Value Based Decision Making:
The New I-65 Interchange
at Worthsville Road

Presented by
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I-65 Interchange at Worthsville
PROJECT HISTORY
Distance from Greenwood to Indianapolis: 5 miles
Development Patterns
Development Patterns
ALTERNATIVES ANALYSIS
Importance of Scope

Potential Value of Value Engineering Applications

- Savings
- Cost

- Savings From Value Engineering
  - Gain
  - Loss

- Time When Value Engineering Is Performed

- Planning & Analysis
- Schematic Design
- Design Development
- Work Drawings
- Construction Documents
- Construction
- Operation & Maintenance
1. Parclos A4
2. Parclos A2
3. Diverging Diamond
Traffic Analysis

<table>
<thead>
<tr>
<th>Traffic Operations</th>
<th>1</th>
<th>2a</th>
<th>2b</th>
<th>3</th>
<th>4</th>
<th>5a</th>
<th>5b</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduces Congestion at Existing Interchanges</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Interchange Operations (veh-hr delay / LOS)</td>
<td>N/A</td>
<td>26 / B</td>
<td>26 / B</td>
<td>24 / B</td>
<td>29 / B</td>
<td>29 / B</td>
<td>23 / B</td>
<td>24 / B</td>
<td>23 / B</td>
<td>27 / B</td>
<td>19 / B</td>
<td></td>
</tr>
<tr>
<td>Accommodate higher demands (45% increase)</td>
<td>N/A</td>
<td>78 / D</td>
<td>89 / F</td>
<td>87 / D</td>
<td>67 / D</td>
<td>67 / D</td>
<td>68 / C</td>
<td>75 / D</td>
<td>74 / C</td>
<td>51 / C</td>
<td>74 / C</td>
<td></td>
</tr>
<tr>
<td>Accommodate Varied Growth Pattern</td>
<td>N/A</td>
<td>276 / F</td>
<td>150 / F</td>
<td>320 / F</td>
<td>65 / C</td>
<td>79 / C</td>
<td>145 / F</td>
<td>75 / C</td>
<td>340 / F</td>
<td>246 / F</td>
<td>248 / F</td>
<td>79 / C</td>
</tr>
<tr>
<td>Expandable for all scenarios</td>
<td>N/A</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>N/A</td>
<td>N/A</td>
<td>NO</td>
<td>N/A</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Interchange Configuration Evaluation Matrix**

- **No Action**
- **Diamond (Signals)**
- **Diamond (R/A)**
- **Tight Diamond**
- **SPUI**
- **Parclo A-2 (Signals)**
- **Parclo A-2 (R/A)**
- **Parclo A-4**
- **Parclo B-2**
- **Parclo AB-2 North**
- **Parclo AB-2 South**
- **DDI**
What Are the Technical Findings?

- **Improve** operations of Main Street interchange by reducing traffic by 30%

- **Improve** travel speeds and Level of Service on I-65

- **Reduce** expected crashes on I-65 and surface streets in the area

- **Operate** at reasonably free flow with forecasted traffic demands
PRACTICAL DESIGN SAVINGS
Relocated Graham Road

- Eliminated 1 Relocation
- Reduced Construction Limits
- Reduced R/W Acquisition

Cost Savings $350,000
New Paradigm: Designing around utilities

Partnerships with Utility Companies

Reduced relocation time and cost

Programmatic savings
TOTAL PROJECT SAVINGS
## Savings Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>Savings</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Cost</td>
<td>$2,564,000</td>
<td>15%</td>
</tr>
<tr>
<td>Railroad &amp; Utility Adjustment Cost</td>
<td>$990,507</td>
<td>20%</td>
</tr>
<tr>
<td>Land Acquisition Cost</td>
<td>$238,848</td>
<td>8%</td>
</tr>
<tr>
<td>Engineering Cost</td>
<td>$530,655</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Total Project Savings</strong></td>
<td><strong>$4.3 M</strong></td>
<td></td>
</tr>
</tbody>
</table>
QUESTIONS?

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