



ESC Review



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



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

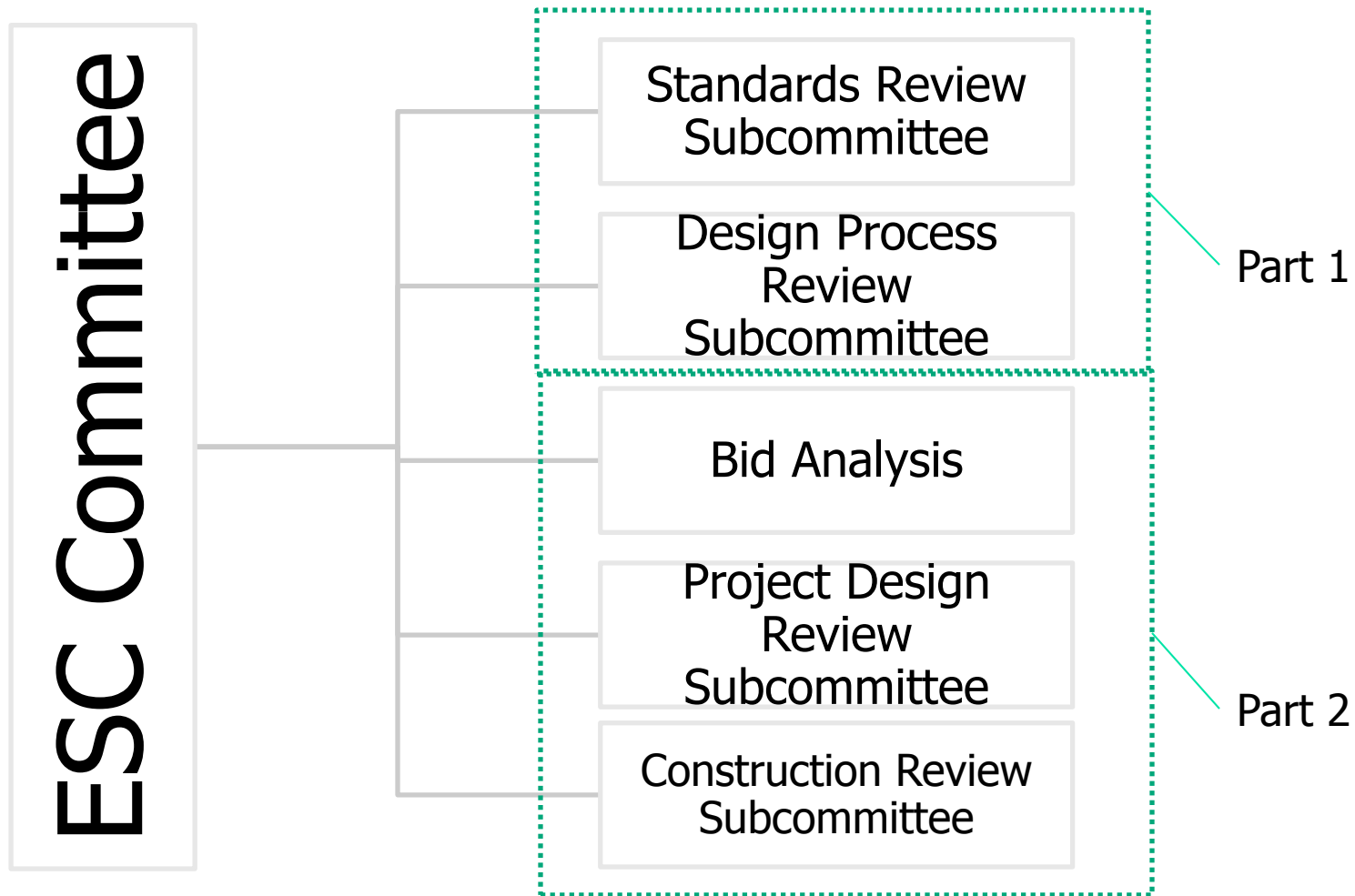
Tom Harris

Richard Phillabaum

Kathy Allen



Organization



