Topic of Discussion

Existing

Proposed
Where is Blue Ash, OH?
Blue Ash

- 8 Sq Miles
- Population
  - 12,000 (nighttime)
  - 40,000 (daytime)
- Major Employment Center
- Commuter routes
- Redevelopment of Airport & nearby parcels
Project Area

Plainfield Road
• 4-Lane, Minor Arterial
• AADT = 28,600
• % Trucks = 2%

Hunt Rd
• 4-Lane, Minor Arterial
• AADT = 15,700
• % Trucks = 2%

SR 126
• 4-Lane, Freeway
• AADT = 48,500
• % Trucks = 3%
12th largest intersection crash rate in OH
Congestion

Typical Southbound Queue in PM Peak

Peppermill Lane Intersection
Congestion

- EB exit ramp frequently queues onto mainline SR 126
- SB queues of a ½ mile or more are common
2007 Corridor Study

- Recommendations
  - Add 1 southbound lane
  - Widen bridge over SR 126
  - Add new roadways

- City’s Stance:
  - Not in favor of widening
  - Explore roundabouts
Initial Concept

• 5 Roundabouts
  – All interchange ramps
  – Hunt Road
  – Crossgate Lane / Target

• 2 Signals
  – Georgetown Road
  – Peppermill Lane
Recent Studies

- Crash Analysis
- Traffic Study
- Safety Study with RSA
- Feasibility Study
- Interchange Operations Study (IOS)
Crash Patterns

<table>
<thead>
<tr>
<th># of Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>1-5</td>
</tr>
<tr>
<td>6-10</td>
</tr>
<tr>
<td>10-15</td>
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<tr>
<td>&gt;15</td>
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</table>

SR 126 EB Exit

SR 126 EB Entrance

Peppermill Ln

Georgetown Rd

Hunt Rd

Plainfield Rd
Crash Patterns

# of Crashes
- 0
- 1-5
- 6-10
- 10-15
- >15
Crash Patterns

- Reed Hartman Hwy
- Plainfield Rd
- Peppermill Lane
- Plainfield Rd

# of Crashes
- 0
- 1-5
- 6-10
- 10-15
- >15
Road Safety Audit

- Goals
  1. ID Safety Concerns
  2. ID Potential Counter Measures
- Diverse team
- Field Review
- Analysis of Potential Countermeasures
- Report Back to Team
- Finalize Recommendations

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
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</thead>
<tbody>
<tr>
<td>Frank Aransky</td>
<td>American Structurepoint, Inc.</td>
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<tr>
<td>Ryan Huebschman</td>
<td>American Structurepoint, Inc.</td>
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<tr>
<td>Bryan Becker</td>
<td>Michelman, Inc.</td>
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<td>Michael Miller</td>
<td>Sycamore Community Schools</td>
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<tr>
<td>Pete Gemmer</td>
<td>UC Blue Ash</td>
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<tr>
<td>Lt. Steve Schueler</td>
<td>Blue Ash Police Department</td>
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<tr>
<td>Fire Chief Rick Brown</td>
<td>Blue Ash Fire Department</td>
</tr>
<tr>
<td>Tommy Arnold</td>
<td>ODOT District 8</td>
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</table>

