ALL-SHAWNEE ROAD CORRIDOR
CHALLENGES AND SOLUTIONS
PRESENTATION TEAM

• Steve Jewell (DLZ)
• Dan Kaseman (ODOT District 1)
• Brion Rhodes (Allen County Engineer)
PROJECT TEAM

- Allen County Engineer
- DLZ Ohio, Inc.
- Kohli & Kaliher Associates, Inc.
- ODOT District 1
STUDY AREA

- Shawnee Road at Ft. Amanda Road
2003 – Funding to replace structurally deficient bridge

- Shawnee Road and Ft. Amanda Road intersection
  - History of highest crash rates in region
  - Traffic movements LOS E/F
  - 100 feet from bridge
  - Service/mini-mart stations on three corners

2006 – LACRPC assisted in obtaining safety funding
STUDY – PRELIMINARY ENGINEERING

• Safety study
• 99 crashes
• Access management issues

• Existing conditions
• Shawnee Rd – 13,500 veh
• Ft Amanda – 9,500 veh

<table>
<thead>
<tr>
<th>Crash Type</th>
<th>Number of Crashes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intersection</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Rear End</td>
<td>23</td>
<td>58%</td>
</tr>
<tr>
<td>Angle</td>
<td>7</td>
<td>17%</td>
</tr>
<tr>
<td>Left Turn</td>
<td>8</td>
<td>20%</td>
</tr>
<tr>
<td>Loss of Control</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Mid-Block</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>Rear End</td>
<td>44</td>
<td>75%</td>
</tr>
<tr>
<td>Angle</td>
<td>9</td>
<td>15%</td>
</tr>
<tr>
<td>Left Turn</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Head-On</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Sideswipe</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Loss of Control</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>1</td>
<td>2%</td>
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</table>
### STUDY – PRELIMINARY ENGINEERING

<table>
<thead>
<tr>
<th>Alternative*</th>
<th>Purpose &amp; Need Issues</th>
<th>Environmental Issues</th>
<th>Construction Issues</th>
<th>Cost Analysis</th>
<th>Feasible To Proceed?</th>
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</thead>
<tbody>
<tr>
<td>NB</td>
<td>No Build: No improvements while maintaining existing bridge</td>
<td>E</td>
<td>(3.8)</td>
<td>60.8</td>
<td>Not Feasible - Does not satisfy Purpose &amp; Need Statement</td>
</tr>
<tr>
<td>A</td>
<td>Replace Bridge (3-19' lanes to 3-11' lanes); minimum roadway requirements</td>
<td>3</td>
<td>E</td>
<td>1.68</td>
<td>62.2</td>
</tr>
<tr>
<td>B</td>
<td>3-Lane focus area (Cam Court to south end of focus area)</td>
<td>3</td>
<td>E</td>
<td>1.68</td>
<td>60.9</td>
</tr>
<tr>
<td>C</td>
<td>3-Lane project area (Adgate Road to Zurmehly Road)</td>
<td>3</td>
<td>E</td>
<td>1.68</td>
<td>60.9</td>
</tr>
<tr>
<td>D1</td>
<td>3-Lane bridge with northbound right-turn lane</td>
<td>3</td>
<td>E</td>
<td>1.68</td>
<td>57.7</td>
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<tr>
<td>D2</td>
<td>3-Lane bridge with northbound right-turn lane; widen Fort Amanda Road</td>
<td>3</td>
<td>D</td>
<td>1.68</td>
<td>68.6</td>
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<tr>
<td>E1</td>
<td>Northbound/Southbound right-turn lanes; centered widening</td>
<td>4</td>
<td>D</td>
<td>2.06</td>
<td>46.4</td>
</tr>
<tr>
<td>E2</td>
<td>Northbound/Southbound right-turn lanes; widening east</td>
<td>4</td>
<td>D</td>
<td>2.06</td>
<td>46.4</td>
</tr>
<tr>
<td>E3</td>
<td>Northbound/Southbound right-turn lanes; widen Fort Amanda Road</td>
<td>4</td>
<td>C</td>
<td>2.06</td>
<td>31.4</td>
</tr>
<tr>
<td>E4</td>
<td>Northbound/Southbound right-turn lanes; widen only westbound Fort Amanda Road</td>
<td>4</td>
<td>C</td>
<td>2.06</td>
<td>29.9</td>
</tr>
<tr>
<td>F1</td>
<td>Standard 5-lane two-way left-turn lane configuration; 3-lane cross-section from focus area to Zurmehly Road and north of Cam Court to Adgate Road; centered widening</td>
<td>5</td>
<td>C</td>
<td>2.45</td>
<td>31.0</td>
</tr>
<tr>
<td>F2</td>
<td>Standard 5-lane two-way left-turn lane configuration; 3-lane cross-section from focus area to Zurmehly Road and north of Cam Court to Adgate Road; widening east</td>
<td>5</td>
<td>C</td>
<td>2.45</td>
<td>31.0</td>
</tr>
<tr>
<td>G</td>
<td>Roundabout: 2-lane entry and exit</td>
<td>4</td>
<td>A</td>
<td>2.06</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Service Roads - Short Term Solutions: Service roads are to be implemented on either side of Shawnee Road south of Fort Amanda Road and within the focus area with full access granted from both sides.

