Development of Bowling Green’s First Roundabout

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Joe Plunk, P.E., District 3 Project Development Branch Mgr

Sept. 9, 2014
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Outline

1. Existing Conditions
2. Pre-design Project History
3. Benefits of Roundabouts
4. Development of Design Project
5. Getting the Project to Letting
Benefits of Roundabouts

1. Conflict points are reduced
2. Geometrics encourage speed reduction
3. Lower operating speeds reduce crash severity
4. Continuous flow reduces delay
5. Reduced fuel consumption (noise & air quality impacts)
6. Operation/maintenance costs can be less than signalized
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The purpose of this project is to improve safety and mobility for motorists, bicyclists, and pedestrians along US 31W through the intersections with University Boulevard/Loving Way and with Chestnut Street.
1. Design Traffic Forecasts Exceeded Road Capacity
Unique Project Challenges

2. Profile grade and cross slopes into intersection

US 31W ~ 4% profile grade
Chestnut St. ~ 5% profile grade
US 31W horizontal curve creates superelevated pavement slopes
Unique Project Challenges
3. Designing and Building the Roundabout to KYTC Design Memo 03-10

Figure 6: Splitter Island Offset Dimensions
Unique Project Challenges
4. Keeping Utilities Out of Sight Triangles
Unique Project Challenges

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Unique Project Challenges

4. Lighting the Roundabout
Roundabout Construction
Roundabout Construction
Roundabout Construction
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Utility Coordination

• KYTC acquired utility easements
• KYTC paid 100% for private if dates met

• 7 utilities
• BGMU 69 kV trans. line
• AT&T duct bank