



*Local Decision Making for Rural  
Roundabouts*

*Keith Berndt  
Cass County Engineer*

# Improved Safety with Roundabouts

- 75% less potential conflict points
- Head on and high-speed right angle collisions are virtually eliminated
- 90% less fatalities\*
- 76% less injuries\*\*
- 34% less crashes\*\*
- Slower vehicle speeds are safer for pedestrians

\*Safety Effect of Roundabout Conversions in the United States. Transportation Research Board (TRB) 1751

\*\*NCHRP Report 572: Roundabout in the United States, Nation Cooperative Highway Research Program, TRB



# Reduced Congestion

- Less vehicle delays
- Less stops
- Efficient during both heavy and light traffic times



# Saved Money with Roundabouts

- No signals to maintain
- May require less pavement



# Roundabouts are a simple concept

- They eliminate conflicting left turns
- UPS has discovered the benefits of right turns over left turns



## Cass County ND Highway 17 project

- 6 mile asphalt overlay project with some reconstruction, turn lanes and shoulder widening
- ADT of 3,000 – 5,000
- High AM and PM peak flows



# Cass 17 and 52<sup>nd</sup> Avenue Intersection

- Misaligned West Leg
- Grain Bins, Power Lines, Barn, and House close to intersection
- Right of way challenges
- Close proximity to Sheyenne River Bridge