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

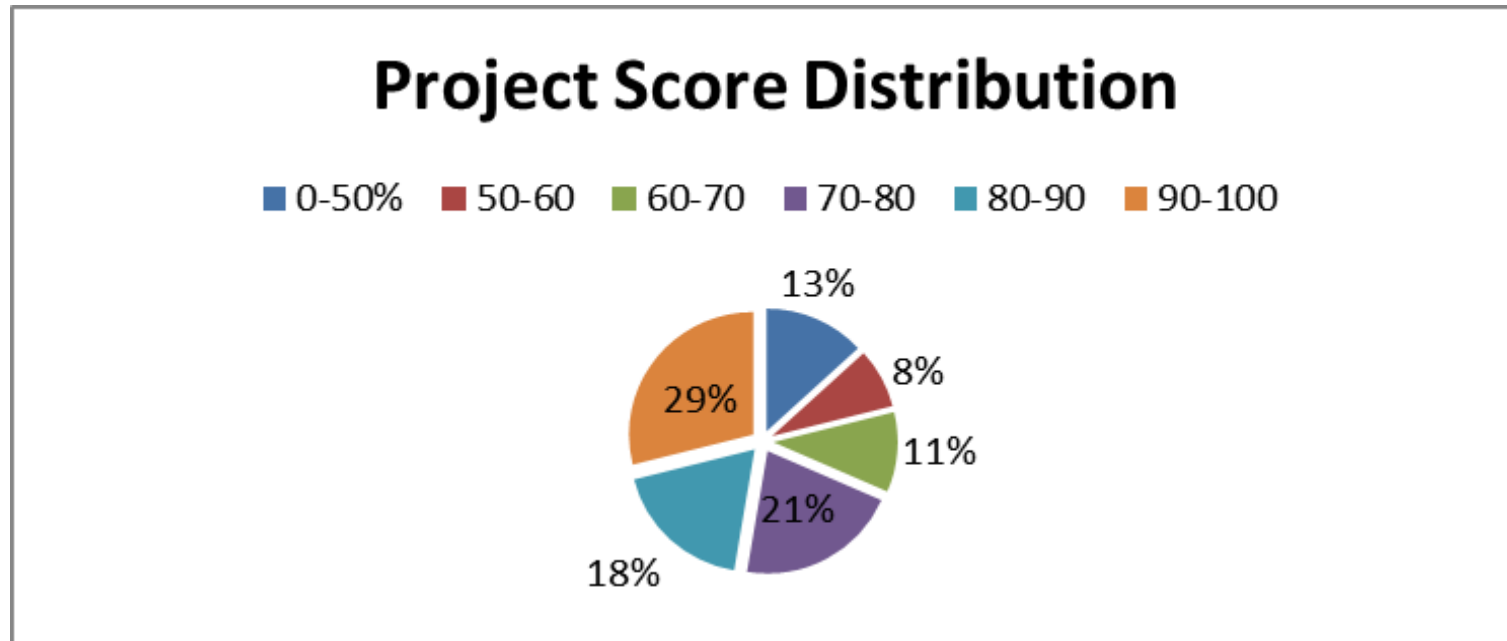
- Average of .70% of bid amount at close
- 1% of bid recommended as re-evaluation threshold
- ESC items average underrun of 30%



