Accelerated Bridge Construction

AASHTO Spring Meeting

Presented by
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UDOT Director of Project Development
Two Ideas

- Precast elements – cost less
- SPMTs – Help and expertise available
Accelerated Bridge Construction

- Build “elements” off-site
- Transport and install rapidly
- Decrease construction time
- Minimize impacts
- Improve work zone safety
- Increase quality product
Family of ABC

- Precast Elements
  - Deck Panels
  - Precast Footings/Caps
  - Post-Tension Girders/Columns/Bents

- prefab Sections
  - Pivoting
  - Launching

- prefab Bridges
  - Skidding
  - SPMT
  - Heavy Lift Cranes
  - Strand Jacks

Innovative Contracting
Advantages of Precast Elements

- Speed of construction
- Quality
- Cost
Examples of Cost Advantages

- Precast girders
- Texas precast u-beam
  - Most efficient ABC element in Texas
  - Lowest average unit cost
- Utah precast decks
Innovative Technology

Innovative Methods Learning Curve

Dollars

Number of Times Implemented

Traditional Method

Innovative Methods Learning Curve
Utah Precast Deck Panel Projects

Bid Cost per Square Foot

- I-15 at Parrish Lane
- I-80 Silver Creek Canyon
- I-84 Weber Canyon
- I-80 Kimbal Jct
- MP200

Dates:
- 18-Jan-07
- 09-Mar-07
- 28-Apr-07
- 17-Jun-07
- 06-Aug-07
- 25-Sep-07
- 14-Nov-07
- 03-Jan-08
- 22-Feb-08
- 12-Apr-08
- 01-Jun-08
Utah Efforts with Precast Elements

- Developing Standards
  - National help
  - FHWA help
  - AASHTO help
Advantages of SPMTs

- Reduces impacts from months to hours
- Increases work zone safety, worker safety
- Increases quality
AASHTO TIG Product

- Lead States Team (LST)
- Website – www.aashtotig.org
- On-site briefing
- Manuals
- Technical help and expertise
### SPMT Cost/Benefit

<table>
<thead>
<tr>
<th>Project</th>
<th>Closure/Impact</th>
<th>Project Cost</th>
<th>User Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida, Graves Avenue Remove</td>
<td>4 night lane closure</td>
<td>$570k</td>
<td>$2.2M</td>
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<tr>
<td>and replace</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utah, I-215 at 4500 South</td>
<td>53 hours</td>
<td>$800k</td>
<td>$4M</td>
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<td>Remove and replace</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Louisiana, I-10 &amp; LA 35 Remove</td>
<td>10 hours</td>
<td>$130k</td>
<td>?</td>
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<tr>
<td>and replace</td>
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</table>
Stakeholders' OVERALL Satisfaction With Project Results
(1=not satisfied, 7=very satisfied)

- 7: 76.10%
- 6: 18.30%
- 5: 7.80%
- 4: 1.40%
- 3: 1.40%
- 2: 0.00%
- 1: 0.00%
In closing

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