# Cass 17 – 52<sup>nd</sup> Ave Intersection





# Grain Bins west of C17 at 52<sup>nd</sup> Ave.



# House at C17/52<sup>nd</sup> Ave intersection



# Barn and House north of C17/52<sup>nd</sup> Avenue Intersection

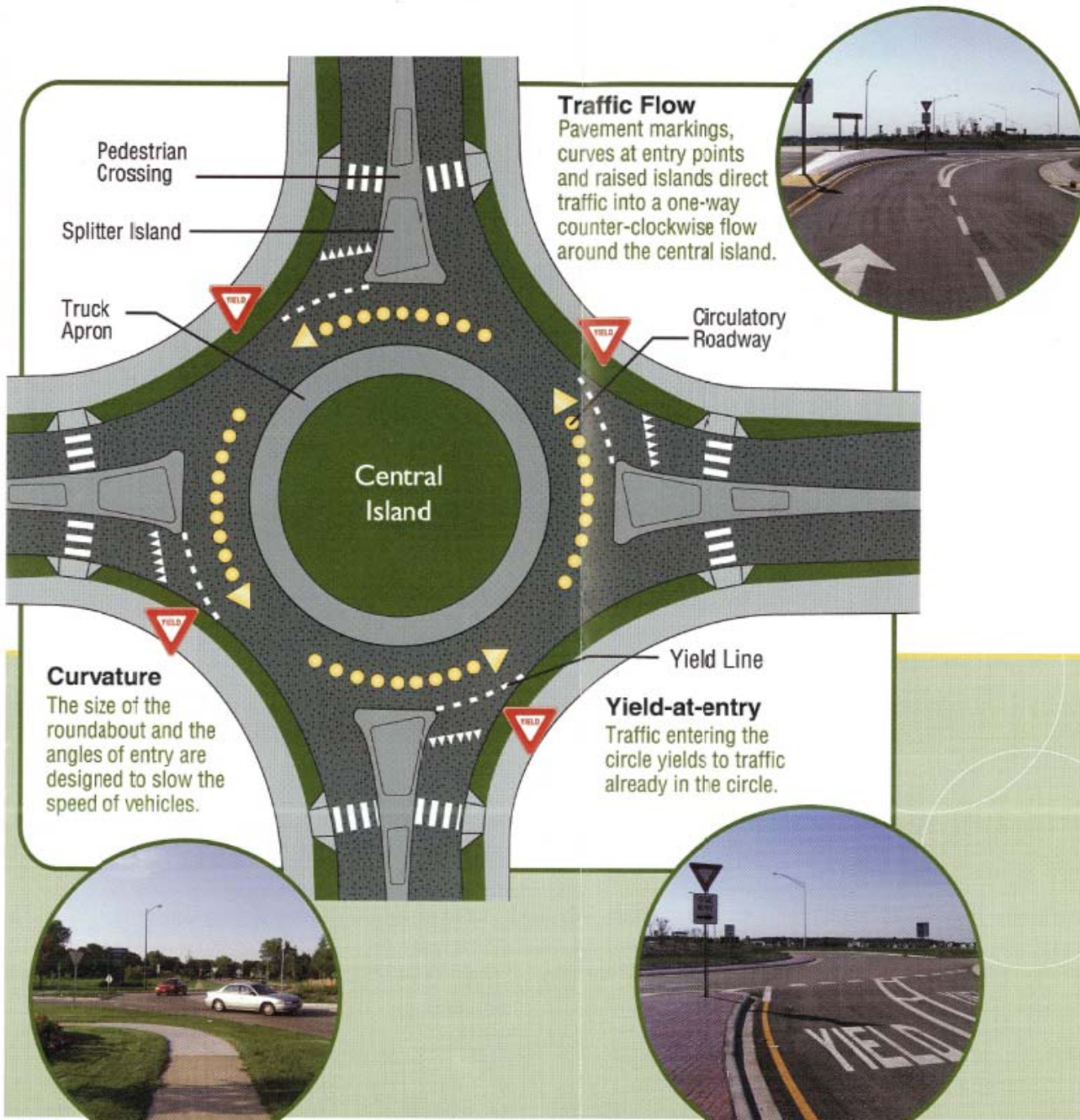




