



National Roundabout Conference  
Vail, Colorado  
May 22 – 25, 2005

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KDOT, Bureau of Design

# 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

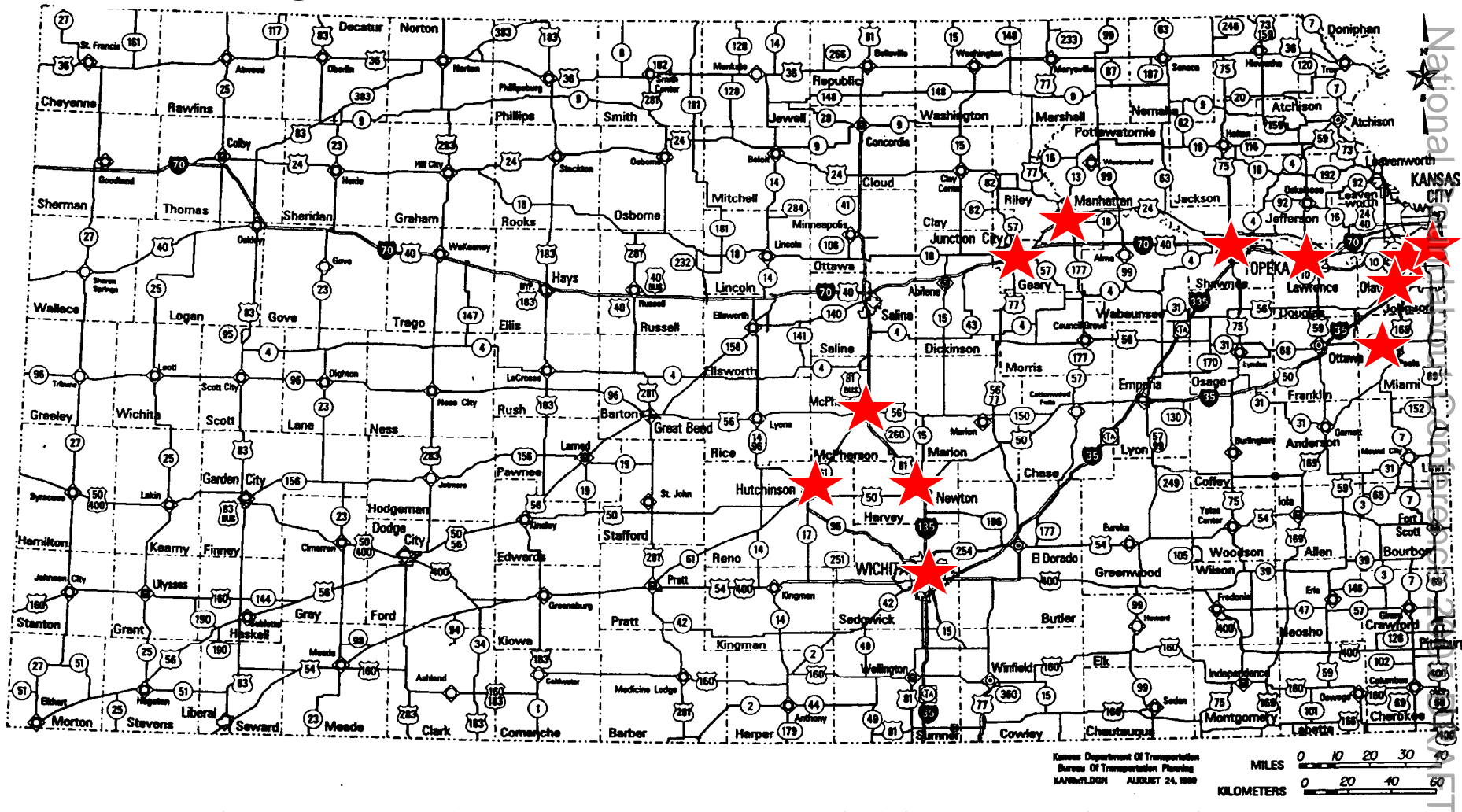
- A goal is to be self-sufficient in the review of roundabouts.
- KDOT requires a review of any roundabout that has State or Federal funding.
- Kansas is a big proponent of roundabouts and is very aggressive in implementing roundabouts and have had good success.