Part 2 Design

■ Project Designs

- Largely conform to INDOT requirements



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

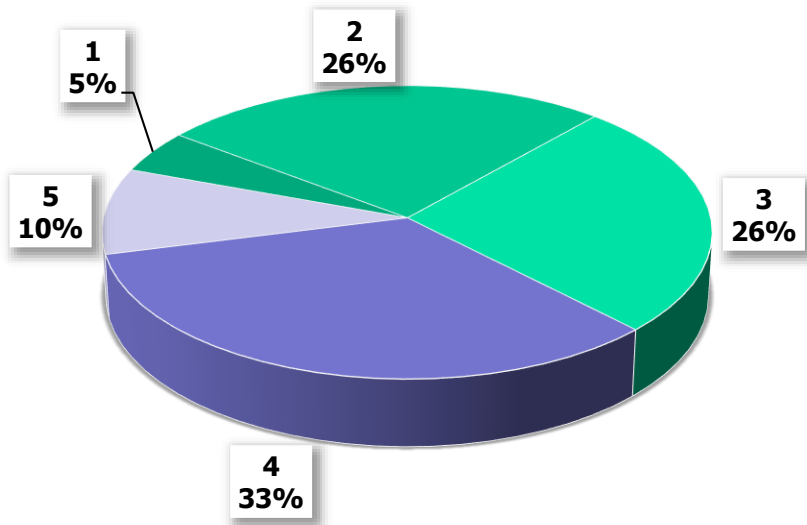
■ Project Construction

- 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

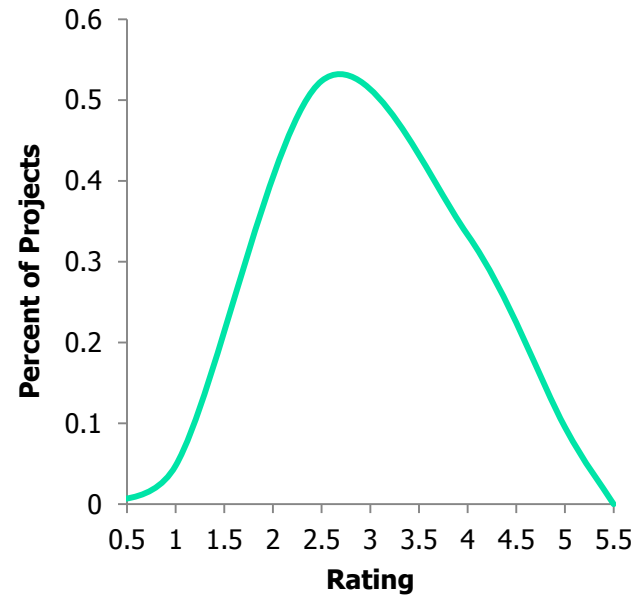


Part 2 How are we doing?

Star Rating



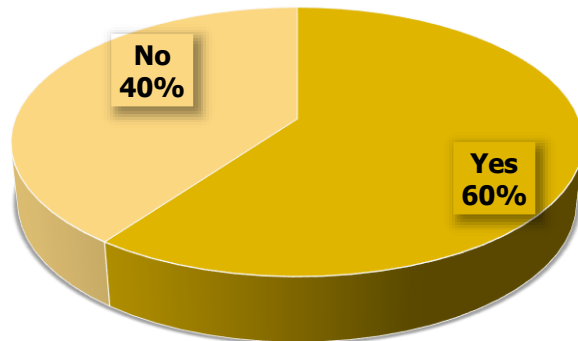
Star Rating



Part 2 How are we doing?

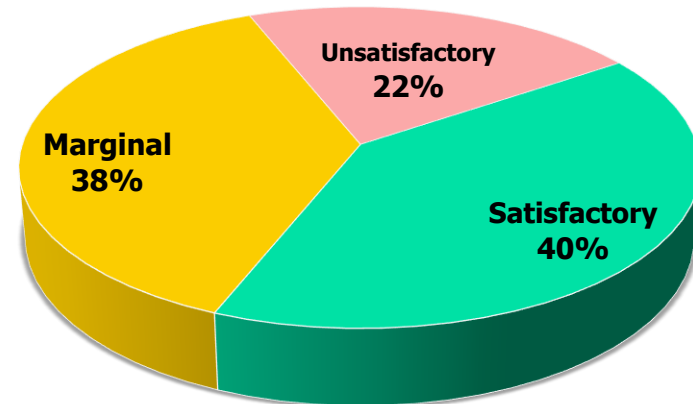
60% of Projects look pretty good...

Rule 5 Conformity



Most Likely Due To . . .

Perimeter Control Implementation

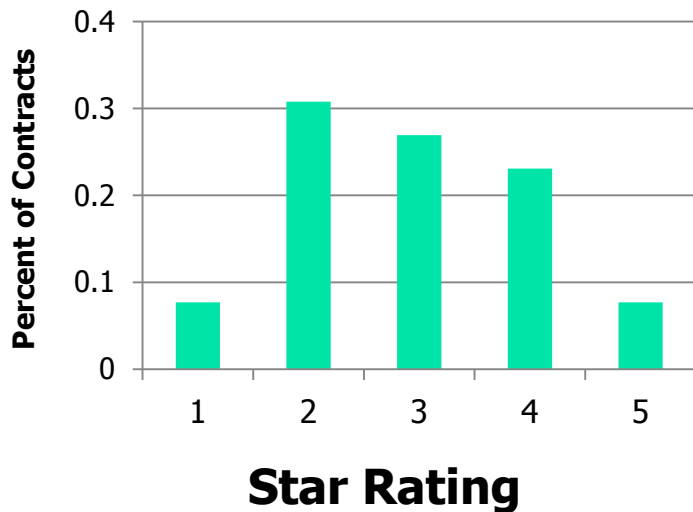


Part 2 Training Trends

No Training:

