Driving Indiana's Economic Growth

2007 PURDUE ROAD SCHOOL

DATA DRIVEN DECISIONS

BY: Dave Andrewski
WHAT IS A DATA DRIVEN DECISION?
Comparing Red Car and Blue Car:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Red Car</th>
<th>Blue Car</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>12,000</td>
<td>34,000</td>
</tr>
<tr>
<td>MPG</td>
<td>35</td>
<td>13</td>
</tr>
<tr>
<td>0 - 60</td>
<td>6.6</td>
<td>4.2 sec</td>
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<tr>
<td>Warranty</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Capacity</td>
<td>5</td>
<td>2</td>
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</tbody>
</table>
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VEHICLES DATA

VEHICLE S

DA DATA CRUNCHER MODEL

New Car

Pavement Design Data

- Foundation (CBR)
- Traffic
  - ADT
  - % Trucks
  - Traffic Speed
- Climate
- Subgrade Treatment
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Pavement Design Tool Box

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Limit Costs  Discount Rates
PERFORMANCE STRATEGY  LCCA Analysis
Black vs White

End Product
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Major Pavement Preservation Program
- $2.6 Billion 10 yr Construction Program
  - Interstate
  - Non-Interstate
- Needs Exceed the Dollars Available
- Requires Data Driven Decisions and Visual Inspections

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- Fatigue Cracking
- Thermal Cracking
- Rut Depth
- Longitudinal Cracking
- IRI
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#### PAVEMENT MANAGEMENT DATA

<table>
<thead>
<tr>
<th></th>
<th>Asphalt</th>
<th>Concrete</th>
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</thead>
<tbody>
<tr>
<td>IRI</td>
<td>IRI</td>
<td>IRI</td>
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<tr>
<td>Cracking</td>
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<td>Cracking</td>
</tr>
<tr>
<td>Rut</td>
<td></td>
<td>Faulting</td>
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<tr>
<td>Surface Friction</td>
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<td>Surface Friction</td>
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</tbody>
</table>

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#### PROJECT TYPE

- Replacement
- Reconstruction
- Rehabilitation
- Resurface
  - PM – 3R
  - Functional – 4R
Prior to Re-engineering
- Design to Standards
- Add up the Dollars

Post Re-engineering
- Design to Dollars
- Redesign to Dollars
- Find Dollars
 Prior to Re-engineering
  • $ First Come First Serve
  • Unfunded Projects Moved Out
 Post Re-engineering
  • On Time
  • On Budget

DATA DRIVEN DECISIONS

<table>
<thead>
<tr>
<th>Good Data + Bad Model</th>
<th>Good Data + Good Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad Decision</td>
<td>Good Decision</td>
</tr>
<tr>
<td>Bad Data + Bad Model</td>
<td>Bad Data + Good Model</td>
</tr>
<tr>
<td>Bad/Good Decision</td>
<td>Bad Decision</td>
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</tbody>
</table>
DATA DRIVEN DECISIONS

- Check the Data
- Calibrate the Model
- Perform a Reality Check
- Life is Good - Enjoy

THANK YOU