Foundation

- Roundabouts were beginning to appear more often as a traffic control solution nationwide.
- In the late 1990’s, KDOT was interested in roundabouts as a alternate form of traffic control. Roundabouts provided the safety, capacity and flexibility KDOT was looking for.
- Early on Barry Crown, Michael Wallwork and Kittelson & Assoc. were designing the major portion of the roundabouts in Kansas.
Direction

• Because the idea of using roundabouts was growing in Kansas, KDOT formed a committee to provide a focal point for roundabouts and their design.

• The committee wanted to ensure uniformity and consistency in the design of roundabouts, yet still allowing flexibility, on the state and local system.

• The committee decided a document was needed for Kansas. This led to the development of the Kansas Roundabout Guide.
Kansas Roundabout Guide
October 2003 Edition

- Supplement to the FHWA Guide
- Provide Consistency
- “Rules of the Road”
- Multi-lane roundabouts
- Signing, Pavement Markings
- Available on web

http://www.ksdot.org/publications.asp
Outlook

• A goal is to be self-sufficient in the review of roundabouts.
• KDOT requires a review of any roundabout that has State or Federal funding.
• Kansas is a big proponent of roundabouts and is very aggressive in implementing roundabouts and have had good success.
Modern Roundabouts in Kansas

- Approximately 36 modern roundabouts are operating in Kansas
- Approximately 20 modern roundabouts are planned or under design
Existing Modern Roundabouts in Kansas

Hutchinson, McPherson, Newton, Wichita, Junction City, Manhattan, Topeka, Lawrence, Paola, Olathe, Lenexa, Overland Park
Modern Roundabouts in Kansas

• First modern roundabout in Kansas was installed in 1997 at Candlewood & Gary (two-collector roads) in Manhattan, KS.
High speed approach roundabouts

- Paola
- Florence
- Garnett

Common theme – all three locations had high crash rates.
Paola Roundabout

- Traffic Data Old KC Road
  - Current AADT - 3000

- Traffic Data K-68
  - Current AADT - 3260
  - 18% Trucks

Prior to the Roundabout installation, the location had 17 crashes in 3.5 years
<table>
<thead>
<tr>
<th>MOE’s</th>
<th>AWSC</th>
<th>RA</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>95% Queue Length (ft)</td>
<td>92.0</td>
<td>21.0</td>
<td>-77.2</td>
</tr>
<tr>
<td>Ave. Intersection Delay (sec)</td>
<td>19.0</td>
<td>5.5</td>
<td>-71.1</td>
</tr>
<tr>
<td>Max. Approach Delay (sec)</td>
<td>41.5</td>
<td>6.5</td>
<td>-84.3</td>
</tr>
<tr>
<td>Proportion Stopped</td>
<td>0.98</td>
<td>0.035</td>
<td>-64.3</td>
</tr>
<tr>
<td>Max. Proportion Stopped</td>
<td>0.80</td>
<td>0.23</td>
<td>-71.3</td>
</tr>
<tr>
<td>Degree of Saturation</td>
<td>0.537</td>
<td>0.155</td>
<td>-71.1</td>
</tr>
</tbody>
</table>
Super Load through K-68 (Paola) Roundabout

Cat 637 Scraper

Gross Weight: 184,500 pounds on 11 axles
Height: 14'11"
Width 12'11"
Length 115 feet

12-21-2001
Florence Roundabout

- Traffic Data US-50
  - Projected AADT 5,500
  - 40% Trucks

- Traffic Data US-77
  - Projected AADT 2,800
  - 20% Trucks

The location has had 21 crashes in 2.5 years
Garnett Roundabout

- Traffic Data US-169
  - Projected AADT - 3090
  - 20% Trucks

- Traffic Data US-59
  - Projected AADT - 8500
  - 20% Trucks

The location has had 9 crashes in 3 years
This illustration depicts a roundabout being considered for the US-59/US-169 intersection south of Garnett. The exact final location and right of way needs for the roundabout cannot be determined from this drawing and could vary from those shown. KDOT makes no warranties, guarantees or representations for accuracy of this information and assumes no liability for errors or omissions. This illustration, current as of October 23, 2003, is not drawn to scale.
Roundabout Landscaping

The following slides show some different types of landscaping for roundabouts in Kansas.

- Central Island Treatment
- Perimeter Treatment
Kansas Roundabout Video

http://www.ksdot.org/publications.asp