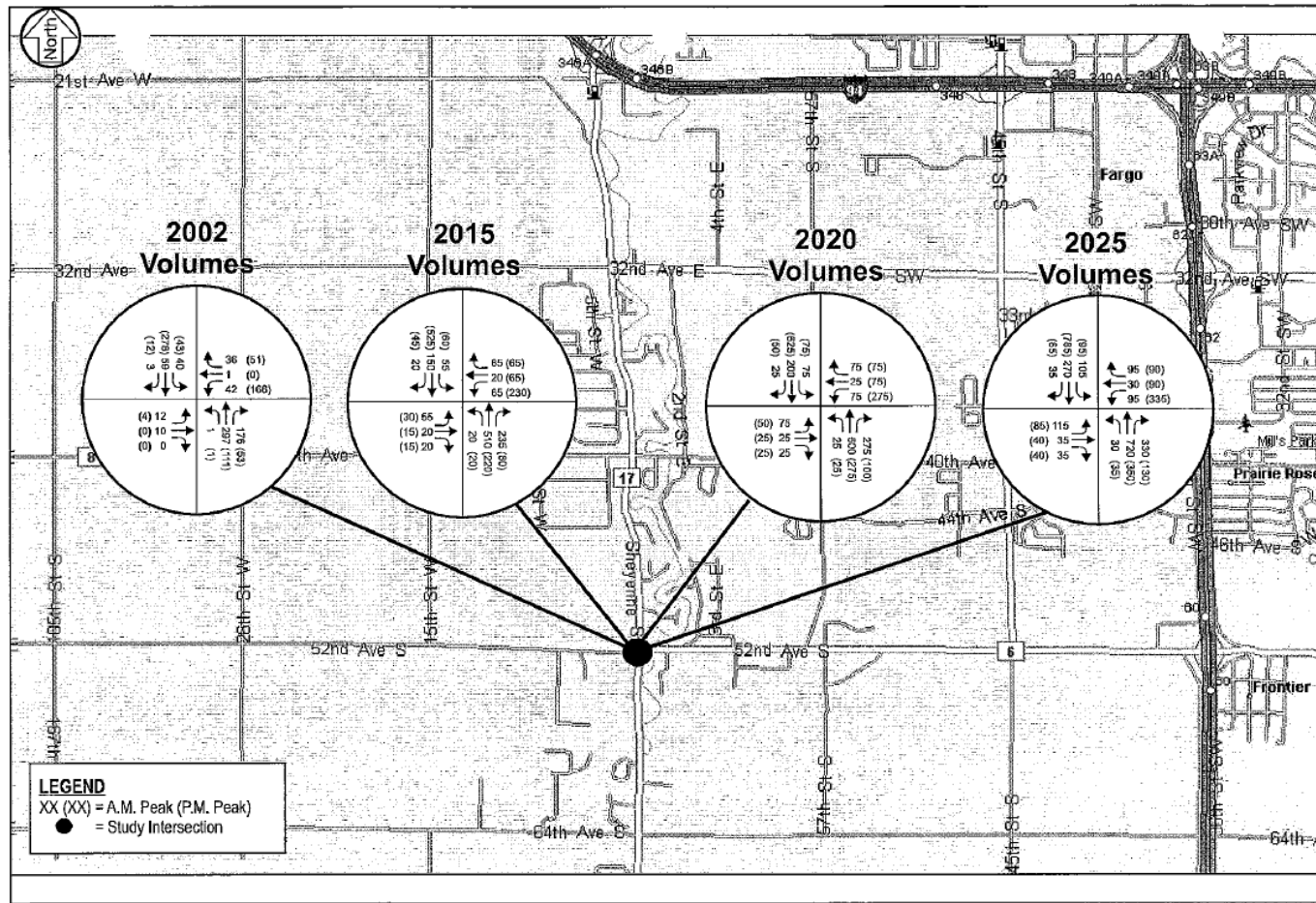
# Options Considered

- Conventional: Un-signalized/Signalized
  - Didn't meet signal requirements, likely would in time
  - Public concern
- Modern Roundabout: Tough Sell

