2018 SCOD Update
Technical Committee on Cost Estimating

AASHTO
Committee Membership

Chair - Angela Smith, Maryland DOT

Vice Chair - Melissa Batula, Pennsylvania DOT

Secretary - Edwin Okonkwo, FHWA DC

AASHTO Liaison - Patricia Bush, AASHTO LIAISON
Committee Membership

Region 1
• Alan Ellis - VT
• Melissa Batula - PA
• George Macdougall - ME
• Matthew Vincent - DE

Region 2
• Greg Davis - FL
• Theron Knouse - VA
• Charles Nickel - LA
• Troy Patterson - GA

Region 3
• Jeff Hisem - OH
• Mark Shulick - MI
• Val Svensson - MN
• Elijah Gansen - IA

Region 4
• John Riedl - OR
• Lesly Tribelhom - MT
• Jack Young - CA
• Vacant
Committee Management

Meetings

• Annual Meeting held concurrently with TEA/PUG
• BiMonthly Webconferences.

Documentation on website

• Minutes posted on website
• Research summaries
• Cost estimating tools

Subcommittees

• “Meet” separately
• Report out at bimonthly and annual meetings
Accomplishments

• Development and sharing of cost estimating and risk analysis tools and strategies.
• Participated in developing the response for FHWA to the OIG audit on national cost estimating practices and procedures.
• Manual Review – Chapters 1-6 reviewed. Compiling comments.
• Ongoing development of training
  • Risk Based with FHWA
  • Manual Based
Accomplishments

Subteams for updates

• Research
• Conference
• Practical Guide – Training
• FHWA – (Risk-Based) Training
• Website
• Manuals – development or updates
2017 Meeting Summary

- Annual Meeting held in Kalispell Montana
- Joint conference with TCCE-TEA-PUG
- 23 total attendees
  - 14 State DOT TCCE members in attendance
    - 12 in person (2 new members)
    - 2 by conference call
    - 1 vacancy
  - 2 TCCE liaisons
    - AASHTO
    - FHWA
  - 7 guests
    - USDOT/FHWA
    - Other DOTs
    - Estimating Vendors/Firms
Members Top Issues 2017

- Risk Allocation
- Lump Sum Items
- Funding uncertainty
- Staffing/training experience
- Unbalanced Bids
Objectives and Goals Update

Maintain and keep relevant the AASHTO Practical Guide to Cost Estimating.

Stay current with and share findings on state of the practice for cost estimating and risk based estimating for transportation projects.

- Network with FHWA, and national and regional groups with respect to transportation cost estimating.
- Continue research efforts on cost estimating and risk based estimating related topics.

Provide means for collecting comments and questions on the guidance.

Develop guidance and tools to help agencies develop transportation cost estimates as they relate to:

- Training and development of cost estimators
- Evaluating methods and tools being used in the industry
- Sharing agencies’ best practices and lessons learned
- Alternative contracting methods (design build, CMGC, best value, job order contract, etc.)
- Lifecycle costs

Provide guidance on the purpose and use of transportation cost estimates as they pertain to:

- Alternative contracting methods (design build, CMGC, best value, job order contract, etc.)
- Lifecycle costs
- Project phase (planning, programming, design, etc.)
- Bid analysis
- Risk Analysis
Outreach/Branding

- Develop Logo
- Potential Link From EDC
- Update webpages and add some excitement
- AASHTO outreach for branding
- Work with TEA for outreach options
  - Web-based activities with other users
- Sharing best practices
Publications

2013 · First Edition

PowerPoint Modules for Training Companion
Voted to release for current “owners” of the companion manual

TC 3 Self-Paced Web Modules Companion Training with Testing
Seeking funding mechanism
Proposed Research/Training

Develop Risk Based Training with FHWA
- Prepare application for EDC-5
- Continue working with FHWA on update of 2004 FHWA guidance

Research/SCAN
- Bimonthly reviews of estimating research
  - Identify useful tools
  - Recommend additional research options for NCHRP proposals
- Recommendations from Subgroups for Research or SCAN
- Potential option - Return
Additional Presentations/Discussion

- Estimating tools
- Validating Bids and Setting budgets
- Analyzing Estimates, bids and bidders
- Alternative/Innovative Contracting Methods
- Estimating Software
- Bid-Based Estimating Methods
- FHWA NCCI - Validation of Project-level Construction Cost Index Estimation Methodology
- Update on FHWA Guidelines for Cost Estimating and Bid Review
Estimating Tools

- **Unit Price Analyzer** – bid-based estimating tool that utilizes linear regression to determine costs based on a number of factors (quantity, location, project type, etc.)
- **Percentage Analyzer** – Analyzes lump sum items as a percent of total project cost based on a variety of factors
- **Cost Index** –
  - National
  - State-specific
  - Item specific - MN
  - Other
- **Bid Prediction** – Predicts the number of bids based on a variety of factors (letting month, county, fund, etc.)
- **Monte Carlo Estimator**
- **Design-Build Project estimator**
- **Spatial Analysis Tools** –
  - Heat maps
- **Parametric**
  - Cost per mile
  - Bridge square foot
Estimating Tools

- **Life cycle tools (project specific)** – CO, MI
- **Forecasting**
  - Global Insight – economic indicator for various sections (subscription)
  - Forecasting
  - Inflation
  - Escalation
- **Equipment/labor costs**
  - RS Means
- **Cost Driver Analysis**
  - Project specific
  - 80/20 rule
- **Bid History**
- **Risk Analysis**
- **Cost Estimating Software**
Research Topics

Title
• Top-down Construction Cost Estimating Model/Guide Using a Neural Network
• Construction cost estimation: A parametric approach for better estimates of expected cost and variation
• Advanced Methodology to Determine Highway Construction Cost Index (HCCI)
• Best Practices for Budget-Based Design
• Bridge Design Effort and Cost Estimation Models - Phase I
• Cost of Independent Bicycle and Pedestrian Projects: Data, Challenges, and Variations
• Costly Errors: Analyzing Trends in Federally Funded Transit Project Cost Estimates
• Roles and Responsibilities of Independent Cost Estimator in Construction Manager-General Contractor Highway Construction
• Reducing Data-Collection Efforts for Conceptual Cost Estimating at a Highway Agency
• Estimating Annual Maintenance Expenditures for Infrastructure: Artificial Neural Network Approach
• Multidimensional Highway Construction Cost Indexes Using Dynamic Item Basket
• Transportation Cost Index: A Comprehensive Performance Measure for Transportation and Land and its Application in OR, FL, and UT
• Development of a Cost Index for In-House Roadway Maintenance Work for the North Carolina Department of Transportation
• Impact of Life-Cycle Costs Threshold Criteria in the Alternate Design Pavement Bidding Practices of Public Transportation Agencies
• Effects of Price-Adjustment Clauses on Number of Bidders and Dispersion of Bid Prices in Highway Construction
What belongs to TCCE

Cost Estimating
• Construction
• PreConstruction

Overlapping topics
• Value Engineering
• Innovative Contracting
Friends of TCCE

• Initially additional conference attendees.
• Now join in on conference calls.
  • Provence of Quebec
  • Interested parties from two other DOTs
Questions