50% of contracts performed well

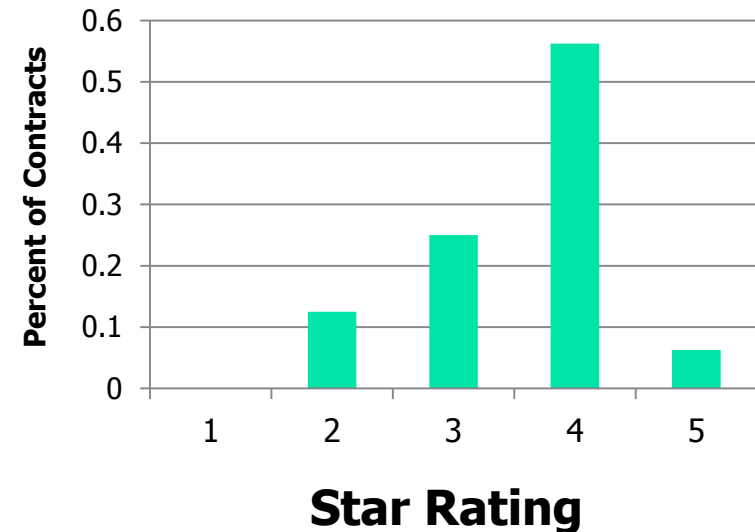
**Star Rating:
Contracts without Training**



Training:

80% of contracts performed well

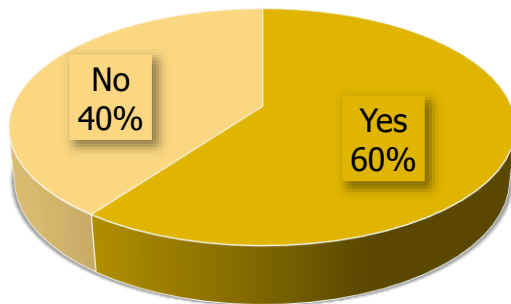
**Star Rating:
Contracts with Training**