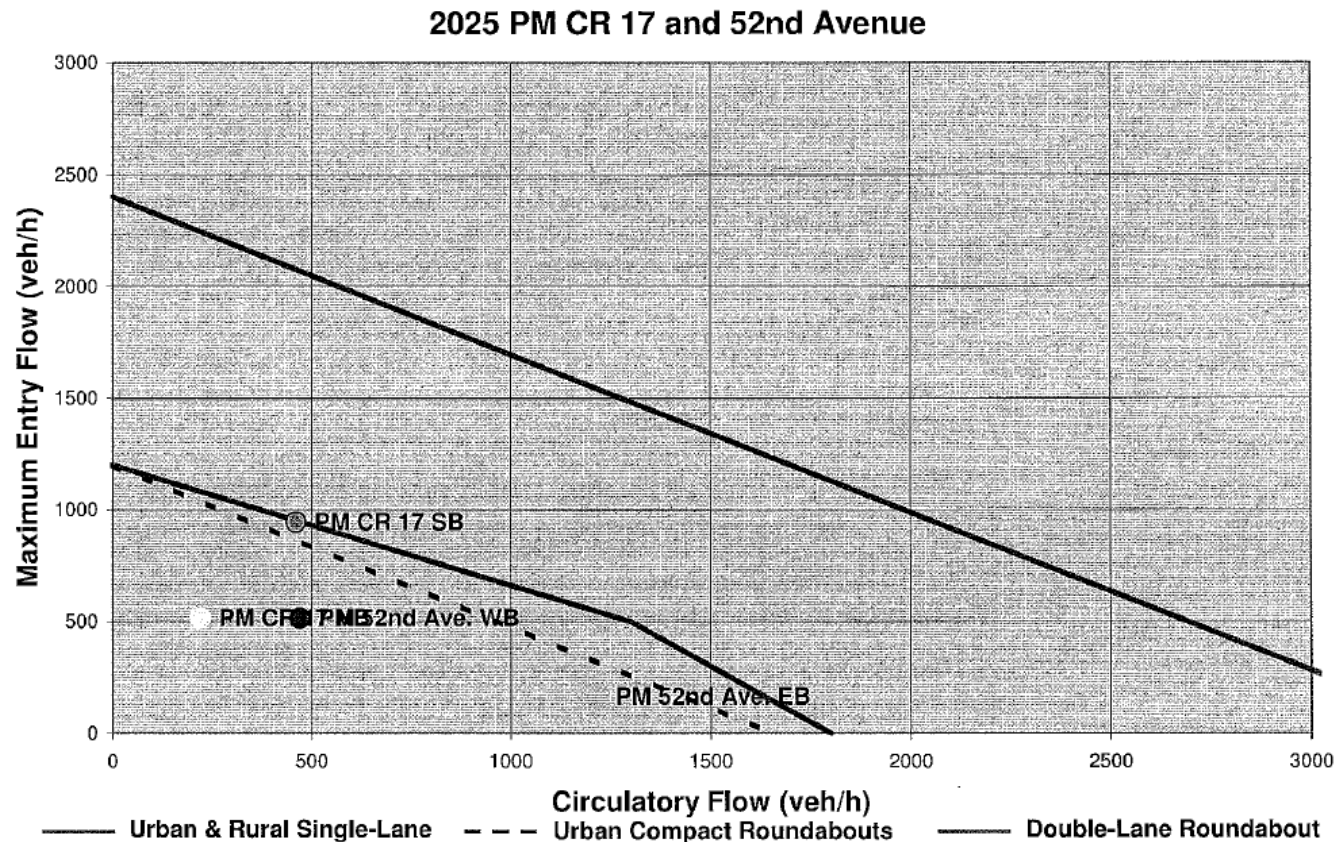
# Features of a Modern Roundabout



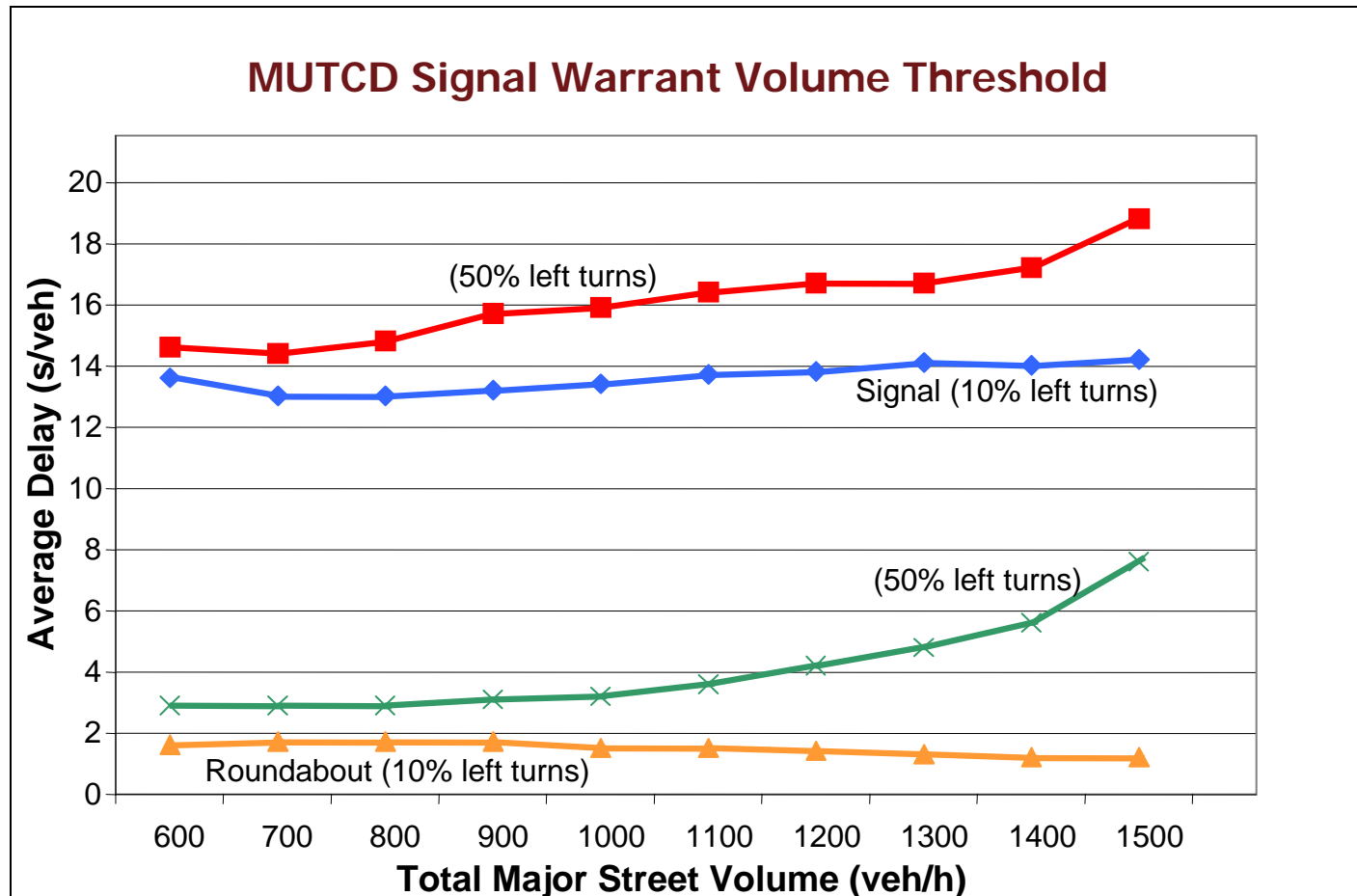
# Round About Analysis



# Round About Analysis



# Roundabouts often have less delay than signals





# Third Party Review



**KITTELSON & ASSOCIATES, INC.**  
TRANSPORTATION ENGINEERING / PLANNING  
810 SW Alder Street, Suite 700, Portland, OR 97205 P 503.228.5230 F 503.273.8169

## MEMORANDUM

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Date: April 18, 2008 Project #: 9406  
To: Keith Berndt  
Cass County Department of Public Works  
1201 Main Avenue West  
West Fargo, ND 59078  
From: Lee Rodegerdts and Andrew Cibor  
Project: Proposed CH 17/52<sup>nd</sup> Avenue Roundabout  
Subject: Roundabout Peer Review Summary

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Kittelston & Associates, Inc. (KAI) has performed a review of the proposed roundabout at the intersection of CH 17/52<sup>nd</sup> Avenue in West Fargo, North Dakota. The documents and designs used in the review were provided on April 4<sup>th</sup>, 2008 by Cass County Department of Public Works and prepared by SRF Consulting Group, Inc. The design incorporates an ultimate multilane configuration and an interim single-lane design for which 95% plans have been prepared.

This review is primarily of the single-lane roundabout design and assesses the following items:

- Lane numbers and arrangements
- Fastest path and design vehicle checks
- Horizontal alignment and cross section
- Pedestrian and bicycle features
- Signing and striping

This review has been conducted in general conformance with the principles outlined in FHWA's *Roundabouts: An Informational Guide* (the FHWA Roundabout Guide), the Kansas Department of Transportation's *Kansas Roundabout Guide*, *NCHRP Report 572: Roundabouts in the United States*, and other research and experience on similar types of projects.