Service Roads - Long Term Solutions: Service roads will be extended on the east side of Shawnee Road south to Zurmehly Road with additional access to Shawnee Road.

*Analyzed eight conceptual alternatives*
STUDY – PRELIMINARY ENGINEERING

- Stakeholders
  - Shawnee Township Trustees
  - Fire Department
- Public meeting
  - Presentation with educational component
  - Then open-house format
FEASIBLE ALTERNATIVE ROADWAY WIDENING WITH SIGNAL

#1

- 5-lane cross section
- Considerable R/W along Shawnee Rd
- Largest bridge
- Long-term bridge closure
FEASIBLE ALTERNATIVE
SW ROUNDABOUT

#2

- Narrower bridge
- Two property takes
- Major utility relocation
- Long-term bridge closure
FEASIBLE ALTERNATIVE
NE ROUNDABOUT

#3

• Narrow bridge
• One property take
• Bridge remains open throughout
• Less utility impact
• Preliminary engineering study
  • Analyzed all three feasible alternatives
  • Performed field survey
  • Detailed right-of-way cost analysis
STUDY – PRELIMINARY ENGINEERING

- Recommended alternative
- Public meeting
  - Presentation with educational component
- Preferred alternative
DESIGN – CHALLENGES/SOLUTIONS

- Safety-access management
- Bridge
- Utilities
- MOT
- Environmental
- Bike path connectivity
- Superload vehicle
- Last minute standard update
SAFETY-ACCESS MANAGEMENT

- Medians to control access
- By-pass lane for McDonalds
- Driveway closure with by-pass lane for bank
- Roundabout minimizes access issues
- Driveway closure north of bridge
- Slower speed through intersection
• High water issues/shallow superstructure thickness: composite CB27-48 pre-stressed concrete box beams with 6” reinforced concrete deck

• Minimize closure time: Phase 1 bridge construction done without removing existing bridge; Phase 2 utilized new bridge for traffic while existing removed and new structure complete
• Minimize traffic disruption: Roundabout lanes taper through bridge, but bridge built square – width for MOT

• Gateway to Shawnee Township: Aesthetic Treatments
• Communicated w/utilities during study; held utility mtg. at KO & each Stage review

• AEP relocated two transmission poles; in easement

• All utilities had some relocation

• Buckeye Pipeline
MAINTENANCE OF TRAFFIC

• NE roundabout allowed new bridge without long-term closure

• Construction of roundabout was done in phases that allowed intersection to remain open, except a few weekend closures
ENVIRONMENTAL

- Work in river and culvert area
  - USACE permit process
  - Environmental commitments
- Three gas stations
  - FISCA
  - Contaminated ground
  - Building issues
- Extensive notes and estimated quantities
BIKE PATH CONNECTIVITY

- Connects existing and planned bike trails/paths
- Done within existing R/W
- Environmental commitment notes to minimize path closures
**SUPERLOAD VEHICLE**

- Visual disruption for drive
  - Removable bollards
  - Geo-grid to allow for grass
  - Removable artificial trees
  - Large removable traffic signs

Milestone Roundabout, UK
LAST MINUTE STANDARD UPDATE

- Roundabout
  - Center island features are within clear zone
  - Redesign of flag poles, bollard, curbing
  - No walls
SHAWNEE ROAD CORRIDOR
ODOT’S ROLE

- Program and manage as a Local Let Project
- Assist with securing various types of funding
- Assist with solutions to challenges
  - Design
  - Environmental
  - R/W
  - Utilities
FUNDING SOURCES

- Preliminary engineering and detail design
  - ODOT safety funds
  - Local funds

- R/W
  - ODOT safety funds
  - County STP
  - Local funds
FUNDING SOURCES (CONT’D)

- Construction
  - County bridge
  - MPO CMAQ
    - Roundabout
    - Multi-use path
  - MPO – STP
  - Local Funds

- Local funds
  - Various sources (OPWC, Allen Co, Shawnee Township)
NE QUADRANT – GAS STATION

- Gas station
  - <1 acre site
  - BUSTR monitored - 2009
  - Filed for bankruptcy - 2009
  - Stopped monitoring
  - Buckeye pipeline

- Project impacts
  - R/W needs – ¾ of property
NE QUADRANT – GAS STATION

- Environmental process & commitments
  - DLZ, District 1, and OES
  - ESA - gasoline discovered in monitoring well
    - Station closed doors
  - Source of gasoline?
  - Special plan notes (How to’s)
    - Handle contamination
    - Remove UST’s, drums & structures
    - Prevent gasoline from migrating to river
NE QUADRANT – GAS STATION

