Indiana Project Bundling
Lessons Learned

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Indiana Department of Transportation
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Highlights

- Independent Bundling Studies Conducted
  - Purdue and KPMG
- Bundling Criteria
  - Opportunities for success
- Lessons Learned
  - Exploring what worked and more importantly...what didn’t work
Key Bundling Criteria

• What worked?
  • Best bundling opportunities were found by looking at 3 key criteria
    • Corridors
    • Geographic Location
    • Work Types
Corridor Bundles

• What to Consider...
  • Multiple work types on
    • Interstate or high volume multi-lane routes
    OR
    • City or single highway
  • Similar Maintenance of Traffic (MOT)
  • Construction time
  • Do Not mix interstate with non-interstate
Geographic Bundles

• What to consider....
  • 15-20 mile radius appears to be most efficient
  • Look beyond district boundaries
  • Union vs. non-union areas
  • Plant locations
  • Concurrent versus consecutive work
  • Contractors’ capacity per season
Work Type Bundles

• What to Consider…
  • Bridge Bundles
    • Historic Bridge projects should stand alone
    • Specialty Equipment
      • Flexible/Thin (Polymeric) Overlays with like project types
    • Paint Projects should be bundled with like project types
      • Exception: when complex MOT (e.g. narrow truss bridge with single lane signalized MOT.)
      • Exception: when painting will be required as part of a larger project
    • Large culvert/small structures/ 3 sided structures
      • typically different that traditional bridge contracts
      • Exception: Bundling small structure, bridges and road projects into a corridor contract has benefits to coordination, mobilization and MOT.
Work Type Bundles Continued...

- **Road Bundles**
  - Unless within a corridor, road bundles have not been more cost effective or beneficial
  - Look for MOT conflicts
  - Timing and construction completion dates
  - Make sure you have a lead contractor
Examples of Successful Bundles

• I-74 mixed bridge rehab work types along a Corridor
  • 11 Des #s
  • Engineers Estimate - $2,540,301
  • Award - $2,081,968
    • 18% savings

• I-74 mixed bridge work types along a Corridor
  • 10 Des #s
  • Engineers Estimate - $17,443,874
  • Award - $14,659,979
    • 16% savings

• SR 63 Small Structure Pipe Linings
  • 6 Des #s
  • Engineers Estimate - $1,251,800
  • Award - $1,097,163
    • 8% savings

• US 50 Bridge Rehabilitation Corridor
  • 23 Des #s, primarily thin deck overlays with 2 joint repairs
  • Engineers Estimate - $2,286,205
  • Award - $1,667,760
    • 27% savings

• US 31 Road Resurfacing and Deck Overlays
  • 3 Des #s
  • Engineers Estimate - $4,396,942
  • Award - $3,657,475
    • 17% savings
<table>
<thead>
<tr>
<th>Contract</th>
<th>INDOT Contract No.</th>
<th>Low Bid for A+B+C</th>
<th>Low Bid for D</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>IR-29767</td>
<td>$54,534,628.00</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>IR-29411</td>
<td>$29,217,404.00</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>IR-30411</td>
<td>$53,127,426.00</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>IR-31230</td>
<td></td>
<td>$128,398,508.00</td>
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<tr>
<td>Total</td>
<td></td>
<td>$136,879,458.00</td>
<td>$128,398,508.00</td>
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</table>
Successful Bundles Continued..

- A: IR-29767; $54,534,628.41
- B: IR-30411; $53,127,425.58
- C: IR-29411; $29,217,404.00

Total A + B + C = $136,879,457.99

D: IR-31230; $128,398,507.78

Successful Contract
### Scenario Analysis for Past Bundled Contracts

- 3 past bundled contracts (with 19 projects)
- Original overall cost = $19,082,148 (observed)
- Estimated using the cost model = $16,327,768

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Nr of Projects</th>
<th>Est. Nr. of Bids</th>
<th>Estimate of Project Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All Projects Unbundled as Separate Contracts</td>
<td>19</td>
<td>13 each</td>
<td>$20,117,716</td>
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<tr>
<td>2. Four Contracts, Bundled Randomly</td>
<td>3+3+6+6</td>
<td>9+9+7+7</td>
<td>$17,177,400</td>
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<tr>
<td>3. Four Contracts, Bundled by Project Similarity</td>
<td>3+3+7+6</td>
<td>9+9+6+7</td>
<td>$15,061,743</td>
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<tr>
<td>4. Three Contracts, Bundled Randomly</td>
<td>6+7+6</td>
<td>7+6+7</td>
<td>$15,193,676</td>
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<tr>
<td>5. Three Contracts, Bundled by Project Similarity</td>
<td>6+7+6</td>
<td>7+6+7</td>
<td>$14,481,562</td>
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<tr>
<td>6. Two Contracts, Bundled Randomly (unbalanced)</td>
<td>6+13</td>
<td>7+4</td>
<td>$14,985,185</td>
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<td>7. Two Contracts, Bundled Randomly (balanced)</td>
<td>10+9</td>
<td>5+5</td>
<td>$14,195,652</td>
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<td>8. Two Contracts, Bundled by Project Similarity</td>
<td>6+13</td>
<td>7+4</td>
<td>$13,041,827</td>
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<tr>
<td>9. Bundle All Projects into One Contract</td>
<td>19</td>
<td>2</td>
<td>$13,677,940</td>
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</table>
Factors Affecting Project Cost

Three Main Factors
- Economies of Scale
- # of projects bundled
- # of Bidders

Other Factors
- Project similarity/compatibility
- Road Class and AADT
- Time and season when let
- Project location and Geographic Proximity
Key Lessons Learned

• Don’t mix interstate and non-interstate
• Have a lead contractor
  • DO NOT have a specialty contractor lead
• Watch MOT work types
  • Cost us on a road/bridge interstate project
• Watch plant locations and number of plants
• Distance and travel times for material/staff
I've seen these protest signs for years. I don't think they are working.