Radius too small for trucks turning right
Roundabouts

Largest potential for crash reductions
Level of Service

AM Existing

AM Proposed

Legend
- Green: LOS A, B
- Yellow: LOS C, D
- Red: LOS E, F

Peppermill Ln, N

Georgetown Rd

Hunt Rd

SR 126 EB

Crossgate Ln

Larchview Dr
Level of Service

PM Existing

PM Proposed

Legend
- LOS A, B
- LOS C, D
- LOS E, F
Queues

Roundabouts address queuing issue on EB exit ramp

Roundabouts generally produce shorter queues than signals

Roundabouts address SB queuing issue
Eastbound Exit Ramp

**Existing Conditions**

EB exit ramp queues onto mainline SR 126 today

<table>
<thead>
<tr>
<th>Peak Hour</th>
<th>NB</th>
<th>SB</th>
<th>EB</th>
<th>Overall</th>
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</thead>
<tbody>
<tr>
<td>AM</td>
<td>LOS D (35.8)</td>
<td>LOS C (33.7)</td>
<td>LOS D (58.3)</td>
<td>LOS D (42.9)</td>
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<tr>
<td>PM</td>
<td>LOS C (23.4)</td>
<td>LOS A (6.5)</td>
<td>LOS D (46.6)</td>
<td>LOS C (21.3)</td>
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</table>

**Scenario 3**

Roundabout keeps queues on ramp

<table>
<thead>
<tr>
<th>Peak Hour</th>
<th>NB</th>
<th>SB</th>
<th>EB</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM</td>
<td>LOS C (24.0)</td>
<td>LOS A (2.5)</td>
<td>LOS C (26.5)</td>
<td>LOS B (17.9)</td>
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<tr>
<td>PM</td>
<td>LOS B (11.2)</td>
<td>LOS A (2.9)</td>
<td>LOS E (61.6)</td>
<td>LOS C (20.0)</td>
</tr>
</tbody>
</table>

Figure 3.8
Plainfield Road & SR 126 Intersection Comparison
Feasibility Study

- Conceptual Design
- ROW Needs
- Construction Costs
Final Concept

- Roundabouts
  - Peppermill Ln
  - Hunt Rd
  - SR 126 EB Ramps
- No improvements
  - Georgetown Rd
  - SR 126 WB Ramp
  - Crossgate Ln / Target
## Project Costs

<table>
<thead>
<tr>
<th>Intersection</th>
<th>PE - Detailed Design Cost</th>
<th>Right of Way / Utilities Cost</th>
<th>Construction Cost</th>
<th>Construction Inspection Cost</th>
<th>Project Cost</th>
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<tbody>
<tr>
<td>Peppermill Lane</td>
<td>$437,600</td>
<td>$72,400</td>
<td>$2,844,900</td>
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<td>Hunt Road</td>
<td>$848,400</td>
<td>$1,704,000</td>
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<td>$6,899,700</td>
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<td>SR 126</td>
<td>$375,600</td>
<td>$101,200</td>
<td>$2,402,900</td>
<td>$240,300</td>
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<td>Totals</td>
<td>$1,661,600</td>
<td>$1,877,600</td>
<td>$9,199,900</td>
<td>$920,000</td>
<td>$13,659,100</td>
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Cost Comparison

Widening:
- $1,500,000
- $2,000,000
- $2,500,000
- $15,000,000

Roundabouts:
- $920,000
- $1,877,600
- $1,611,600
- $9,199,900

Total:
- $21.0 M
- $13.7 M

Legend:
- PE-Environmental
- Final Design
- ROW
- Construction
- Construction Inspection
# Project Funding

<table>
<thead>
<tr>
<th>Source</th>
<th>Phase</th>
<th>Amount</th>
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<tr>
<td>CMAQ</td>
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<tr>
<td>HSIP</td>
<td>Construction</td>
<td>$5.9 M</td>
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<tr>
<td>STP</td>
<td>ROW</td>
<td>$2.0 M</td>
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<tr>
<td>Local</td>
<td>All</td>
<td>$1.8 M</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>All</strong></td>
<td><strong>$13.7 M</strong></td>
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$11.9 M in Federal Funding
Timeline

- 2007: Study Recommends Widening
- 2008: Funding Applications
- 2009: Safety Study
- 2010: Feasibility Study
- 2011: IOS
- 2012: Traffic Study
- 2013: Design
- 2014: ROW
- 2015: Construction
Closing Comments

- Roundabouts can provide an alternative to widening
- Roundabouts and signals can work together
- Multiple funding sources can be combined on a project
Traffic Simulation
Questions

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