Performance Contracting for Construction
M-115, Clare County Michigan

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Michigan Department of Transportation
(MDOT)
Michigan DOT M-115
Highways for Life Performance-Based Contract

• 5.5 mile, rural, two-lane road and bridge reconstruction

• Best-value contract award

• Formula for evaluating price and non-price factors
Performance-Based Specifications for Six Projects Goals

1. Open to Traffic
2. Construction & Cleanup Completion
3. Pavement Performance
4. Worker Safety During Construction
5. Work Zone Crashes
6. Motorist Delay
Goal #1: Open to Traffic (0-20 points)

- Set November 3, 2008
- Incentive/Disincentive = $7,000/calendar day
- Maximum Incentive = $98,000 (14 calendar days)
- Maximum Disincentive = Unlimited
Goal #2: Construction and Cleanup Completion (0-5 points)

• All construction and cleanup within 15 days of Open to Traffic Date

• Incentive/Disincentive: $2,650/calendar day

• Maximum Incentive = $37,100

• Maximum Disincentive = Unlimited
Goal #3: Pavement Performance (0-50 points)

- Performance Warranty of at least five years

- Ride Quality Index of 30 (IRI 56) or less (no grinding of final top course)
Goal #4: Worker Safety During Construction (0-5 points)

- Worker injury rate (total recordable case rate) less than the rate of 4.0 based on the OSHA 300 rate is the goal for this project.

- $5,000 incentive / disincentive available for rates $\geq$ OSHA 300 – 4.0 rate
Goal #5: Reduced Work Zone Crashes
(0-10 points)

• Maintain the total pre-construction crash rate of no more then 1.0 crash per month

• Incentive = $20,000 if equal to or less than 1.0 crash per month

• Disincentive = $5,000 if equal to or more than 2.0 crashes per month
Goal #6: Motorist Delay (0-30 points)

- No vehicle shall be delayed more than 10 minutes beyond its normal travel time.
- Maximum Incentive = $50,000
- Overall Bonus Incentive = $50,000
- Maximum Disincentive = > 20 minutes – shut down contractor
Innovation (0-30 points)

• Contractor proposed innovations:
  – Fully open roadway on historic peak travel
  – Self-adjusting temporary traffic signals at the two bridges
  – Designate alternate routes
  – 24 Hour Roadside Assistant
# Best-value determination

<table>
<thead>
<tr>
<th>Contractor Name</th>
<th>Contractor Score</th>
<th>Cost Multiplier</th>
<th>Contractor Bid</th>
<th>Best Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rieth-Riley Construction Company, Inc.</td>
<td>111</td>
<td>0.8520</td>
<td>$5,755,413.00</td>
<td>$4,903,611.87</td>
</tr>
<tr>
<td>Central Asphalt, Inc. (Awarded)</td>
<td>80</td>
<td>0.8933</td>
<td>$4,477,777.77</td>
<td>$3,999,998.88</td>
</tr>
<tr>
<td>Pyramid Paving and Contracting Company, Inc.</td>
<td>62</td>
<td>0.9173</td>
<td>$4,190,777.00</td>
<td>$3,844,199.74</td>
</tr>
<tr>
<td>(Unable to secure a single term, six-year warranty)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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MDOT’s Successes:

• Highways for LIFE (HfL) Awarded $1,000,000 to MDOT

• Incentive/Disincentive ($) Available to Contractor

• Gain Contractor’s Innovations
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**MDOT’s Successes - Continued**

- Achieving the Established Goals
  - Open to Traffic - 20 days early
  - Cleanup - 14 days early
  - Ride Quality - under RQI under 30
  - Worker Safety (no workers injured)
  - Work Zone Crashes - only two (animal)
  - Measured Delays - 54 (one over 10 minutes - average delay 2 minutes, 16 seconds)
Central Asphalt’s Successes:

• Temporary Lanes to Reduce Delays and Crashes

• Bridge Construction Utilizing Hy-Span Type Design

• Pavement Design (rubblizing existing pavement)
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Central Asphalt’s Successes - Continued

• Fully Open Roadway

• Alternate Traffic Routes

• Use of Polymer Modified Asphalt Cement in Top Course Pavement

• 24-Hour Traffic Assistance
MDOT’s Challenges:

• Setting up Goals that are **SMART**:
  – *Specific*
  – *Measurable*
  – *Achievable*
  – *Result-oriented*
  – *Timely*

• Setting up Stakeholder Groups & Meetings
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MDOT’s Challenges – Continued

• Stakeholder’s Agreeing

• Financing

• All New Process

• Contractor Selection/Team Scoring
MDOT’s Challenges – Continued

- Award (Pavement Warranty Bonding)
- Letting go of Control
- Incorporating Other Contractor’s Innovations
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Central Asphalt’s Challenges:
• Risk of Performance Warranty

• Weigh Cost Of Innovations

• Lack of Provisions to Accommodate Change

• Meet Performance Goals Specified
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MDOT & Central Asphalt’s Lessons Learned

• Pavement Warranty

• Innovations in Violation

• Test Project Requirements/Goal
MDOT & Central Asphalt’s Lessons Learned – Continued

- Inaccurate Existing Bridge Plan
- Provisions to Accommodate Site Changes
Hy-Span Bridge Design
Hy-Span Bridge Design
Hy-Span Bridge Design
Hy-Span Bridge Design
Self-Adjusting Temporary Traffic Signals
Rubblizing Existing Pavement
Material Transfer System
Shoulder and Centerline Corrugations
Stream Re-alignment
Thank You