# Extensive Information Available

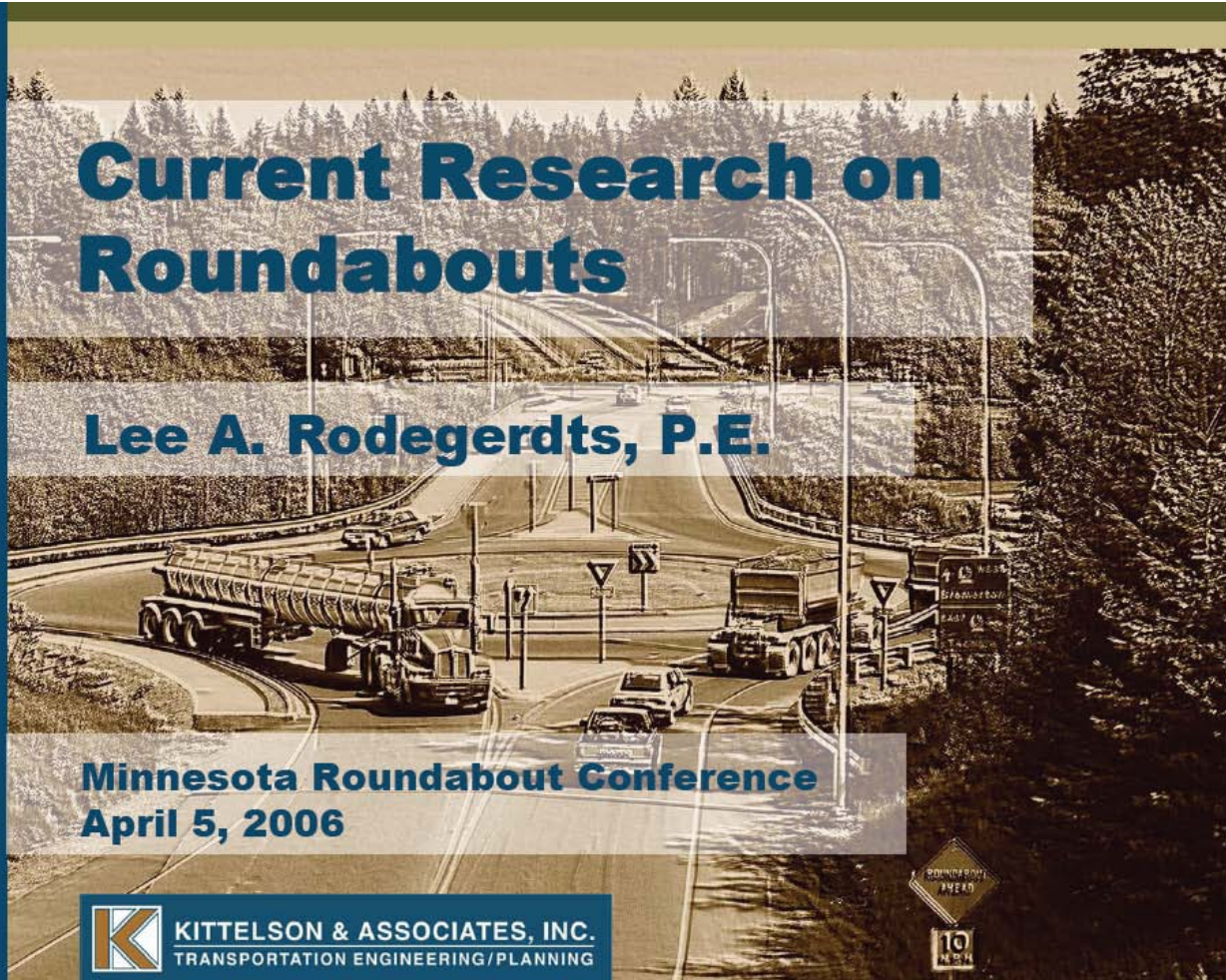
## Current Research on Roundabouts

Lee A. Rodegerdts, P.E.

Minnesota Roundabout Conference  
April 5, 2006



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# Landscaping

## 6.7 Landscaping Considerations

The use of landscaping at a roundabout is one of the distinguishing features that give roundabouts an aesthetic advantage over traditional intersections. The type and quantity of landscaping plantings or other material incorporated into the roundabout design may be dependant on both the site location and level of care available for maintenance. Exhibit 6-42 illustrates examples of landscaping installed at existing Kansas roundabouts.

