Park City, Utah’s Access Management for the Olympic Transit Center/Roundabout in Old Town

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Presentation Outline

• Access Control and Roundabouts
• Roundabouts Near Traffic Signals
• Park City’s Olympic Transit Center/Roundabout
• Other Local Examples

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Utah’s First Traffic Circle *Circa 1930*
Why Roundabout?

- Skewed “Y” Intersection
- Limited ROW
- High Left-turn Volumes
- Traffic Backups
- Added Capacity for Future
- Safety/Speed Reduction
Roundabout Advantages

- Reduce Speeds
- Improved Safety
- Decrease Delay
- Entry Statement
- No Stop Signs
Basic Design Principles

- Yield at Entry
- Deflection
- Flare
More Favorable Locations

- High Delays
- High Left-turn Flows
- Signal not Warranted
- Four-way Stop
- Skewed Intersection
- Near Existing Traffic Signals?
Braking Distance vs. Speed

Stopping Sight Distance

- 20 mph: 125' (Braking Distance), 73' (Perception Reaction Distance)
- 50 mph: 475' (Braking Distance), 150' (Perception Reaction Distance)

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Intersection Functional Area – Traffic Signal
Why are roundabouts installed near traffic signals?
To allow full-access within the influence areas of signalized intersections.
Traffic Signal with Raised Medians

- Allow wider entry width at the entrance to storage area to allow for spillover into roundabout
- If left-turn storage is exceeded a double-left may be warranted
West Jordan, UT – 220-ft. Storage Length
2002 Salt Lake City Winter Olympic Venues

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Park City, Utah Example - Location
Salt Lake 2002 Winter Olympics

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Deer Valley Winter Olympics

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Transit Center Winter Olympics

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Park City’s Main Street Before Construction
Existing Conditions  Y-Intersection
One Signal  Left-turn Storage Areas
Design Goals

- Reduce speeds and accidents on SR-248
- Provide a high capacity intersection for the Olympics and allow access to the new transit center
- Include bike trail and pedestrian crossings
- Provide full access to Swede Alley
Park City Roundabout Design

Figure 1: Park City Intermodal Roundabout Design

- Deer Valley Drive (SR-224)
- Poison Creek
- Rail Trail
- Tunnel
- Heber Ave
- Swede Alley
- Transit Center Access Road
- Old Town Main Street
- Ontario St.
- Marsac Ave

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Park City - SR 224 Intersection Alternatives

- Signals
- Roundabouts
- Transit Center Connection
- Impacts to Historic Old Town
Roundabout Design Highlights

- 180 feet Inscribed Circle Diameter
- 2-Lane Entries/Circulatory Lane
- 23 mph Design Speed
- Capacity: 3,500 vph
- Design Vehicles: Bus, WB-67
- v/c: 0.85
Widen intersections, not the whole road.

A series of roundabouts provides a high-capacity, low-cost alternative to road widening. Roundabouts create capacity just where it is needed, at the intersections, minimizing the total cost of bridge widening, pavement, and right of way.
Light Rail to University Hospital 2003

- 1.5 Mile HSC Extension Opens Fall 2003
- 9,500 HSC Employees
- 500,000 Clinic Visits/yr.
- 7,000 Walk-ins/day
Existing T-Intersection  
(25+ Years Old)

- Stop-Controlled EB Thrus and WB Lefts
- Double Free-Rights NB
- Free Rights EB and Free-Thru WB

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Access Management

- 350-ft spacing to traffic signal
- Eliminated 9 light rail track crossings
- Allowed shuttle bus system to continue with existing shelters on corridor
- Raised median with tracks allows for right-in/right-out at existing driveways
- Pedestrians all cross at traffic signals or on grade separated paths
Access Management and Light Rail Goals

- Where to Put Stations/Spacing?
- Center Running vs. Side Running?
- Intersection Traffic Control: Signals or Roundabouts?
- Nearby traffic signal
- TRAX Interface with:
  - Driveways
  - UTA Bus
  - Campus Shuttle
  - Automobiles, and
  - Pedestrians

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Conclusions

- Roundabouts can assist with access management
- The transit center with roundabout provided a safe high capacity intersection in a small space while providing full access to the commercial area and ski resorts.