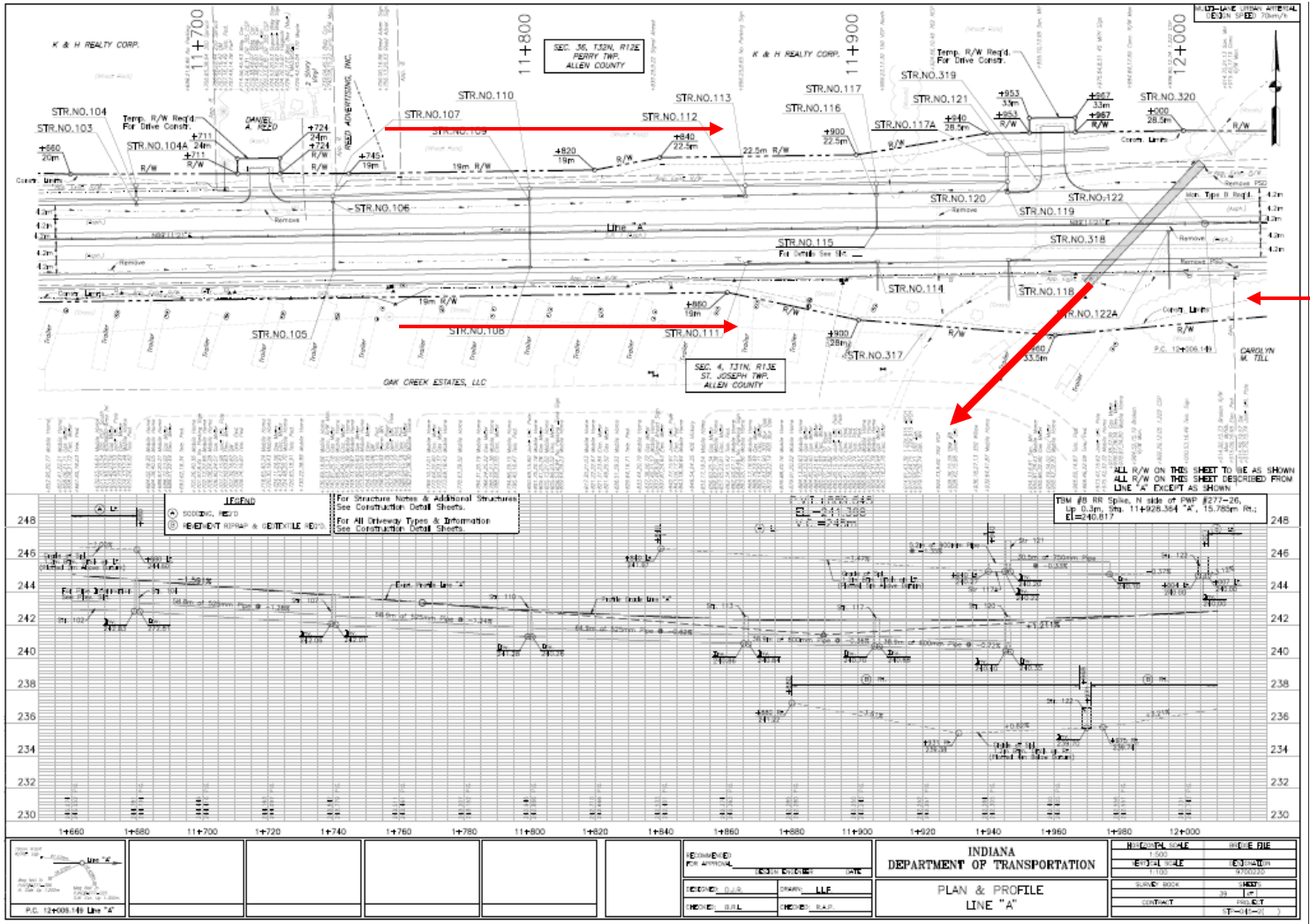
Water is Industrious



Water is Lazy

- Where is the lowest point on the project
- The silt runs downhill
- Protect the exits

Part 1: Plan Design



Part 2: Implementation

Most Important Factor

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!**

INDOT 2008 Std. Specs.

- **201.02 General**
  - "...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 2008 Std. Specs.

- **203.08 Borrow or Disposal**
  - "...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 2008 Std. Specs.

- **203.08 Borrow or Disposal**
  - "...**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 2008 Std. Specs.

- **203.08 Borrow or Disposal**
  - "...**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-of100 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 R1 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 R1 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/7147.htm

INDOT 2008 Std. Specs.

- **203.09 General Requirements**
  - "...The Engineer will direct the Contractor to stabilize an area if the disturbed ground has been or will be left bare and unworked **for fifteen consecutive calendar days**. Once directed, the Contractor shall stabilize these areas **within ten calendar days**. These methods shall be installed in accordance with 621 or as otherwise directed.
- **203.10 General**
  - "...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. (150 mm) or more, as directed, measured perpendicular to the face of the slope..."

INDOT 2008 Std. Specs.

- **205.03 Control Measures**
  - "...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 erosion or sediment control becomes an issue during the contract..."
  - "...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 made where appropriate to meet field conditions**. These measures shall be constructed as soon as practical and shall be maintained in accordance with the following..."

