AGENDA

* Alternate Bidding for Pavement Type Selection
* Special Experimental Program, SEP 14
* Work Plan
* Life-Cycle Cost Analysis
Alternate Bidding for Pavement Type Selection

- INDOT proposed using Alternate Bidding as a way to select Pavement Type
- Missouri and Louisiana had been using this process for years
ALTERNATE BIDDING HISTORY AND REQUIREMENTS

* Special Experimental Program, SEP 14

* FHWA considered this contracting process experimental and did not encourage it prior to 2012
WORK PLAN

* Attract more bidders and competition

* Obtain true cost savings over similar conventional bid projects

* Provide a more competitive market
Hot Mix Asphalt (HMA) has a design life of 20 years.
Portland Cement Concrete Pavement (PCCP) has a 30 design life.
Life Cycle Cost Analysis (LCCA) to evaluate these pavement types over a 50 year analysis period.
All Projects will be Designed utilizing Mechanistic-Empirical Pavement Design Guide (MEPDG).
LIFE-CYCLE COST ANALYSIS

- 50 year LCCA Strategy for HMA
- 50 year LCCA Strategy for PCCP
- A Present Worth (PW) Factor is Calculated and Applied a Bid Opening
50 year LCCA Strategy for HMA
  * Preventive Maintenance (PM) Treatment
    Crack Seal at years 3, 6, 9, 12, 15, and 18
  * Rehabilitation at Year 20
    Mill and 2 Layer Overlay (Functional)
  * PM, Crack Seal at years 23, 26, 29, and 32
  * PM, Mill and Fill at Year 35
  * PM, Crack Seal at years 38, 41, 44, and 47
  * LCCA Salvage Value at Year 50 = $ 0
ALTERNATE BIDDING HISTORY AND REQUIREMENTS

* 50 year LCCA Strategy for PCCP
  * Preventive Maintenance (PM) Treatment
    Joint Seal at years 8, 16, and 24
  * Rehabilitation at Year 30
    HMA 2 Layer Overlay (Functional)
  * PM, Crack Seal at years 33, 36, and 39
  * PM, Mill and Fill at Year 42
  * PM, Crack Seal at years 45 and 48
  * LCCA Salvage Value at Year 50 = $0
SUMMARY

* 2009 First project under SEP 14
* 2010 Eleven more projects
* 2011 Fourteen more projects
2009 Project on US-31 Kokomo By-pass

- Eleven (11) bids (6 PCCP and 5 HMA)
- Three (3) contractors participated in both pavement type bids
- MEPDG design provided
  - 10 inches of PCCP and 14 inches of HMA
2009 Project on US-31 Kokomo By-pass

LCCA provided a PW cost factor of

$1,403,938.00 for HMA

$ 870,480.00 for PCCP
ALTERNATE BIDDING HISTORY AND REQUIREMENTS

* 2009 US-31 Project Costs

* PCCP $11,273,863.10 + $870,480.00 = $ 12,144,343.10

* HMA $11,098,853.08 + $1,403,938.00 = $ 12,502,791.08
2009 US-31 Project Costs

- INDOT’s consultant cost of $32,930
- Saved the tax payers approximately $325,518
2009 US-31 Project Primary Reasons Accomplished

- Attract more bidders and competition.
- Obtain true cost savings over similar conventional bid projects.
- Provide a more competitive market
2010 = 11 Projects

* Six (6) on I-69
* Two (2) on US-31 Kokomo By-pass
* One (1) on SR-25 Hoosier Heartland
* One (1) on US-24 Fort to Port
* One (1) on I-70
2010 Projects Primary Reasons Accomplished

- Attract more bidders and competition.
- Obtain true cost savings over similar conventional bid projects.
- Provide a more competitive market
2010 Projects

Cost savings of $9,219,758 At Bidding
## 2010 Projects

<table>
<thead>
<tr>
<th>Number and Type of Bids</th>
<th>Winning Amount  $</th>
<th>Engineer’s Estimate  $</th>
<th>% Below Engineer’s Estimate</th>
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<tr>
<td>19 Conventional</td>
<td>285,295,617</td>
<td>345,413,792</td>
<td>17.4</td>
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<tr>
<td>11 Alternate</td>
<td>422,698,033</td>
<td>574,204,558</td>
<td>26.4</td>
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2010 Projects

Winning bid amounts averaged nine percent (9%) more below engineer’s estimate for the alternate bidding process than the conventional bidding process.
2010 Projects

INDOT saved the tax payers approximately $51,000,000
2011 = 14 Projects

* Five (5) on I-69
* Five (5) on US-31 Kokomo By-pass
* One (1) on SR-25 Hoosier Heartland
* One (1) on SR-11
* One (1) on I-65
* One (1) on Dowling St., Kendallville (first LPA)
2011 Projects Primary Reasons Accomplished

* Attract more bidders and competition.

* Obtain true cost savings over similar conventional bid projects.

* Provide a more competitive market
**2011 Projects**

<table>
<thead>
<tr>
<th>Number and Type of Bids</th>
<th>Winning Amount $</th>
<th>Engineer’s Estimate $</th>
<th>% Below Engineer’s Estimate</th>
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</thead>
<tbody>
<tr>
<td>28 Conventional</td>
<td>346,312,239</td>
<td>409,119,925</td>
<td>15.4</td>
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<td>14 Alternate</td>
<td>396,652,688</td>
<td>502,582,279</td>
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</tbody>
</table>
2011 Projects

* Winning bid amounts averaged 5.7% more below engineer’s estimate for the alternate bidding process than the conventional bidding process.

* 3.3% less in 2011 compare to 2010
2011 Projects

- INDOT saved $3,800,000 immediately at the bid openings
- INDOT saved approximately $10,000,000 over the 50 year service life
- INDOT saved the taxpayers approximately $28,600,000, 5.7% under engineer’s estimate
- INDOT saved the taxpayers a total of $42,400,000
QUESTIONS?