Part 2: Projected Training Impact

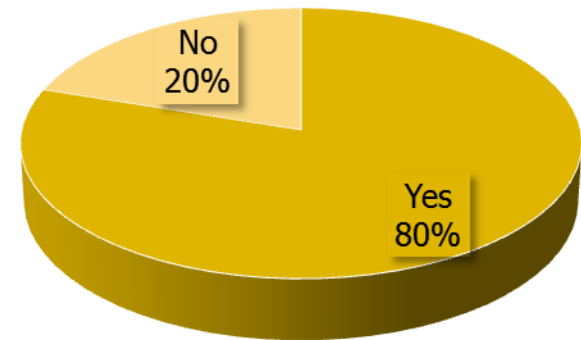
Current

Rule 5 Conformity



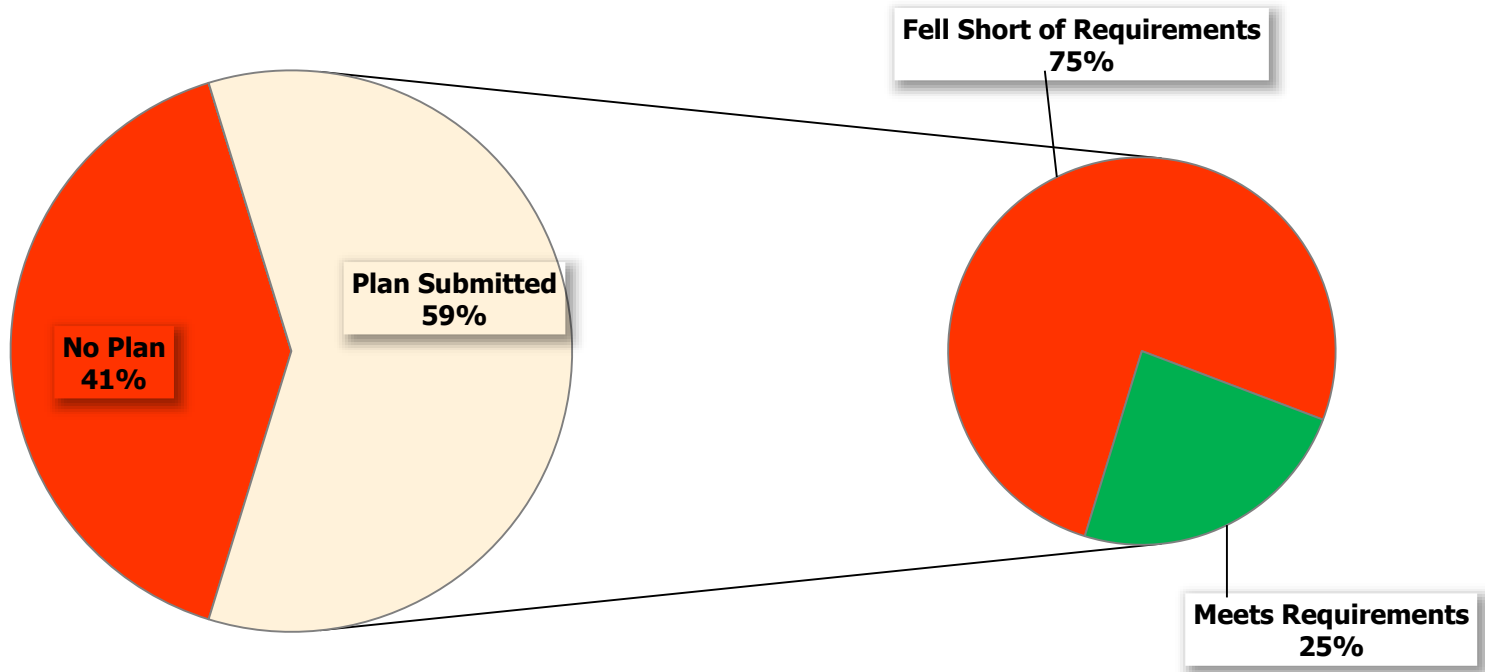
Projected

Projected Rule 5 Conformity



Part 2 Contractor ESC Plan Contract

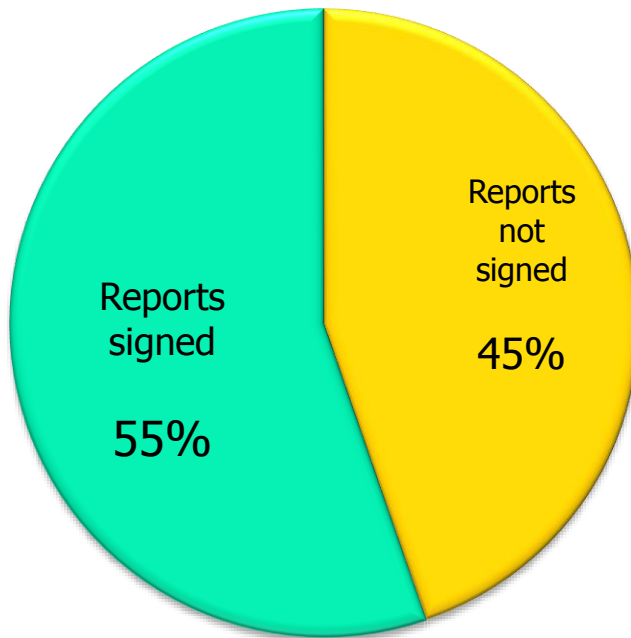
Compliance



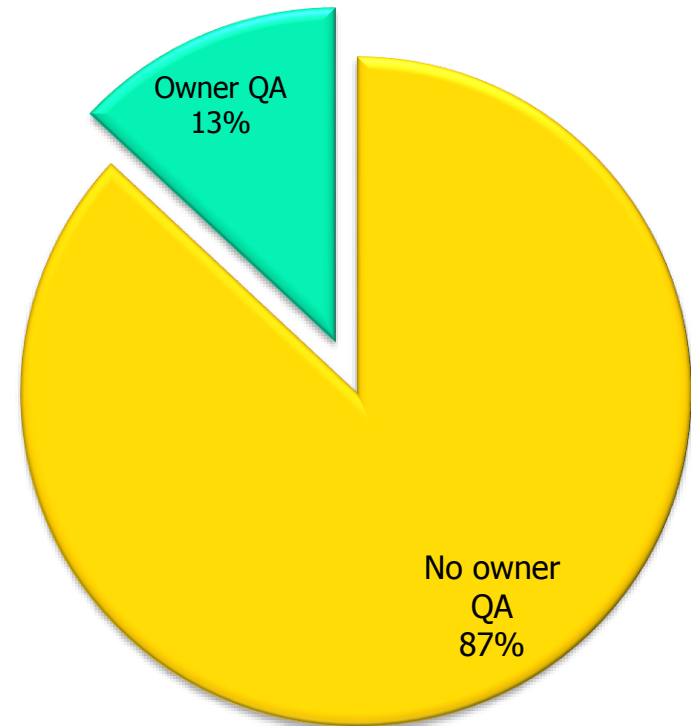
Resulting in an overall contract compliance rate of **14%**

