Alternate Bidding History and Requirements
2013 Purdue Road School

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and

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POI - Agenda

- Introduction and stage setting
- Current requirements
- Issues
- Future vision and direction
- Questions & some answers, or more questions
Introduction and stage setting

- Brave men to the front!
In 1818 the Institution of Civil Engineers was founded in London, and in 1820 the eminent engineer Thomas Telford became its first president. The institution received a Royal Charter in 1828, formally recognizing civil engineering as a profession. Its charter defined civil engineering as:

The art of directing the great sources of power in nature for the use and convenience of man, as the means of production and of traffic in states, both for external and internal trade, as applied in the construction of roads, bridges, aqueducts, canals, river navigation and docks for internal intercourse and exchange, and in the construction of ports, harbors, moles, breakwaters and lighthouses, and in the art of navigation by artificial power for the purposes of commerce, and in the construction and application of machinery, and in the drainage of cities and towns.
Introduction and stage setting

Engineering Canons
Introduction and stage setting

Introduction and stage setting

We reason for a purpose; and from a point of view.

which is based on assumptions; having implications and consequences;

we examine concepts and theories; we draw inferences and conclusions;

We use information; to answer a question or solve a problem;

Elements of Reasoning

Taking thinking apart . . .
Universal Intellectual Standards

Testing the quality of your thinking...

- Clarity
- Accuracy
- Precision
- Relevance
- Depth
- Breadth
- Logic
- Significance
- Fairness

A good start...

What standards might you add for your discipline?
Why is critical reasoning relevant?

FABULOUS only goes so far!

And Dave Holtz says so doesn’t go very far either.
Current requirements

- > 10,000 Syd mandates LCC analysis

- ≤ 10% difference in LCC analysis results mandate alternate pavement type bid preparation
  - Special circumstances
    - Justification
    - Briefing / discussion, not e-mail
  - See guidance
Current requirements

- Develop select alternate pavement type plan sheets (only as few as necessary)

- Develop LCC present-worth factor just prior to bid opening
Issues

- Project development process affects
  - Different organizational perspectives
    - LPA or INDOT – owner
    - FHWA – “mortgage holder”
    - INDOT – “representative agent”

- Least cost of ownership
  - Least cost of development
  - Least cost of construction
  - Least cost of maintenance & operating
Issues

- Project development process affects
  - Different organizational perspectives
    - MY WIFE / taxpayer

WHAT DO YOU THINK ARE HER ISSUES
OKAY, being married to me, let’s move on

REAL QUESTION:
WHAT ARE THE HER/THE TAXPAYERS’ CONCERNS?
Issues

- Project development process affects
  - Better earlier than later
  - Current submissions generally too late in process
    - CAUSES GREAT UNNECESSARY ANGST!
  - LCC analysis separate step from alternate pavement type bid plans preparation
Issues

- Alternate pavement type bidding
  - HMA vs. PCC mobilization
  - HMA vs. PCC construction engineering

- Project complexity and other unique circumstances
  - Design-Build
  - Straight-line vs. complex or non-linear layout
  - Mainline vs. intersections

_________________ - any others?
Issues

- Optional bid vs. alternate bid
- Premature disclosure of LCC PW adjustment factor
- Special or unique organizational practices
  - Practices
  - Competencies
  - Preferences
  - History
- Construction & aggregate source geographic influences
Issues

- P3
  - Variable pavement cross-sections on top of alternate pavement type bidding
  - Variable pavement LCC approaches
    - Low maintenance x-section vs. low initial construction cost x-section
- Noise & environmental considerations
- Pavement analysis-design prequalification
  - Effectiveness of economies of force
    - Time, cost, support, testing, etc.
Future vision and direction

- Not going away
- More precision at lower end of spectrum
  - Syd triggers?
  - Project type triggers?
  - Project engineering purpose & need triggers?
- Earlier LCC assessment automatically presumed in development process
- Appropriate level of analysis complexity
Future vision and direction

- % project awardees vs. non-awardees mandates cost-effective expenditure
- Automated or simplified pavement condition assessments expected
- Premature development of plan not acceptable, i.e., wasted resources
**Current pavement asset management strategic direction**

- Manual engineering condition Assessment
- Windshield survey

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### Pavement Condition Assessment Table

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<th>Pavement Distress</th>
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<th>Comments</th>
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### Pavement Shoulder Conditions

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### Workforce

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### Additional Data

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Questions?