Mini-Roundabouts

NCITE
Geometric Design Committee

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Will Stein

FHWA – Minnesota Division
Mini-roundabouts in MN

- Shakopee
- Savage
- St. James
- Rochester
- Winona
- Anoka
- Elk River
- Savage
- Rochester
- Winona
## Mini-roundabouts in MN

### Constructed or Scheduled for 2017 Completion

<table>
<thead>
<tr>
<th>Location</th>
<th>Completion Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mn Highway 4 (1st Ave) and Armstrong Blvd, St. James</td>
<td>2017</td>
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<tr>
<td>Mn Highway 4 (1st Ave) and 7th Street, St. James</td>
<td>2017</td>
</tr>
<tr>
<td>18th Ave NW (County Road 112) and 48th St NW, Rochester</td>
<td>2017</td>
</tr>
<tr>
<td>Washington Street/4th Avenue/Military Road, Anoka</td>
<td>2017</td>
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<tr>
<td>Louisiana Avenue and South Park Drive, Savage</td>
<td>2016</td>
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<tr>
<td>Gilmore Avenue, near US 61, Winona</td>
<td>2016</td>
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<tr>
<td>Spencer Street (County Road 79) and Vierling Drive, Shakopee</td>
<td>2014</td>
</tr>
<tr>
<td>Railroad Drive/3rd Street NW/Irving Avenue NW, Elk River</td>
<td>2013</td>
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</tbody>
</table>

### Programmed

<table>
<thead>
<tr>
<th>Location</th>
<th>Completion Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roselawn Avenue and Edgerton Street, Maplewood</td>
<td>2020</td>
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</table>
Mini-roundabouts

- A single lane roundabout with inscribed circle diameter between 50 – 90 ft.
- Raised but traversable central island and splitter islands.
- Intersections on 2-lane or 3-lane high-volume collector roads.
- Speed 35 mph or less. Sometimes 45.
- Low truck/bus volume.
Benefits

- Fits within existing intersection.
  - No additional right-of-way.
- Low construction cost.
- Less fuel use.
  - Lower emissions.
- Efficient traffic operations.
- Increased safety.
  - Fewer conflict points.
  - Prevents right-angle crashes.
  - Reduced speed.
  - Shorter pedestrian crossings.
Shakopee/Scott County
CR 79 (Spencer Street) and Vierling Drive
Shakopee/Scott County
CR 79 (Spencer Street) and Vierling Drive
After video
Mini-roundabouts
Hartford County, Maryland
construction cost: $185,000
City of Savage
Louisiana Avenue and South Park Drive
Performance-based design
Performance-based design
What about reducing work zone impacts?
What about reducing work zone impacts?
Pedestrians
Hartford County, MD

Pedestrian Crossings
Standard Intersections

- False sense of security
- Crossing two lanes at a time
- Pedestrians look four directions, including behind them, before crossing

**Conflict Points**

- For Vehicles: 32 Conflict Points
- For Pedestrians: 16 Conflict Points
Roundabout

- Shorter crossing – 16" versus >24’-48’
- Refuge Island – creates safe haven
- Motorist multi-stage recognition
- Pedestrians only look one way at a time

Conflict Points

For Vehicles: 8 Conflict Points
For Pedestrians: 8 Conflict Points
Pedestrians
Pedestrians