**Exhibit 6-42**  
**Summary of Landscaping Schemes at Existing Kansas Roundabouts**  
Lawrence, Kansas – 24<sup>th</sup> Place at Inverness Drive



Topeka, Kansas – I-70 Ramps at Rice Road and Sycamore Drive



## Kansas Roundabout Guide

*A supplement to FHWA's  
Roundabouts: An Informational Guide*

Creeping Juniper

Diabolo Ninebark

Dart's Red Spirea



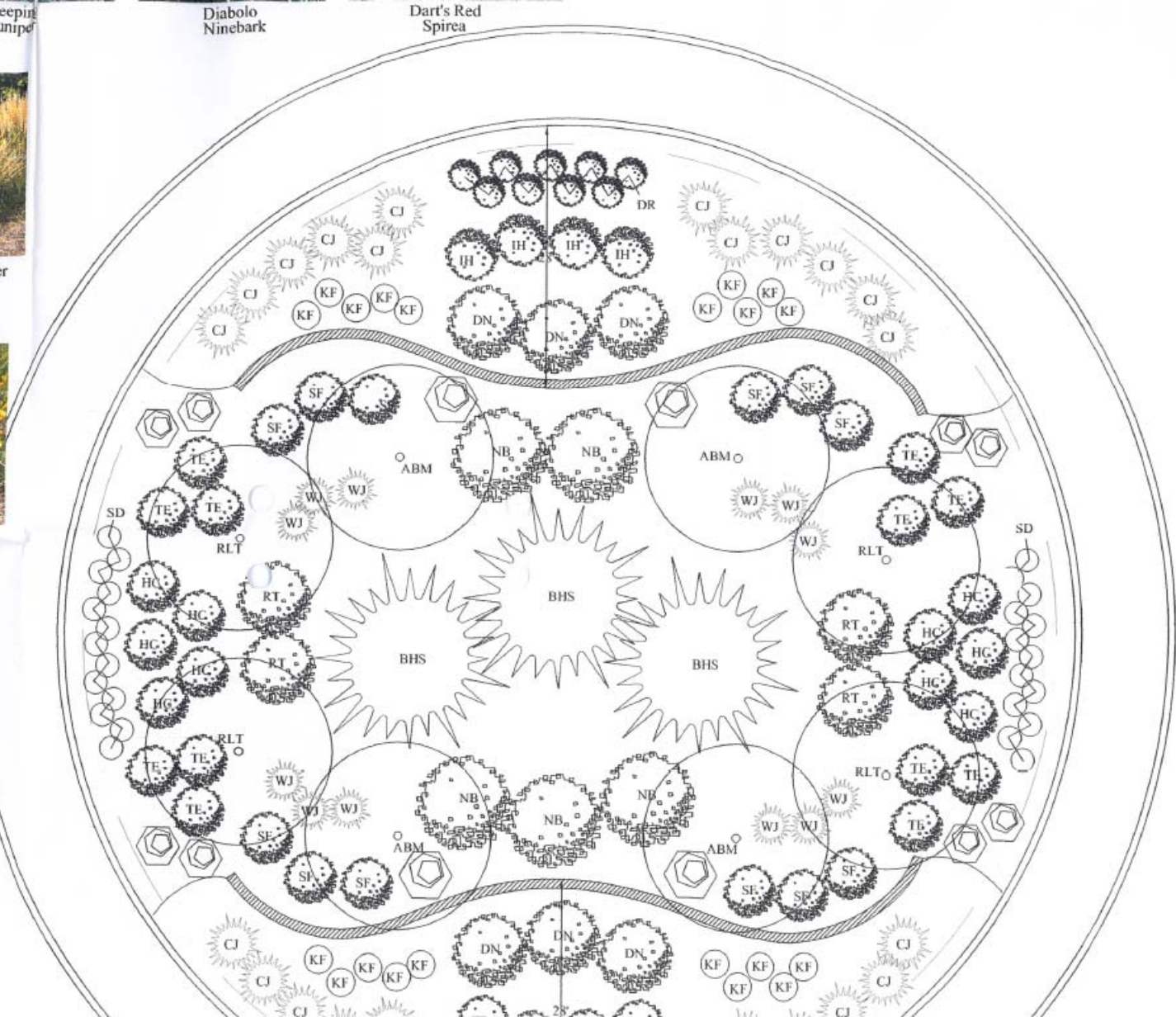
Karl Foerster Grass



d'Oro Lily



Juniper



**Roundabout**  
 Cass Cty 17 & 52nd Ave S



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CASS 17 & 40th AVE



# QUESTIONS