Part 2 Internal Process Compliance

ESC Inspection Reports with Owner Concurrence



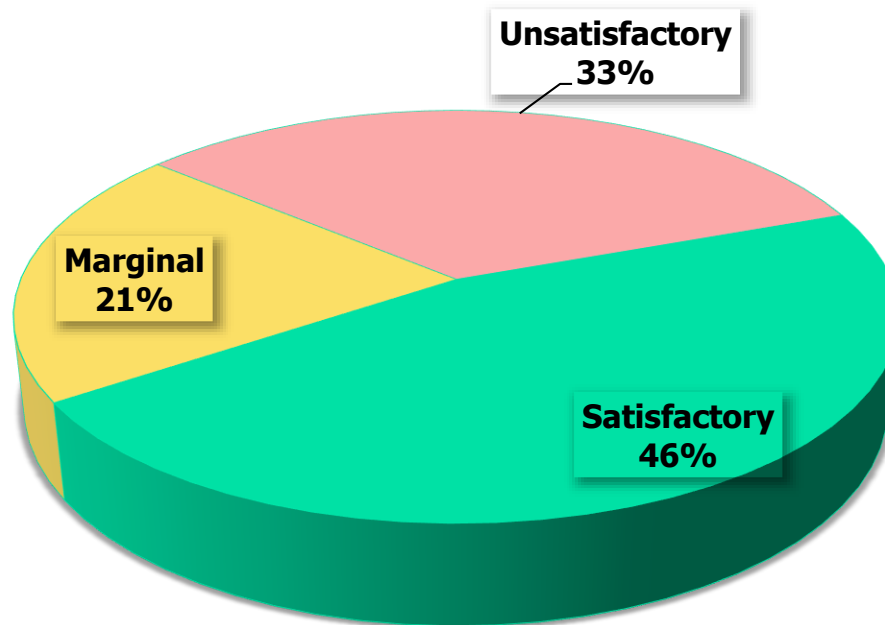
Rate of Owner QA



Part 2 BMP Maintenance

■ Status of BMP maintenance:

Existing ESC Measures Maintained

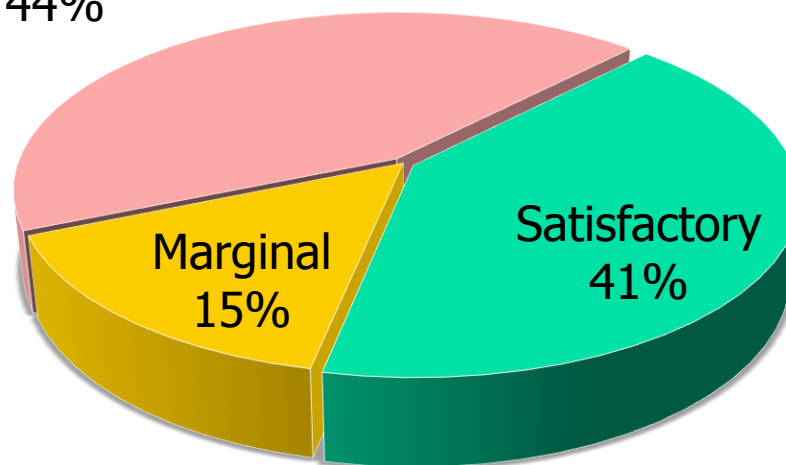


Part 2 Stabilization

■ Stabilization of Exposed Areas:

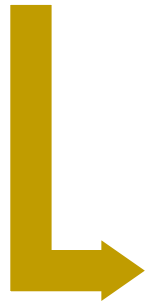
Disturbed Areas Adequately Protected

Unsatisfactory
44%



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

- **Available on website:**
in.gov/indot/files/StormWater_Field_Guide_2015.pdf
- **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?