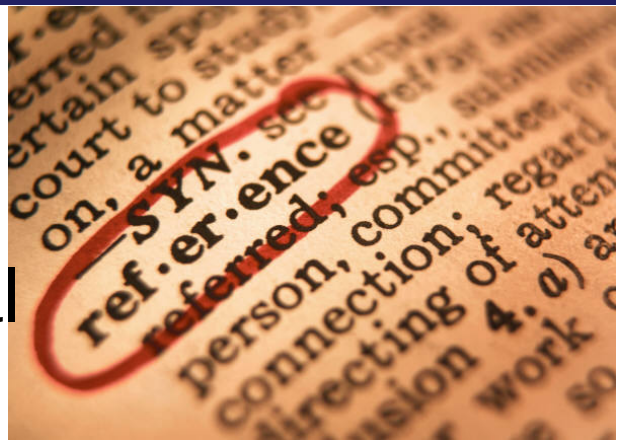
INDOT 2008 Std. Specs.

- **205.04 Maintenance**
  - "...measures shall be **inspected by the Contractor** once every seven days and after rain activities. Inspections **shall be documented** and records shall be maintained by the Contractor, to be made available for review upon request. Records shall include, at a minimum, the date, the inspector's name, the maintenance and corrections needed based on this inspection, and the status of previously identified deficiencies. 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 2008 Std. Specs.

- **205.05 Removal**
  - "...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 riprap and straw bales shall be as directed..."

References



- Waterways Permitting Manual
  - Laws & Permitting Agencies
  - Permit Process
  - Types of Permits USACE, IDEM, IDNR, County
  - Mitigation
  - 17 appendixes
  - Can be found on Internet
    http://www.in.gov/indot/files/WaterwayManual.pdf

    or as a link on INDOT OES Internet website

    http://www.in.gov/indot/7287.htm

Resources

- Procedural Manual
- Cultural Resources Manual
- CE Manual
- Waterway Permits Manual
- Haz Mat and Ecology Manual in 2008
- OES Website
  http://www.in.gov/indot/7287.htm

INDOT Construction Tips

- **Read your Permit!!!!!!!!!!!!!!!!!!!!!!!!!**
  - Outlines Conditions that MUST be followed
- Ammend/Extend permit if construction differs from plans
  - In/Near Locations of Water Resources
  - Beyond planned construction timeline
- When in doubt, ask someone!
  - INDOT Office of Environmental Services

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

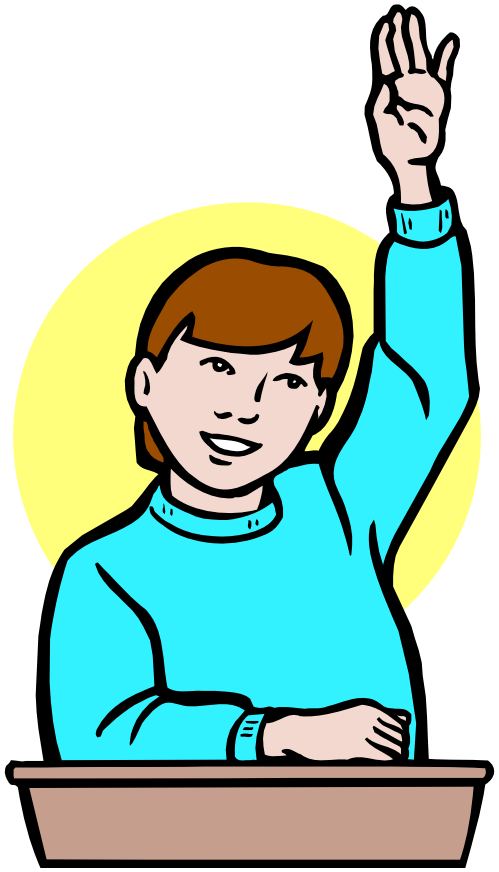
INDOT Construction Tips

- Develop Erosion and Sediment Control Plan with Thoughts Regarding 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

Questions?



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• ECOLOGY & WATERWAY PERMITTING •
CULTURAL RESOURCES • ENVIRONMENTAL POLICY •

INDIANA DEPARTMENT OF TRANSPORTATION
INDOT

State Environmental Permitting Agencies

- 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)

Project Costs: Average Cost for Mitigation

- Construction Cost - $30,000/ac
- Land Acqu. Asst. - $7,000/site
- Land Acqu. - $5,000/ac
- Survey - $15,000/site
- WMMP - $12,000/site
- Design - $25,000/site
- Archaeology - $700/acre
- Geotech - $9,000/site
- Site Maintenance - $8,000/year X 4 years ($32,000)
- Monitoring - $4,000/year X 5 years ($20,000)

- **Total for mitigation associated with impacts to 0.2 acre of wetland = $227,000**

(0.2 PFO X 4) = 0.8 __ 0.8 + 0.4 (buffer) = 1.2 __ 1.2 + 0.5 (contingency) = 1.7 _____ 1.7 + 1.3 (LO Negotiations) = 3.0 acres acquired + Costs associated with downtime.

Floodway Boundary