Modern Roundabouts
An Informational Presentation Prepared For:
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‘Roundabouts and Livability’

3 Case Studies

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Presentation Outline

• Transportation Systems And ‘Live-ability (Macro to Micro)

  – Transportation Systems are Foundational (macro):
    • Development Patterns & Land Use
    • Effect Scale of and Mass of our Roadways
    • Creates the Fabric that ‘we’ interact with daily
• Transportation Systems And ‘Live-ability (Macro to Micro)

  – Transportation Systems Must Balance Competing Needs:
    • Capacity (for all modes)
    • Safety (for all modes)
    • Costs (monetary and user costs)
    • ROW Impacts
    • Air Quality
    • Circulation and Business Access Needs

  – We will Look at Projects that Utilized High Capacity Roundabouts to Achieve a Balance
NJ - Rotary
Rt. 206/202 Summerville, NJ
Vail Colorado
Vail, CO – 1988

- Congested Interchange
- $15M Conventional Interchange Alternative to achieve Improvement

Video Courtesy of: Ourston Roundabout Engineering
Vail Colorado

Main Vail - Diamond Interchange $2.5M (8,200 vph)

The Vail Trail - November 1994
Prior to Modern Roundabout

POLITICALLY INCORRECT
by Don Siddle

THE IDEA OF THIS TRAFFIC PLAN IS TO TAKE CARS FULL OF SKIERS RUSHING TO GET ON THE SLOPES, FUNNEL THEM INTO AN UNFAMILIAR CIRCLE ON ICY SNOW PACKED ROADS.

WHO SAYS CALIFORNIA HAS THE BEST NUTS?

Graphic Courtesy of: Ourston Roundabout Engineering
Community Acceptance

Vail, CO  Constructed Oct. 1995

• Voted Best Public Works Project 5 Years Straight

Video Courtesy of: Ourston Roundabout Engineering
Community Acceptance
West Vail Diamond Interchange
Design Capacity: 3,700 + 3,300 = 7,000 vph

Video Courtesy of: Ourston Roundabout Engineering
Urban Multi-Lane Roundabout:

Photo: Lee Rodegerdts
Pedestrians

4,500 - 5,000 VPH

Roundabout
Avon, CO

Signal
Loveland, CO
Pedestrians
4,500-5,000 VPH

Roundabout
Avon, CO

Signal
Loveland, CO
Madison, WI

• Missing Sidewalk / No Bike Lanes
Existing Conditions

• Peak Hour Congestion and Delay

• 10 crashes per year
• Ave 8 serious injuries/yr
• 1.2 crashes per MEV
• ~80% Injury Crashes
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STH 30/Thompson Drive - Madison

Signal Alternative

Purchase Homes

Shorten Drives

Roundabout
Thompson Drive
Thompson Drive
Thompson Drive
Anchorage AK
Diamond Interchange
Anchorage AK
Diamond Interchange
CAPE COD, MASS
Mt Horeb WI
Mount Horeb, WI
Mount Horeb, WI
Mount Horeb, Wisconsin
Pedestrian Comparison
Mount Horeb, Wisconsin
Pedestrian Comparison
STH 78/92 Mount Horeb, Wisconsin
2,000 VPH, 2,800 design
Zero Crashes in 10 month

- Flared Two-lane entry
- Two-lane Thru lanes WB
- Flared Two-lane entry, RT only
- Varying circulating width 24-32'
- Two-lane Tapered Exit

* Business Access
Mount Horeb, Wisconsin
Loveland, CO
City of Loveland

- 63,000 population – high growth ~13,000 since 2000 census
- First Roundabouts 1997
City of Loveland

- Very High Growth
- Major Developments
City of Loveland

- Very High Growth
- Major Developments
City of Loveland

- Very High Growth
- Major Developments
City of Loveland, CO

- Constructed
- Proposed
- Ex. Signal
- Future Roundabout?)
City of Loveland, CO
Arterial Intersection Spacing
Loveland, CO 1997
City of Loveland, CO
Business Access
Loveland, CO 2002

~3,000 VPH
City of Loveland, CO
Pedestrians
Loveland, CO 2002

Roundabout
Loveland, CO

Signal
Loveland, CO
City of Loveland

Safety of Roundabout

~ 1/10 the crash rate of comparable signals in Loveland
City of Loveland

- 6 high volume modern roundabouts since 1997
- 5 under construction in 2005
- 7 High Capacity Planned
- 26 “Traffic Calming” circles
- 75 signals
End / Summary

- Roundabout Design is Based on:
  - Traffic/Transportation Engineering Science and Principles
    - Roundabouts are Not a Cure All
    - However significant benefits can be achieved for Improved Live-Ability
    - Correct Design Required for Optimal Operations