- R/W process
  - Assisted by many offices
  - Acquisition by easement, not WD
  - Appraised property as clean
  - Estimated clean up costs
  - Clean up cost exceeded the property value by 4 times
  - Offered the minimum allowed
  - Filed appropriation
  - Default judgement due to no response from owner
CHALLENGES AND SOLUTIONS

- Construction
- Maintenance of traffic
- Public relations
ENVIRONMENTAL
INCREASED CAMBER
SMALL GRASS AREAS
UNCONTROLLABLE CLOSURES
ALLOWABLE CLOSURES
NIGHT AND WEEKEND CLOSURES
ACCIDENTS
MAINTENANCE OF TRAFFIC
MAINTENANCE OF TRAFFIC
PHASE 1
PHASE 4
PUBLIC RELATIONS

- Press releases
- Service clubs
- Radio talk shows
- County Eng website

Honk for no round-about
PUBLIC RELATIONS

• Press releases
• Service clubs
• Radio talk shows
• County Eng website
• Graphic renderings
• Time-elapse camera
• Drones
• Facebook
• YouTube videos
• Brochures
• Advertisements
TIME-ELAPSE CAMERA
Crews spent this morning pouring the concrete sidewalk on the west side of the bridge.
FACEBOOK NOTIFICATIONS

WEEKEND CLOSURE
FOR PAVING
WEATHER PERMITTING

INTERSECTION CLOSED FOR WEEKEND
3 a.m. SAT - 3 p.m. SUN
Roundabout Benefits

- Reduced Collisions
- Improved Traffic Flow
- Reduced Noise
- Reduced Emissions

Roundabout How to Navigate

1. **Slow Down**
   - The most important thing you can do at a roundabout or any intersection is to slow down.

2. **Select Lane**
   - Just like any multi-lane intersection, you must select the correct lane prior to entering. Right lane for right turns and left lane for left turns, etc.

3. **Yield**
   - Drivers entering the roundabout must yield to all turns of traffic already inside the circle and must also yield to pedestrians and bicyclists.

4. **Merge**
   - Traffic in the roundabout flows ONE-WAY (counter-clockwise). Therefore, look left and find a gap in traffic, then merge into the roundabout to fill that gap.

5. **Maintain**
   - Once inside the roundabout, maintain your lane and maintain your speed. Do NOT change lanes or pass.

6. **Yield**
   - Give way to the roundabout刚 wants to leave, then you can continue.

7. **Emergency**
   - When emergency vehicles approach, if you are outside the roundabout, pull over and let the emergency vehicles pass. However, if you are inside the roundabout, continue to your destination, and put your flashers on. Do NOT stop inside a roundabout, as this could prevent emergency vehicles from passing.

Collision Reductions

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Overall</th>
<th>Injury</th>
<th>Pedestrian</th>
<th>Bicyclist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction</td>
<td>75%</td>
<td>95%</td>
<td>90%</td>
<td>42%</td>
</tr>
</tbody>
</table>

All About the Roundabout

What is a Roundabout?

A roundabout is a circular intersection, with traffic flowing in a counter-clockwise direction around a center island. There are no stop signs at traffic signals, therefore all traffic must yield when entering the roundabout. They also feature slower speeds (15-20 mph), which reduce the risk for accidents and help make roundabouts one of the safest types of intersections.

Why a Roundabout?

The intersection at Shawnee & Antioch Road is the busiest intersection under the Allen County Engineer's responsibility and is one of our top priorities.

- Over 14,000 vehicles per day
- Our #1 crash location for 5 consecutive years
- Congestion and delay

The roundabout design was chosen because it provided a safer and more efficient way to handle traffic compared to conventional intersections.

Pedestrians

Pedestrians must cross the street using the designated crosswalks. Pedestrians should plan in the middle of each lane changing, as well as only cross one direction of traffic at a time. This shorter crossing distance and slower moving traffic also increases pedestrian safety.

Bicyclists

Bicyclists should plan to use the designated bicycle lanes or crosswalks. They should also plan in the middle of each lane changing, as well as only cross one direction of traffic at a time. This shorter crossing distance and slower moving traffic also increases bicyclist safety.

See diagram on back...
EXPLOIT THE MEDIA
SHAWNEE ROAD CORRIDOR

Questions?
WEIGHT SUMMARY

DOLLY RIG WITH 5' GARDENS = 209,000 LB
PIECE WEIGHT = 425,000 LB
SUBTOTAL = 715,000 LB

PRIME MOVER = 2 x 40,000 LB
COUNTERWEIGHT = 2 x 40,000 LB
SUBTOTAL = 160,000 LB

LOAD ON FRONT DOLLIES
45,882 LB/Dolly (8 Tires)
7,170 LB/Tire (8 Tires/40"
714 LB/Linear Inch of Tire Width
Tire Pressure: 150 psi
Tire Size: 235 / 75 R17.5

LOAD ON REAR DOLLIES
43,893 LB/Dolly (8 Tires)
5,402 LB/Tire (8 Tires/40"
183 LB/Linear Inch of Tire Width
Tire Pressure: 150 psi
Tire Size: 235 / 75 R17.5