# 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.







Candlewood & Gary - Manhattan

# 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

# K-68 & Old KC Road – Paola



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# Paola - Measures of Effectiveness

MOE's	AWSC	RA	% Change
95% Queue Length (ft)	92.0	21.0	-77.2
Ave. Intersection Delay (sec)	19.0	5.5	-71.1
Max. Approach Delay (sec)	41.5	6.5	-84.3
Proportion Stopped	0.98	0.035	-64.3
Max. Proportion Stopped	0.80	0.23	-71.3
Degree of Saturation	0.537	0.155	-71.1

# 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



# US-50 & US-77 Florence

120<sup>th</sup>

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Cul-de-sac

US-77  
65 mph

55 mph

45 mph

Kimball Street

Water Tower

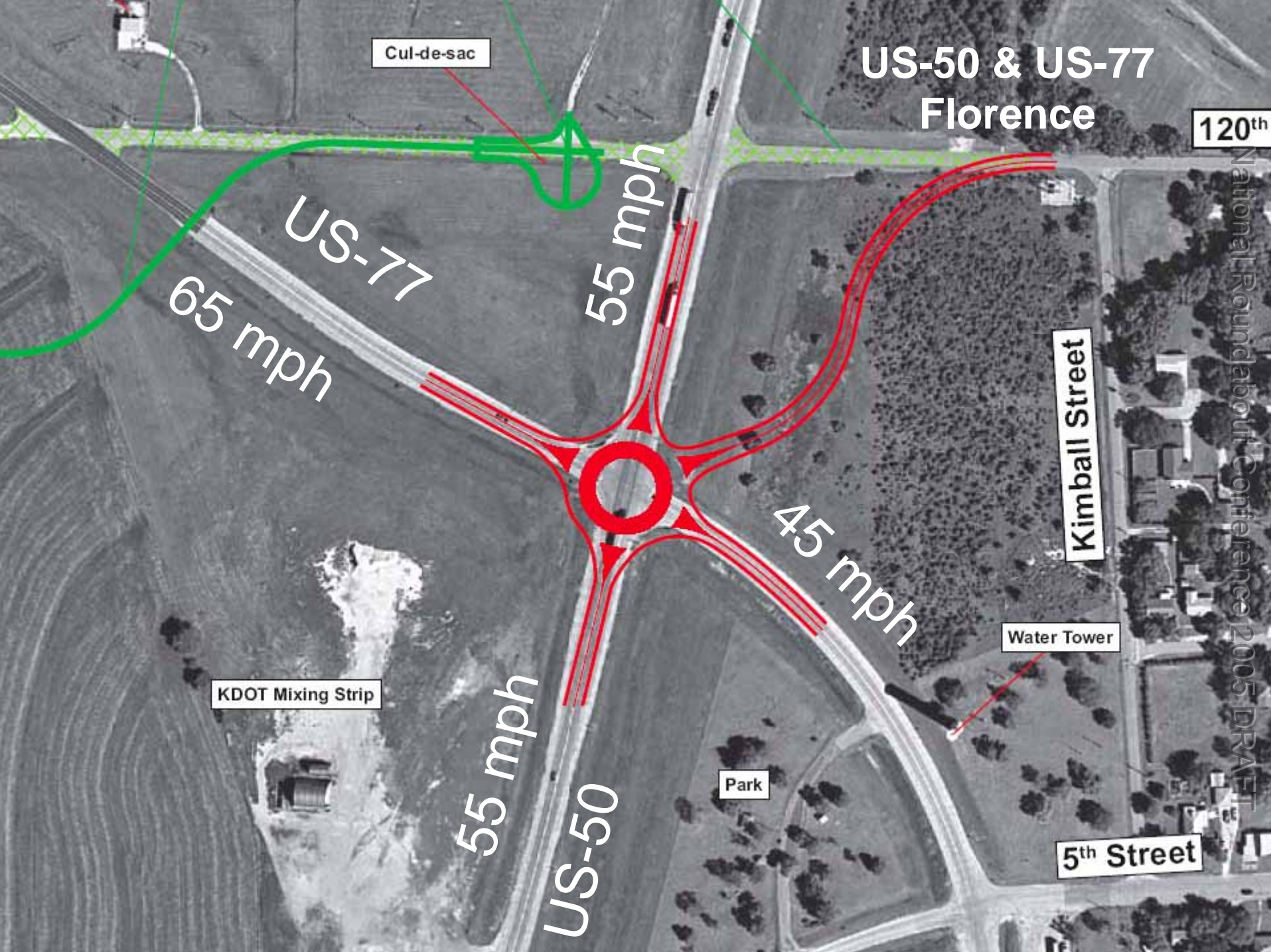
KDOT Mixing Strip

55 mph

US-50

Park

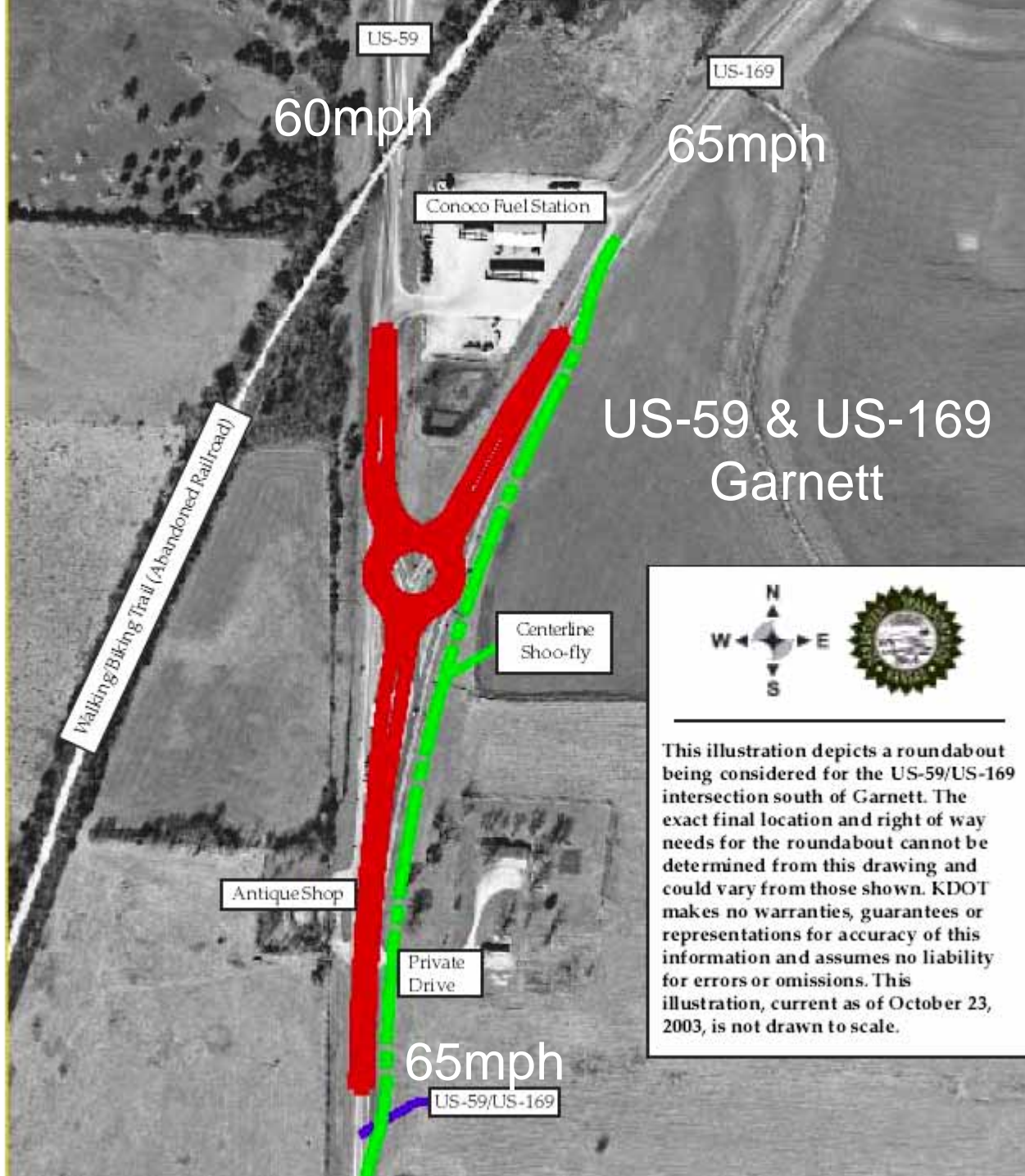
5<sup>th</sup> Street



# 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



# Roundabout Landscaping

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

- Central Island Treatment
- Perimeter Treatment





23<sup>rd</sup> & Severence – Hutchinson



Prairie Star Parkway & Monticello Rd - Lenexa



141<sup>st</sup> & Bluejacket – Overland Park



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04.05.2005

Harvard & Monterey Way – Lawrence





24th Place & Inverness Drive - Lawrence



I-70 E.B. & Rice Rd/Cyprus Dr – Topeka

# Kansas Roundabout Video

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

