Kentucky SHIFTS Toward the Future
Project Programming

- Commission
- DOT
- Legislative final approval
State Funding in Current Highway Plan (in Millions)

$7,165

Listed: $690

Anticipated Funds Available
SHIFT Kentucky Ahead

- Strategic
- Highway
- Investment
- Formula for Tomorrow
Key Elements of SHIFT

- Data Driven
- Objective
- Transparent
- Collaborative
- Dependable
Top Priorities

- Improve Safety
- Preserve Existing Infrastructure
- Reduce Congestion
- Fuel Economic Growth
- Spend Tax Dollars Wisely
Evolution of Approach

- Purpose and Need
- Sensitivity to Environment

Context Sensitive Solutions

- Right Size Project
- Understand B/C

Practical Solutions

- Affordable Improvements
- More Projects System-wide

Flexible Design
Flexible Design

How Do we...

- Optimize system performance
- Weigh projects vs. system
- Identify innovative solutions
- Maximize investment
Experts... I think NOT

• Implementation still early
• Identifying opportunities
• Success stories
Letcher County, US 119
Whitesburg to Jenkins
Section 1
May 2016 Scoping Study
With Data Driven Analysis of Existing Conditions

### Summary of Existing Conditions

<table>
<thead>
<tr>
<th>Letcher County Section</th>
<th>US 119 Section 1</th>
<th>US 119 Section 2</th>
<th>US 119 Section 3</th>
<th>US 119 Section 4</th>
<th>US 119 Section 5</th>
<th>US 23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mile Point</td>
<td>17.005 to 18.629</td>
<td>18.629 to 19.929</td>
<td>19.929 to 23.788</td>
<td>23.788 to 25.122</td>
<td>25.122 to 27.922</td>
<td>0.600 to 1.300</td>
</tr>
<tr>
<td>Length</td>
<td>1.82 mile</td>
<td>1.10 mile</td>
<td>3.86 mile</td>
<td>1.35 mile</td>
<td>2.80 mile</td>
<td>0.8 mile</td>
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<tr>
<td>Description</td>
<td>KY 15 to Brass Drive</td>
<td>Brass Drive to North of KY 1892</td>
<td>KY 1892 to Bill Moore Branch Road</td>
<td>Bill Moore Branch Road to Talman Drive</td>
<td>Talman Drive to US 23</td>
<td>Intersection with US 119</td>
</tr>
<tr>
<td>Lane Width</td>
<td>12'</td>
<td>12'</td>
<td>12'</td>
<td>12'</td>
<td>12'</td>
<td>12'</td>
</tr>
<tr>
<td>No. of lanes</td>
<td>2</td>
<td>4</td>
<td>2, 3, 2</td>
<td>4</td>
<td>3, 2</td>
<td>4</td>
</tr>
<tr>
<td>Shoulder Width</td>
<td>11'</td>
<td>12'</td>
<td>4, 6'</td>
<td>12'</td>
<td>2, 6'</td>
<td>10</td>
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<tr>
<td>2016 ADT</td>
<td>6500 to 11200</td>
<td>11200 to 12000</td>
<td>9000 to 10000</td>
<td>8500</td>
<td>8000 to 8600</td>
<td>6000 to 9050</td>
</tr>
<tr>
<td>LOS 2015</td>
<td>D, E</td>
<td>A</td>
<td>D, C</td>
<td>A</td>
<td>B, C</td>
<td>A</td>
</tr>
<tr>
<td>2040 ADT</td>
<td>10600 to 12000</td>
<td>12000 to 10000</td>
<td>10000 to 7400</td>
<td>7400</td>
<td>7000 to 8300</td>
<td>6900 to 10400</td>
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<tr>
<td>LOS 2040</td>
<td>D, E</td>
<td>A</td>
<td>C, D</td>
<td>A</td>
<td>B, C</td>
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<tr>
<td>Horizontal</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Vertical</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<td>Lane Transitions</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>Left Turn Lane Tapers</td>
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<td>7</td>
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<tr>
<td>Shoulder</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
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<tr>
<td>Crashes</td>
<td>83</td>
<td>11</td>
<td>62</td>
<td>5</td>
<td>41</td>
<td>12</td>
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<td>Crash Rate</td>
<td>230</td>
<td>51</td>
<td>59</td>
<td>34</td>
<td>134</td>
<td>137</td>
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<tr>
<td>Injury</td>
<td>38</td>
<td>4</td>
<td>23</td>
<td>2</td>
<td>15</td>
<td>3</td>
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<tr>
<td>Injury Rate</td>
<td>103</td>
<td>19</td>
<td>36</td>
<td>14</td>
<td>49</td>
<td>34</td>
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<tr>
<td>Fatality</td>
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<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<td>Fatality Rate</td>
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<td>0</td>
<td>4.6</td>
<td>0</td>
<td>0</td>
<td>11.4</td>
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<td>KTC 2015 Study: Principal Arterial Crash Rates</td>
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* Entire Section
## Performance Based Solution

<table>
<thead>
<tr>
<th>Section</th>
<th>3-Lane</th>
<th>Vs</th>
<th>4-Lane</th>
<th>Vs</th>
<th>Performance Solution</th>
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<tr>
<td>1</td>
<td>$23.3</td>
<td>86%</td>
<td>$27.2</td>
<td>35%</td>
<td>$9.5</td>
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<tr>
<td>2</td>
<td>None</td>
<td>Existing 4-Lane</td>
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<tr>
<td>3</td>
<td>$25.1</td>
<td>66%</td>
<td>$37.8</td>
<td>12%</td>
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<tr>
<td>4</td>
<td>None</td>
<td>Existing 4-Lane</td>
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<td></td>
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<tr>
<td>5</td>
<td>$20.6</td>
<td>60%</td>
<td>$34.6</td>
<td>59%</td>
<td>$20.5</td>
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<tr>
<td>TOTALS</td>
<td>$69</td>
<td>69%</td>
<td>$99.6</td>
<td>35%</td>
<td>$34.5</td>
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</tbody>
</table>
FLEXible NEPA

• US 119 Letcher County
  • Rescoping of environmental work
  • Much corridor level work useful
  • High level CE (CE3)
  • Reduction in footprint
• 2018 incl. $27M construction funds for two sections.
Purpose

• Provide increased safety along the corridor by increasing sight distances and correcting geometric deficiencies

• Improve system connectivity and efficiency by providing a more reliable, high-quality roadway for commercial and passenger vehicle access to the corridor

• Provide an improved north-south route for emergency and medical services

• Support economic development along the corridor by increasing regional industrial accessibility to markets and suppliers
Needs

• Geometry and Traffic Safety-posted speeds 25-55 MPH, 77 crashes with critical rate factors of 2.5 and 3.2 in two respective segments

• System Connectivity & Efficiency-improve connectivity to Mountain Parkway to the north.

• Emergency Response-congestion, poor sight distances, and lack of adequate shoulders, lack of passing opportunities hinder movement

• Economic Development-Owsley County is among the 20 poorest counties in the country.
Original Design of Various Entrances
FLEXible NEPA

• KY 11 Owsley/Lee Counties
  • State-funded w/ Corps permits
  • Greatly reduced impact footprint
  • Significant reductions in stream impacts (ILF savings)
  • Reduction in bat impacts
SUMMARY

• By using our data driven analysis, SHIFT, and PBFS that meet the basic needs for our projects using a bottom up design, the savings provides opportunity for more “good” projects to be constructed sooner.