ESC Review

Mark Miller, Construction Engineer, INDOT
Eryn Fletcher, Sr. Transportation Engineer, FHWA

Road School 2015
ESC Review

- **Purpose:**
  - Assess State of Practice
  - Suggest Improvements

- **Timeline:**
  - Kick-Off Meeting: December 5, 2013
  - Close-Out Meeting: October 17, 2014
Resources & Guidance

- **Executive Oversight:**
  - Rick Marquis (FHWA)
  - Robert Tally
  - Sam Sarvis
  - Jay Wasson

- **Regulatory Agencies**
  - IDEM
  - EPA
Committee Members

- **Mark Miller**, Co-chair and INDOT lead
- **Eryn Fletcher**, Co-chair and FHWA lead
- **Agencies – EPA, IDEM, ACoE, USFWS**
  - Doug Wolf
  - Virginia Laszewski
  - Ken Westlake
  - Deborah Snyder
- **Several INDOT/FHWA members**
  - Michelle Allen
  - Tom Duncan
  - Sarah Prizio
  - Laura Hilden
  - Nathan Saxe
  - Greg Pankow
  - Michelle Gottschalk
  - John Wright
  - Russ Brittain
  - Kurt Pelz
  - Tom Harris
  - Richard Phillabaum
  - Kathy Allen
Organization

ESC Committee

- Standards Review Subcommittee
- Design Process Review Subcommittee
- Bid Analysis
- Project Design Review Subcommittee
- Construction Review Subcommittee

Part 1

Part 2
Part 1

- Travelled to Ohio
- Design Observations
  - Phased NOI, Final after letting
  - Designers responsible for preliminary
  - Contractors responsible for final
Part 1 Ohio Model

- **Standards Observations**
  - Two Pay Items – One for measures, one for SWPPP
  - Contractor is co-permittee => ownership
  - Training certification requirements
  - Design involvement during construction
Part 2 Methodology

- Bid Analysis used on all projects from 2012
- Design and Construction used randomly selected representative sample
  - Active in construction
  - Involved Rule 5
Part 2 Methodology

- Population: 77 projects
- Sample Size: 43 projects
- 95% Confidence Level, 10% Margin of Error
Part 2 Bid Analysis

- **Bid Analysis**
  - Average of .70% of bid amount at close
  - 1% of bid recommended as re-evaluation threshold
  - ESC items average underrun of 30%
Part 2 Design

- Project Designs
  - Largely conform to INDOT requirements

Project Score Distribution

- 0-50%: 18%
- 50-60: 29%
- 60-70: 11%
- 70-80: 21%
- 80-90: 8%
- 90-100: 13%
Part 2 Design

Some lower scores/less reliable items:

- Location and name of waters
- Soils information
- Contour lines
- Storm water discharge locations
- Permanent measures
- Inlet/outlet protection
- SWPPP’s did not contain watershed information
Part 2 Construction

- **Project Construction**
  - Misunderstanding of ESC
  - Training has a significant impact
  - Contract Compliance with ESC Plan submittal is low
  - INDOT Processes not routinely followed
  - BMP maintenance issues exist
  - Stabilization not routinely employed
Part 2 How are we doing?

Star Rating

- 1 (26%): 5%
- 2 (26%): 26%
- 3 (26%): 26%
- 4 (33%): 33%
- 5 (10%): 10%

Star Rating

Percent of Projects

Rating

Rating

Percent of Projects
60% of Projects look pretty good...

Most Likely Due To . . .

Perimeter Control Implementation

Rule 5 Conformity

- Yes 60%
- No 40%

- Satisfactory 40%
- Marginal 38%
- Unsatisfactory 22%
Part 2 Training Trends

No Training:
50% of contracts performed well

Star Rating:
Contracts without Training

Training:
80% of contracts performed well

Star Rating:
Contracts with Training

Percent of Contracts

Star Rating

Percent of Contracts

Star Rating
Part 2: Projected Training Impact

Current

Rule 5 Conformity

Yes 60%

No 40%

Projected

Projected Rule 5 Conformity

Yes 80%

No 20%
Part 2 Contractor ESC Plan Contract Compliance

No Plan 41%
Plan Submitted 59%
Fell Short of Requirements 75%
Meets Requirements 25%

Resulting in an overall contract compliance rate of 14%
Part 2 Internal Process Compliance

ESC Inspection Reports with Owner Concurrence

- Reports signed: 55%
- Reports not signed: 45%

Rate of Owner QA

- Owner QA: 13%
- No owner QA: 87%
Part 2 BMP Maintenance

- Status of BMP maintenance:

  Existing ESC Measures Maintained

  - Satisfactory: 46%
  - Marginal: 21%
  - Unsatisfactory: 33%
Part 2 Stabilization

- Stabilization of Exposed Areas:
  
  Disturbed Areas Adequately Protected

- Unsatisfactory: 44%
- Marginal: 15%
- Satisfactory: 41%
Summary

21 Observations

9 Action Items

- Certification Training
- Revisions to Design Manual, Standard Specifications, GIFE
- Publish Storm Water Field Guide
- Implement electronic inspection reporting
- Revise Oversight Procedures
- Trial set of projects for design developed SWPPP sequence
- Conduct follow up review in 2017
Training

- INDOT introductory ESC required for INDOT & contractor staff
- In 2014 95 contractors/consultants & 128 INDOT staff were trained
- 8 sessions starting in March
- One per district & 2 make-up in central office
- Designers – CPESC certification
- Field staff – CESSWI certification
205 Specifications

- Revised 205 specification for contracts with Rule 5 requirements completed
- RSP 205-R-261 11/21/14
- Identified 5 contracts starting with July 2015 letting
205 Specifications

- Contractor identifies Stormwater Quality Manager responsible for QCP and maintaining ESC best practices
- Must pass INDOT ESC training & obtain CESSWI certification or be in training status
- INDOT obtains NOI and provides basic ESC plan
205 Specifications

- Contractor submits QCP for ESC and revised Stormwater Pollution Prevention Plan
- Can be phased and updated as work progresses
- Pay item for plan
- ESC item established to create a budget for contractor to work from
- Contractor decides specific items to use
205 Specifications

- Established unit prices for individual items are used as budget is drawn down
- Monitored by project staff, change order to increase if needed
- Change order if there is a needed item with no established price
205 Specifications

- Contractor performs inspections and reports to project staff
- Project staff monitors for compliance and provides QA checks
- Communication is key
Stormwater Field Guide

- Printed copies distributed at INDOT training sessions
Action Items

- Draft topsoil specification has been distributed and comments due mid-March
- Will be completed by June for incorporation in appropriate contracts in the fall
- Need and cost impact will be considered for each contract
Monitoring & Oversight

- Instructions will be revised for new contracts
- Risk based oversight & monitoring
- Support from district ESC specialists
Design Revisions

- IDM revisions to be implemented by January 2016
- Ongoing annual reviews of IDM
- Trial projects to be selected for trial of increased sequencing in the original ESC plan provided by the Department
Future Action

- Calendar year 2017
- Review results for differences in compliance
- Confirm progress, identify additional areas for improvement
Questions?